MONITORING *the* FUTURE

NATIONAL SURVEY RESULTS
ON DRUG USE
1975-2020

2020
Volume 2

College Students & Adults Ages 19–60

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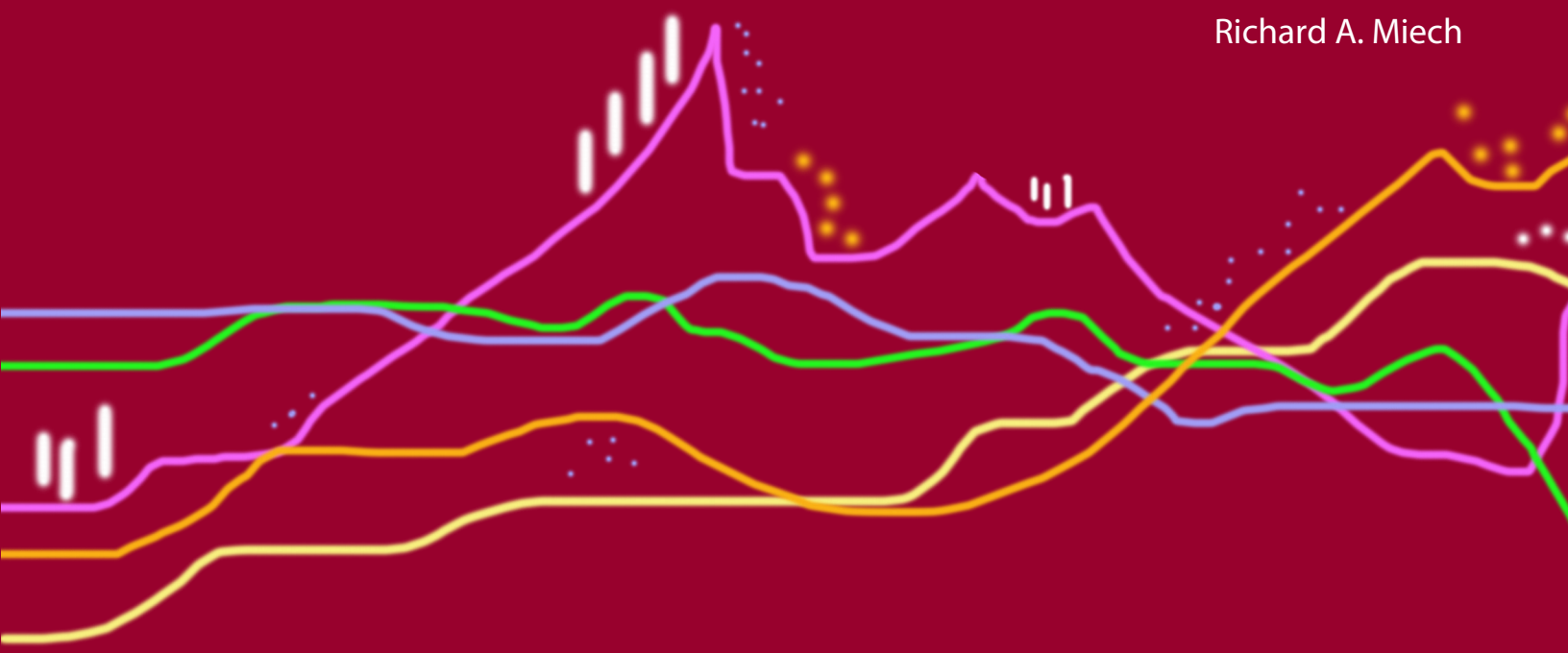

Sponsored by The National Institute on Drug Abuse at The National Institutes of Health

MONITORING THE FUTURE

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Volume II

College Students and Adults Ages 19-60

by

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The University of Michigan
Institute for Social Research

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Chapter 1

INTRODUCTION

The present volume presents new 2020 findings from the U.S. national Monitoring the Future (MTF) follow-up study concerning substance use among the nation's college students and adults from ages 19 through 60. We report 2020 prevalence estimates on numerous illicit and licit substances, examine how substance use differs across this age span, and show how substance use and related behaviors and attitudes have changed over the past four decades. Note that the current volume builds directly on the previous volumes; we bring in new data each year and add to the interpretation of the growing trends. The authors of the various editions of this volume in this long series changed some as new investigators joined the study.[1]

MTF, now in its 47th year, is a research program conducted at the University of Michigan's Institute for Social Research under a series of investigator-initiated, competing research grants from the National Institute on Drug Abuse – one of the National Institutes of Health. The integrated MTF study comprises several ongoing series of annual surveys of nationally representative samples of 8th and 10th grade students (begun in 1991), 12th grade students (begun in 1975), and high school graduates followed into adulthood (begun in 1976).

The 2020 panel data collections occurred during the start of the COVID-19 pandemic (from March 2020 through November 2020), and this volume constitutes one of our first considerations of possible pandemic effects on prevalence and trends of substance use among the MTF young and middle-aged adults. The pandemic has caused fundamental changes in the daily lives of teens and adults, including disrupting school and work life, increasing time spent alone and with family members, and decreasing time spent with classmates, workmates, and peers. This endemic disruption is likely to affect substance use,[2] and MTF is uniquely designed to examine such potential period effects and quite likely lasting cohort effects.

We report the results of the repeated cross-sectional surveys of all high school graduating classes since 1976 as we follow them into their adult years (as discussed in Chapter 3, these cross-sections come from longitudinal data). Segments of the general adult population represented in these follow-up surveys include:

[1] The first 13 editions of this volume (1991-2003) were written by the original three MTF investigators (Lloyd Johnston, Patrick O'Malley, and Jerald Bachman). The authorship expanded as they were joined in subsequent years by John Schulenberg (starting in 2004), Richard Miech (starting in 2014), and Megan Patrick (starting in 2017). All previous Volume 2 editions may be found on the MTF website.

[2] See for example: Eastman, M.R., Finlay, J.M., & Kobayashi, L.C. (2021). Alcohol use and mental health among older American adults during the early months of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health, 18,* 4222.; Graupensperger, S., Fleming, C.B., Jaffe, A.E., Rhew, I.C., Patrick, M.E., & Lee, C.M. (2021). Changes in young adults' alcohol and marijuana use, norms, and motives from before to during the COVID-19 pandemic. *Journal of Adolescent Health, 68* (4), 658–665; MacMillan, T., Corrigan, M.J., Coffey, K., Tronnier, C., Wand, D., & Krase, K. (2021). Exploring factors associated with alcohol and/or substance use during the COVID-19 pandemic. *International Journal of Mental Health and Addiction*; Maggs, J.L. (2020). Adolescent Life in the early days of the pandemic: Less and more substance use. *Journal of Adolescent Health, 67(*3), 307–308; Richter, L. (2020). The effects of the COVID-19 pandemic on the risk of youth substance use. *Journal of Adolescent Health, 67* (4), 467–468.

- U.S. college students,
- same-aged youth who also are graduates from high school but not attending college full time, sometimes in the past called the "forgotten half,"[3]
- all young adult high school graduates of modal ages 19 to 30, called the "young adult" sample, and
- high school graduates at the specific later modal ages of 35, 40, 45, 50, 55, and 60.

This volume emphasizes historical and developmental changes in substance use and related attitudes and beliefs occurring at these age strata.

The follow-up surveys have been conducted by mail and web[4] on representative subsamples of the previous participants from each high school senior class. This volume presents data from the 1977 through 2020 follow-up surveys of the graduating high school classes of 1976 through 2019, as these respondents have progressed into adulthood. The oldest MTF respondents, from the classes of 1976-1978, have been surveyed through age 60, 42 years after their high school graduation.

Other monographs in this series include the *Overview of Key Findings*,[5] which presents early results from the secondary school surveys; *Volume I*,[6] which provides an in-depth look at the secondary school survey results; and the *HIV/AIDS monograph*,[7] drawn from the follow-up surveys of 21- to 30-year-olds, which focuses on risk and protective behaviors related to the transmission of HIV/AIDS. This year's *Overview* and *Volume I* are currently available on the MTF website[8]; the next *HIV/AIDS monograph* will be published in mid-October, 2021.

In this volume, we first provide a selective summary of key findings spanning ages 19-60 (in Chapter 2[9]). Chapter 3 (which is similar to Chapter 3 in *Volume I*) outlines the integrated study's design and procedures. Chapter 4 provides prevalence estimates, and Chapter 5 provides historical trends for drug use for a number of age bands from respondents ages 18 through age 60. Chapter 6 concerns prevalence and trends in attitudes and beliefs about drug use for young adults. Chapter 7 covers the social context of drug use in terms of peer norms and use, as well as perceived availability of drugs. Chapters 8 and 9 provide prevalence estimates and historical trends, respectively, for college students and same-age noncollege youth. Chapter 10 (which is similar to Chapter 10 in *Volume I*) provides a summary of other recent publications from the integrated MTF study.

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[3] Halperin S. *The forgotten half revisited: American youth and young families, 1988-2008.* Washington DC: American Youth Policy Forum; 1998.

[4] In 2020, web-push data collection procedures were used for all 19-30 year old respondents. This was preceded by two years – in 2018 and 2019 – of testing for survey mode differences among 19-30 year olds. To test for survey mode differences, we randomly assigned half of the young adult respondents in both 2018 and 2019 to the typical mail survey condition and half to the new web-push condition. In general, prevalence estimates did not vary significantly between the two conditions in either year and thus the two halves are combined in a weighted average in this volume. Exceptions (that is, when estimates differ significantly between conditions) have been noted. In 2020, we did a one-year test of possible survey mode differences among 35-60 year olds; as was true among 19-30 year olds, we found few significant differences and thus the two halves are combined in a weighted average in this volume and we note the significant differences. This is discussed in more detail in Chapter 3.

[5] Johnston, L. D., O'Malley, P. M., Miech, R. A., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Overview, key findings on adolescent drug use.* Ann Arbor, MI: Institute for Social Research, The University of Michigan.

[6] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975–2020: Volume I, Secondary school students*. Ann Arbor, MI: Institute for Social Research, The University of Michigan.

[7] Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., Patrick, M. E. & Miech R. A. (2020). *HIV/AIDS: Risk & protective behaviors among adults ages 21 to 30 in the U.S., 2004–2019.* Ann Arbor, MI: Institute for Social Research, The University of Michigan.

[8] Please visit http://monitoringthefuture.org/pubs.html#monographs to access the full text of these monographs.

[9] In previous editions of this volume up through 2019, we provided a brief summary of key findings from the integrated MTF study, including 8th, 10th, and 12th graders, college students, and young adults; Appendix A now provides those tables and figures.

SURVEYS OF YOUNG ADULTS AGES 19-30 AND ADULTS AGES 35, 40, 45, 50, 55, AND 60

The current young adult findings are based on representative samples from each graduating class from 2007 to 2019, all surveyed in 2020 and corresponding to modal ages 19 through 30. College students are included as part of this young adult sample. The MTF study design calls for annual follow-up surveys of each high school class cohort through modal age 30 (based on high school seniors being modal age 18). Each individual participates in a follow-up survey only every two years, but a representative sample of people in each graduating class is obtained every year because each cohort's follow-up sample is split into two random sub-samples that are surveyed in alternate years. Thus, individual participants at modal ages 19-30 are surveyed biennially. Subsequent surveys are conducted at five-year intervals starting at age 35. In 2020 the graduating classes of 2007-2019 received biennial young adult surveys, and the classes of 1978, 1983, 1988, 1993, 1998, and 2003 were sent the age-60, age-55, age-50, age-45, age-40, and age-35 questionnaires, respectively.

In this volume, we reweight respondent data to adjust for the effects of panel attrition on measures such as drug use, using post-stratification procedures described in Chapter 3 in the section on panel retention. We are less able to adjust for the absence of students who drop out of high school and thus who are not included in the original 12th grade sample. Because nearly all college students have completed high school, the omission of high school dropouts should have almost no effect on population estimates for the college students, but this omission does affect the estimates for entire age groups. Therefore, the reader is advised that the omission of about 6% to 15% of each cohort who have dropped out of high school likely means that drug use estimates given here for the various age bands are somewhat low for the age group as a whole. Fortunately, high school dropout rates have continued to decline. US Census data indicate that dropouts comprised approximately 15% of the class/age cohort through much of the life of the study, until about 2002. Since then, there has been a gradual decline, dropping to about 6% in the most recent estimate through 2019.[10] The proportional effect of missing dropouts may be greatest for use of drugs such as heroin, crack, and methamphetamine, as well as cigarettes – the latter being highly correlated with educational aspirations and attainment. Nevertheless, even with some underreporting of usage rates, the year-to-year *trends* observed should be little affected by the limitations in sample coverage.

For purposes beyond this volume, we note that studies on substance use and related factors that follow young people through middle adulthood are rare. Monitoring the Future (MTF) provides for exceptionally useful analyses of adult substance use as well as many other behaviors and attitudes. These national data make possible: (1) analyses aimed at differentiating period-, age- and cohort-related change; (2) analyses demonstrating long-term connections between use of various substances at various stages in life and many important potential outcomes (including eventual substance use disorders, adverse health outcomes, and functioning in work and family roles); (3) tracking substance use involvement and how such involvement is affected by transitions into and out of social roles and social contexts across the life course; and (4) identifying the individual and contextual factors in adolescence and young adulthood that are predictive of later

[10] United States Census Bureau. CPS Historical Time Series Tables on School Enrollment. Published February 2, 2021. Accessed May 14, 2021

substance use and substance use disorders. These and other topics are or will be covered in other publications by MTF.

SURVEYS OF COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH

As defined here, the college student population comprises all full-time students enrolled in a two- or four-year college one to four years after high school in March during the year of the survey. More is said about this sample definition in Chapter 3 on study design. Results on the *prevalence* of drug use in 2020 among college students and also among same-aged noncollege youth are reported in Chapter 8, and results on *trends* in substance use among college students and noncollege youth are reported in Chapter 9, covering the 40-year interval since 1980.

The MTF follow-up samples have provided excellent coverage of the U.S. college student population for four decades (1980–2020). College students tend to be a difficult population to study at the national level for a variety of reasons. In the past, they were generally not well covered in household surveys, which tended to exclude dormitories, fraternities, and sororities. Further, institution-based samples of college students must be quite large in order to attain accurate national representation because of the great heterogeneity in universities, colleges, and community colleges, and in the types of student populations they serve. Obtaining good samples within many institutions also poses difficulties, because the cooperation of each institution is needed and then reasonable samples of the student body must be taken.

In contrast, MTF draws the college sample prospectively in the senior year of high school, so it has considerable advantages for generating a broadly representative sample of college students who emerge from each graduating high school cohort; moreover, it does so at very low cost. In addition, the "before, during, and after college" design permits examination of the many changes associated with the college experience. Finally, the MTF design also generates comparable panel data on high school graduates who are *not* attending college, an important segment of the young adult population not only in its own right, but also as a comparison group for college students. This is a particularly valuable and rare feature of this research design.

GENERAL PURPOSES OF THE RESEARCH

MTF's research purposes are extensive and are outlined here only briefly.[11] One major purpose is to serve an epidemiological social indicator function to accurately characterize the levels and trends in selected behaviors, attitudes, beliefs, and relevant social context conditions in the various populations covered. Social indicators can have important agenda-setting functions for society, drawing attention to new threats to public health and estimating the extent of those threats as well as determining where they are concentrated in the population. They are especially useful for gauging progress toward national goals and indicating the impacts of major historical events, including social trends and policy changes. Another purpose of the study is to develop knowledge that increases our understanding of how and why historical changes in these behaviors, attitudes,

[11] Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2016). *The objectives and theoretical foundation of the Monitoring the Future Study* (Monitoring the Future Occasional Paper No. 84). Ann Arbor, MI: Institute for Social Research, University of Michigan. See also Bachman, J. G., Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Miech, R. A. (2015). *The Monitoring the Future project after four decades: Design and procedures* (Monitoring the Future Occasional Paper No. 82). Ann Arbor, MI: Institute for Social Research, University of Michigan.

beliefs, and environmental conditions are taking place. Such work is usually considered to be social epidemiology. These two broad purposes are addressed in the current series of volumes.

Additional etiologic purposes of MTF include helping to discover risk and protective factors for, and consequences of, drug use; indicating what types of individuals are at greatest risk for developing various patterns of drug abuse; gaining a better understanding of the belief and attitude orientations associated with various patterns of drug use; and monitoring how all of these are shifting over historical time and across the life course. MTF data permit the investigation of the immediate and more general aspects of the social environment that are associated with drug use and misuse, and permit the assessment of how drug use is affected by major transitions into and out of social roles and contexts (such as military service, civilian employment, college, unemployment, marriage, pregnancy, parenthood, divorce, remarriage). MTF examines the life course of various drug-using behaviors during the transition to adulthood and through middle adulthood, including progression to substance use disorder. This knowledge allows MTF to distinguish such age effects from cohort and period effects that influence drug use and associated attitudes, to discover the effects of legislation and changing regulations on various types of substance use, and to understand consequences of the changing connotations of drug use and changing patterns of multiple drug use among youth.

We believe that differentiating among age, period, and cohort effects on use of various types of substances and associated attitudes and beliefs has been a particularly important contribution of the project. The MTF cohort-sequential research design is well suited to discern changes with age common to all cohorts (age effects), differences among cohorts that tend to persist across time (cohort effects), and changes common to most or all ages in a given historical period (period effects).

Knowing which type of change is occurring is important for at least three reasons. First, it can help to discover what types of causes account for the change. For example, age effects are often explained by maturation as well as by social role and context transitions associated with age, as this study has demonstrated through several books, articles, and book chapters (as listed on MTF website). Such age effects, as we have shown, can vary historically, indicating the historical embeddedness of developmental course.[12,13,14] Second, the type of change can indicate when in the life course the causes may have had their impact; in the case of cohort effects, it may well have been in an earlier point in the life course than the age at which the change is actually documented. For example, we know from historical context and MTF data on age of initiation that the decline in cigarette smoking observed among 12th graders in the late 1970s actually reflected a cohort effect that emerged when those teens were younger, in the early 1970s, which was shortly after cigarette advertising was removed from radio and television. So, although we documented a cohort effect at 12th grade, its origins were most likely due to earlier changes in social context. The third reason that knowing the type of change is important is that it can help in predicting future change more accurately. For example, the study has shown that perceived risk often is a leading indicator

[12] Jager, J., Schulenberg, J. E., O'Malley, P. M., & Bachman, J. G. (2013). Historical variation in drug use trajectories across the transition to adulthood: The trend toward lower intercepts and steeper, ascending slopes. *Development and Psychopathology, 25*(2), 527-543.
[13] Jager, J., Keyes, K. M., & Schulenberg, J. E. (2015). Historical variation in young adult binge drinking trajectories and its link to historical variation in social roles and minimum legal drinking age. *Developmental Psychology, 51*(7): 962-974.
[14] Patrick, M. E., Terry-McElrath, Y. M., Lanza, S. T., Jager, J., Schulenberg, J. E., & O'Malley, P. M. (2019). Shifting age of peak binge drinking prevalence: Historical changes in normative trajectories among young adults aged 18 to 30. *Alcoholism: Clinical and Experimental Research, 43*, 287-298.

of change and also that cohort effects help to predict forthcoming changes at later ages. Predicting change is extremely valuable to the policy, prevention, and treatment communities. This volume documents some well-established age effects, some important cohort differences that emerged at various points across the past four decades, and past and recent period effects.

Another important purpose of MTF, related to but distinct from the ones described so far, is to study risk and risk-reducing behaviors associated with HIV/AIDS. This purpose is addressed in the monograph HIV/AIDS: Risk & protective behaviors among adults ages 21 to 30 in the U.S., 2004-2020[15] Beginning in 2004, MTF panel surveys have included questions on the prevalence and interconnectedness of risk and risk-reduction behaviors related to the spread of the human immunodeficiency virus (HIV) which causes acquired immunodeficiency syndrome (AIDS). The questions include drug involvement in general, injection drug use, needle sharing, number of sexual partners, gender(s) of those partners, use of condoms, getting tested for HIV/AIDS, and obtaining the results of such HIV tests.

Readers interested in publications dealing with any of the topics mentioned above are invited to visit the MTF website at www.monitoringthefuture.org.

[15] Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., Patrick, M. E., & Miech, R. A. (2020). HIV/AIDS: Risk & protective behaviors among adults ages 21 to 30 in the U.S., 2004–2019. Ann Arbor, MI: Institute for Social Research, The University of Michigan.

Chapter 2

SUMMARY OF 2020 KEY FINDINGS

Monitoring the Future has become one of the nation's most relied-upon scientific sources of valid information on trends in use of licit and illicit psychoactive drugs by U.S. adolescents, college students, young adults, and adults up to age 60. For over four decades, the study has tracked and reported on the use of an ever-growing array of such substances among US national samples of adolescents and adults.

An essential feature of the MTF integrated study is the panel component of our cohort-sequential design. Beginning with the 12th grade class of 1976, the study has conducted follow-up surveys on representative subsamples of the respondents from each previously participating 12th grade class. These follow-up surveys now continue well into adulthood, currently up to age 60. Annual findings from these follow-up surveys are presented in this volume. Details regarding our survey procedures, including the transition from mail to web-based surveys, are provided in Chapter 3. We note here that another essential feature of the MTF integrated study is the consistency in procedures and measures (combined with deliberate changes when necessary) across historical and developmental time over the past four and a half decades, providing a strong foundation for detecting changes over time.

In this chapter, we provide an overview of some of the key findings from 2020, covering 2020 substance use prevalence (Chapter 4), recent trends in prevalence (Chapter 5), recent trends in attitudes and beliefs regarding substance use (Chapter 6), recent trends in the perceived social context of substance use (Chapter 7), substance use prevalence in 2020 among college and non-college youth aged 19-22 (Chapter 8), and recent trends in prevalence by college students and noncollege youth of the same age (Chapter 9).

As we note throughout this volume, data were collected from panel respondents between March 30, 2020, and November 30, 2020, covering the first eight months of the nationwide shutdown due to the pandemic. As summarized in Chapter 3, panel data collection was not affected much by the pandemic.

2020 PREVALENCE OF SUBSTANCE USE AMONG ADULTS: CHAPTER 4

Prevalence of annual and 30-day use of ***marijuana*** and of some illicit drugs (especially ***amphetamines***, ***cocaine***, ***hallucinogens***, and ***MDMA***) tended to be highest among those in their early to mid-20s. In particular, annual and 30-day ***marijuana*** use in 2020 was highest among 21-26 year olds (44-47% and 29%, respectively), with both declining mostly linearly with age to 16-18% and 10-11%, respectively, at ages 50-60. This age-curve held in 2020 for ***daily marijuana*** use (i.e., reported using on 20 or more occasions in the previous 30 days): prevalence peaked at 12% among 21-22 year olds, leveled at 10-11% among 23-28 year olds, and dropped to 3-4% among 45-60 year olds. Annual and 30-day prevalence of ***vaping marijuana*** also tended to be highest in 2020 among those in their early to mid-20s (annual use peaked at 24% for ages 19-22; 30-day use peaked at 13-14% among 19-22 year olds), and the same was true for ***vaping nicotine***

in 2020 (annual use peaked at 32% among 18-22 year olds; 30-day use peaked at 20-22% among 18-22 year olds).

Lifetime prevalence in some of the older age groups (particularly those aged 55 and 60), who passed through adolescence and early adulthood during the peak of the drug epidemic, showed remarkably high lifetime rates of illicit drug use—particularly when lifetime prevalence was corrected for the recanting (or forgetting) of previously reported use. This highlights the importance of cohort effects when considering age-related changes. However, past 30-day use of most illicit drugs was substantially lower among those over age 30 than among those in their late teens to early 20s, and this was true for ***binge drinking*** as well. For ***sedatives (barbiturates), tranquilizers,*** and ***narcotics other than heroin,*** as well as for ***alcohol*** and ***cigarettes***, the picture is different; there is less falloff in annual and 30-day use with age, and there are higher levels of daily alcohol use and regular cigarette smoking in the older ages.

Regarding gender differences in 2020 among 19-30 year olds, men had higher use prevalence than women for most substances. Men were significantly higher than women on most indices of ***marijuana*** use, including 30-day use, daily use, and annual and 30-day marijuana vaping; however, the two were not significantly different on annual use. Regarding use of ***any illicit drug other than marijuana*** in 2020, men were also significantly higher than women on *annual* prevalence and *30-day* prevalence. Men had significantly higher *annual* prevalence than women for many individual illicit drugs including ***hallucinogens***, ***LSD, hallucinogens other than LSD, amphetamines,*** and ***cocaine***; however, the two were similar regarding *annual* prevalence of ***narcotics other than heroin***, ***MDMA, sedatives (barbiturates),*** and ***tranquillizers.*** Men and women aged 19-30 were also similar in 2020 in *annual* prevalence of ***alcohol use*** and of ***getting drunk***, but men were higher on 30-day prevalence of both, as well as for ***daily alcohol*** use, ***binge drinking***, and ***high-intensity drinking***. Men had higher annual and 30-day prevalence of ***cigarette*** use than women, but they were similar on daily smoking. Men had higher annual and 30-day prevalence of ***vaping nicotine***.

Regarding regional differences in 2020 among 19-30 year olds, annual ***marijuana*** use tended to be higher in the West and Northeast than in the Midwest and South, and the same was true for annual ***vaping marijuana***. However, 30-day prevalence of both was highest in the West. Annual use of ***any illicit drug other than marijuana*** was highest in the West, and this was also true for annual prevalence of ***LSD***, ***hallucinogens other than LSD***, ***MDMA (ecstasy, Molly)***, and ***cocaine***; across other illicit drugs, regional differences were not substantial. Annual and 30-day ***alcohol*** use as well as 30-day ***drunkenness*** were somewhat higher in the Northeast and Midwest than the West and South; for indices of heavy alcohol use (e.g., ***binge drinking***), prevalence tended to be highest in the Midwest and varied among the other regions. ***Cigarette smoking*** tended to be slightly higher in the Midwest and South. ***Vaping nicotine*** was somewhat higher in the West and Midwest.

Regarding population density differences in 2020 among 19-30 year olds, prevalence tended to be positively correlated with population density (i.e., lowest in the farm/country stratum, and highest in very large cities) for many substances. This was true for annual prevalence of ***marijuana***, of ***vaping marijuana***, of ***any illicit drug other than marijuana***, and of many individual illicit drugs including ***cocaine***, ***MDMA (ecstasy***, ***Molly)***, ***amphetamines***, and ***hallucinogens*** (including ***LSD*** and ***other than LSD***); across other illicit drugs, population density differences were not substantial.

Alcohol use showed a positive correlation with population density, ***cigarette use*** showed a negative correlation with population density. ***Vaping nicotine***, in terms of both annual and 30-day prevalence, did not vary systematically by population density in 2020.

RECENT TRENDS IN SUBSTANCE USE AMONG YOUNG ADULTS: CHAPTER 5

The four main sets of findings in Chapter 5 regarding recent trends among young adults are the continued increases in marijuana use, the halt in the sharp increases of vaping, the continued increase in all forms of hallucinogen use, and the 2019-2020 decline in current and heavy alcohol use.

Marijuana use among young adults (ages 19-30) increased to all-time highs in 2020, which was true for annual use, 30-day use, and daily use; the five-year increases from 2015 to 2020 for all three levels of marijuana use were significant. As of 2020, over four-in-ten young adults (42%) used marijuana at least once in the past 12 months, over one-in-four (27%) used it at least once in the past 30 days, and nearly one-in-ten (9.8%) was a daily or near-daily marijuana user in the past 30 days.

Based on new vaping questions added to the young adult surveys beginning in 2017, annual and 30-day prevalence of ***vaping marijuana*** and of ***vaping nicotine*** increased significantly through 2019 for 19-30 year olds. In 2020, however, annual prevalence of vaping marijuana declined nonsignificantly to 20%, and 30-day prevalence declined significantly to 11%. Similarly, annual prevalence of vaping nicotine declined nonsignificantly in 2020 to 22%, and 30-day prevalence was level at 14% in 2020. Thus, it appears that the rapid increase in vaping marijuana and vaping nicotine came to a halt in 2020, at least for the time being.

Concerning the index of ***any illicit drugs other than marijuana***, annual use has been relatively steady the last few years, with the five-year trend (2015-2020) being nonsignificant (19% in 2020). This five-year leveling was due to a mix of changes among individual drugs that comprise this index. Specifically, there were significant five-year increases in annual prevalence of ***hallucinogens*** overall, of ***hallucinogens other than LSD***, and of ***LSD*** (to 7.6%, 5.2%, and 4.7% in 2020, respectively), as well as of ***cocaine*** (to 6.8% in 2020). There were significant five-year declines in nonmedical[1] annual prevalence of ***narcotics other than heroin*** (to 2.6% in 2020) and of ***tranquilizers*** (to 3.4% in 2020). And there were no significant 5-year changes in nonmedical annual prevalence of ***amphetamines*** (6.6% in 20) and of ***sedatives (barbiturates)*** (2.0% in 2020). In addition, annual prevalence of ***MDMA (ecstasy, Molly)*** was level over the past five years (4.5% in 2020).

Most indices of ***alcohol*** use among young adults have been level in recent years through 2019. However, between 2019 and 2020, there were significant declines in 30-day ***alcohol use*** and in having ***been drunk***, and in two-week ***binge drinking***, dropping by 3.5, 5.0, and 3.8 percentage points respectively to 65%, 31%, and 28%. The five-year declines were also significant, but most all of the five-year declines occurred between 2019 and 2020, suggesting a possible pandemic

[1] These questions are asked on the surveys with respect to use "not under a doctor's orders". Throughout this volume, we use the term "nonmedical use" to reflect use not under a doctor's orders. Unless otherwise indicated, our considerations of prescription drug use in this volume concern nonmedical use.

effect in terms of reduced social time (as indicated above, data were collected from March 30, 2020, just after the national shutdown, through November 30, 2020).

Cigarette use continued to decline to all-time lows among young adults in 2020. The five-year declines were significant for annual prevalence (to 21% in 2020), 30-day prevalence (to 9.5% in 2020), daily prevalence (to 5.3% in 2020), and half-pack a day prevalence (to 2.8% in 2020).

Tables, figures, and more detail about the short-term trends in substance use are provided in Chapter 5, along with consideration of longer-term trends for adults ages 19-60 (highlighting cohort effects behind the year-to-year age differences). In addition, Chapter 5 includes consideration of trends by gender, region, and population density (with accompanying figures published separately).[2] In Appendix A of this current volume, to provide an integrated view of trends across adolescence and young adulthood, we include tables and figures regarding prevalence across five groups: 8th graders, 10th graders, 12th graders, college students (ages 19-22), and young adults overall (19-30). Chapter 2 in previous editions of this volume[3] includes discussion of the trends across the five groups.

RECENT TRENDS IN ATTITUDES AND BELIEFS ABOUT SUBSTANCE USE AMONG YOUNG ADULTS: CHAPTER 6

Chapter 6 presents 2020 findings and trends regarding young adults' attitudes and beliefs about substance use, specifically perceived risk of harm (also known as perceived harmfulness) and personal disapproval of the use of various substances. Perceived risk, in particular, is an important leading indicator of changes in substance use; that is, changes in perceived risk typically correspond with and often predict future changes in substance use.

Perceived risk of ***marijuana*** use continued its decline in 2020, reaching all-time lows among young adults for experimental, occasional, and regular use of marijuana. In 2020, 5-8% of young adults (ages 19-30) perceived great risk of harm for experimental use of marijuana, and 19-22% perceived great risk of regular use. In 2020, we added new questions to the young adult surveys regarding perceived risk of ***vaping marijuana***: 14-20% perceived vaping marijuana occasionally as being of great risk of harm, and 24-31% perceived regular vaping marijuana as being of great risk of harm. Thus, young adults perceive vaping marijuana occasionally as being riskier (14-20% in 2020) than using marijuana occasionally in general (7-10% in 2020), and this was also true regarding regular marijuana vaping (24-31%) and regular marijuana use in general (19-22% in 2020).

Young adults viewed *experimental* use of any of the ***other illicit drugs*** as distinctly riskier than the experimental use of marijuana. In approximate rank ordering of various substances in 2020, about 28-39% of young adults thought experimental use of ***sedatives (barbiturates)*** involved great risk; the corresponding percentages were 28-36% for ***MDMA (ecstasy, Molly),*** 30-39% for

[2] Johnston, L.D., Schulenberg, J.E., O'Malley, P.M., Bachman, J.G., Miech, R. A., & Patrick, M.E. (2021). Demographic subgroup trends among young adults in the use of various licit and illicit drugs, 1988-2020 (Monitoring the Future Occasional Paper No. 96). Ann Arbor, MI.: Institute for Social Research, University of Michigan.

[3] Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2019). *Monitoring the Future national survey results on drug use, 1975-2018: Volume II, college students and adults ages 19-60.* Ann Arbor: Institute for Social Research, The University of Michigan.

amphetamines, 28-37% for ***LSD,*** 48-54% for ***cocaine***, 60-62% for ***narcotics other than heroin,*** and 71-79% for ***heroin.***

In the past five years (2015-2020), perceived risk of experimental use of ***LSD*** and ***MDMA (ecstasy, Molly)*** declined somewhat among young adults; perceived risk of experimental use of ***heroin*** and ***narcotics other than heroin, cocaine***, ***amphetamines***, and ***sedatives (barbiturates)*** was level or showed uneven change across young adult age groups.

Perceived risk of ***binge drinking*** once or twice on weekends was fairly level among young adults over the past five years (36-37% in 2020). Perceived risk of smoking one or more packs of ***cigarettes*** a day was also fairly level (80-87% in 2020).

Perceived risk of occasional ***nicotine vaping*** increased between 2019 and 2020 for young adults to 21-26% (with the increase being significant for 27-30 year olds); and for *regular* use, it increased significantly for all young adult age groups (to 49-52%). This was the second year we asked about perceived risk of vaping nicotine in this way. Between 2014 and 2018, we asked about perceived risk of using ***e-cigarettes*** regularly, and this increased through 2016 and was then level in 2017 and 2018 (25-33%).

Personal disapproval tends to be higher than perceived risk. As of 2020, the majority of young adults continue to disapprove of *regular* ***marijuana*** use, but such disapproval is declining: it was 51-56% in 2020, showing significant one-year declines for 19-26 year olds. Similarly, disapproval of *occasional* marijuana use continued to show some decline among young adults in 2020 (to 27-34% in 2020), as was true for *experimental* marijuana use (to 20-26% in 2020). Personal disapproval of experimental, occasional, and regular use of marijuana among young adults was at all-time lows in 2019 or 2020.

In 2020, we added new questions to the young adult surveys regarding disapproval of ***vaping marijuana***. For the three young adult age groups, 43-49% disapproved of vaping marijuana *occasionally* and 60-67% disapproved of vaping marijuana *regularly*. Thus, more young adults disapproved of vaping marijuana occasionally (43-49% in 2020) than disapproved of using marijuana occasionally in general (27-34% in 2020), and this was true regarding regular marijuana vaping (60-67%) and regular marijuana use in general (51-56% in 2020).

Disapproval levels of the various other illicit drugs tend to be quite high. The great majority of young adults disapproved of using, or even experimenting with, each of the ***illicit drugs other than marijuana.*** For example, 90% or more of young adults in 2020 disapproved of regular use of each of the following drugs: ***LSD, cocaine, heroin,*** and ***amphetamines.*** Fully 57% to 98% of young adults disapproved of even experimenting with each of these same drugs.

Between 2019 and 2020, disapproval of occasionally ***vaping nicotine*** increased to 72-76% among young adults (a significant increase for 27-30 year olds); for regular use, it increased somewhat to 84-85%.

Tables, figures, and more detail about the trends in perceived risk and personal disapproval are provided in Chapter 6, along with consideration of policy implications.

RECENT TRENDS IN THE PERCEIVED SOCIAL CONTEXT OF SUBSTANCE USE: CHAPTER 7

Chapter 7 presents 2020 findings and trends regarding the perceived social context of substance use, including perceived close friends' disapproval of substance use, perceived friends' use of substances, direct exposure to others using substances, and perceived availability of various substances. Peer norms and behaviors are important correlates and predictors of substance use.

In the past decade or so, there have been continuing declines in perceived close friends' disapproval of occasional and regular ***marijuana*** use among young adults (ages 19-30). In the last five years (2015-2020), perceived disapproval of occasional marijuana use declined considerably for young adults, by 13 to 18 percentage points, reaching 32-40% in 2020; disapproval of regular use dropped by 17 to 18 percentage points in the last five years, reaching 55-59% in 2020. Thus, 2020 levels of perceived close friends' disapproval of occasional and regular marijuana use are at or near historic lows since the early 1980s. Clearly, perceived peer norms indicate that young adults have become more accepting of marijuana use in recent years, corresponding to young adults' increased marijuana use.

In 2020, 50-55% of young adults reported that their close friends would disapprove of weekend ***binge drinking***, showing some uneven change in recent years. This perceived disapproval was at or near historic lows in 2019 and 2020 across the young adult age groups.

Regarding perceived friends' use, the percentage of adults who reported that *most or all* of their (unnamed) friends used ***marijuana*** increased for 19-22 year olds from 15% in 2010 to 29% in 2019 before dropping nonsignificantly to 24% in 2020, and increased dramatically for older adults: it nearly doubled or tripled for each age group among 23-50 year olds, increasing to 16-23% for 23-30 year olds, to 8-9% for 35 and 40 year olds, and to 2-3% for 45-60 year olds. Except for 19-22 year olds, these percentages for adults reached historic highs in 2019 or 2020.

Across the past decade (2010-2020), the proportion of respondents reporting having *any friends who use* ***any illicit drugs other than marijuana*** decreased somewhat for 19-26 year olds (to 49-51% in 2020), and increased for adults aged 27-50 (to 56% for 27-30 year olds and to 24-29% for 35-50 year olds). Among young adults, there have been recent increases in the proportion reporting *any* friends who use ***LSD***, ***hallucinogens other than LSD***, ***MDMA***, ***cocaine*** or ***amphetamines*** (except for 19-22 year olds), and decreases in proportion using any ***narcotics other than heroin*** or ***tranquilizers***.

Over the past decade (2010-2020), there have been mixed changes across the age groups in proportions reporting that *any* of their friends ***get drunk*** at least once a week. The proportion declined modestly for 19-26 year olds (to 70-75% in 2020), was level for 27-30 year olds (79% in 2020), and increased for 35-50 year olds (to 53-64% in 2020). Thus, in 2020, it remained the case that the majority of those aged 18 through 50 have *any* friends who get drunk at least once a week.

Findings regarding direct exposure to drug use and perceived availability are summarized in Chapter 7, along with descriptions of the longer-term trends in the perceived social context.

2020 PREVALENCE OF SUBSTANCE USE AMONG COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH: CHAPTER 8

In 2020, prevalence levels of many illicit substances tended to be higher among 19-22 year old noncollege youth than among full-time college students, with some substances showing similar prevalence levels between the two groups. As a reminder, data were collected from panel respondents between March 30, 2020, and November 30, 2020, covering the first eight months of the nationwide shutdown due to the pandemic.

In 2020, annual prevalence of ***any illicit drug*** was similar for college and noncollege respondents (46% and 45% respectively), but the annual prevalence of ***any illicit drug other than marijuana*** was somewhat higher for noncollege respondents (19%) than college students (16%). Noncollege youth had somewhat higher 30-day prevalence than college students of use of any illicit drug (30% and 25% respectively) and of any illicit drug other than marijuana (8.9% and 6.0%, respectively).

Annual prevalence of ***marijuana*** use was similar for college and noncollege respondents (44% and 43%, respectively) in 2020, but 30-day use was somewhat higher for noncollege respondents (29%) than for college students (25%). As has been true in recent years, noncollege youth had much higher prevalence of ***daily marijuana*** use than college students (13% vs. 7.9%, respectively). Regarding ***vaping marijuana***, annual and 30-day prevalence estimates in 2020 were similar for college and noncollege respondents.

Noncollege youth had higher annual prevalence compared to college students in 2020 for use of ***narcotics other than heroin*** (though annual prevalence was quite low) and of ***cocaine***; in addition, they had somewhat higher annual prevalence of ***hallucinogens***, including ***LSD*** and ***hallucinogens other than LSD***, and of ***MDMA*** (ecstasy, Molly). College students and noncollege respondents had similar annual prevalence in 2020 of ***amphetamines***, of ***sedatives (barbiturates)***, and of ***tranquilizers***.

As has been true for years, many measures of alcohol use showed higher prevalence among college students than noncollege youth in 2020; however, for ***binge drinking*** (5 or more drinks in a row at least once in the past two weeks) and ***high-intensity drinking*** (10 or more drinks in a row at least once in the past two weeks) prevalence was similar for college and noncollege youth in 2020.

As has been true all along, ***cigarette*** use is much more common among noncollege youth than college students. Finally, regarding ***vaping nicotine*** in 2020, *annual* prevalence was similar for college students and noncollege youth, but *30-day* prevalence was higher among the noncollege respondents.

Chapter 8 includes tables and figures, along with consideration of gender differences.

RECENT TRENDS IN SUBSTANCE USE AMONG COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH: CHAPTER 9

One main finding for recent trends among college students is the continued historic high levels in *annual* prevalence of ***marijuana*** use, which reached 44% in 2020, a historic high since the early 1980s; notably, the five-year trend from 2015 to 2020 showed a significant 6.0 percentage point

increase. Likewise, for noncollege youth, annual marijuana use remained at historic high levels in 2020, remaining at 43% (the same as 2018 and 2019), constituting the highest level since the early 1980s. ***Daily marijuana use*** increased a nonsignificant 2.0 percentage points for college students in 2020 to 7.9%, a new all-time high over the past four decades (the five-year increase of 3.3 percentage points was significant). For noncollege respondents, daily marijuana use declined nonsignificantly to 13% in 2020 (below the all-time high of 15% in 2019). Thus, as of 2020, almost one-in-seven noncollege respondents aged 19-22, and over one-in-twelve college students, use marijuana on a daily or near daily basis. Between 2017 and 2019, there were dramatic increases in ***vaping marijuana*** among 19-22-year-old college students and noncollege youth. Thirty-day prevalence more than doubled between 2017 and 2019 for both college students (from 5.2% to 14%) and noncollege respondents (7.8% to 17%). In 2020 however, it declined somewhat for both college students (to 12%) and noncollege respondents (to 14%).

The annual prevalence of using ***illicit drugs other than marijuana*** has shown uneven declines in recent years for college and noncollege respondents, with five-year trends being nonsignificant (annual prevalence was 16% and 19%, respectively, in 2020). However, one class of such drugs – ***hallucinogens*** – showed notable increases in 2020. Annual prevalence of use of any ***hallucinogens***, of ***LSD*** in particular, and of ***hallucinogens other than LSD*** showed significant one-year increases in 2020 for college students (to 8.6%, 5.8%, and 5.8%, respectively), and modest (nonsignificant) one-year increases in 2020 for noncollege respondents (to 9.8%, 7.3%, and 6.9%, respectively); the five-year (2015-2020) increases were significant for hallucinogens, LSD, and hallucinogens other than LSD (for both college and noncollege respondents).

The use of two illicit drugs in particular has continued to decline for college students and noncollege respondents. *Annual* prevalence of the nonmedical use of ***narcotic drugs other than heroin*** continued to decline for college students, with a significant five-year decline from 3.3% in 2015 to 1.3% in 2020; similarly, for noncollege respondents, there was a significant five-year decline from 5.9% in 2015 to 3.5% in 2020. The 2020 prevalence in both groups was at the lowest levels since the late 1990s. The annual non-medical use of ***amphetamines*** also continued to decline especially for college students, decreasing a significant 3.2 percentage points since 2015 to 6.5% in 2020 and reaching the lowest level in the past decade; among noncollege respondents, annual prevalence showed uneven change in the past five years to 6.3% in 2020. Thus, whereas college students have typically had higher annual nonmedical use of amphetamines than noncollege respondents in the past decade, the two were similar in 2020.

Several illicit drugs with relatively low prevalence have shown some leveling or uneven change in recent years among college students and noncollege respondents, including ***MDMA*** (***ecstasy***, ***Molly***) (annual prevalence of 3.7% and 5.5%, respectively in 2020) and nonmedical use of ***sedatives (barbiturates)*** (1.7% and 1.7%) and ***tranquilizers*** (2.6% and 3.5%). The annual prevalence of ***cocaine*** use showed uneven change among college students and noncollege respondents in recent years.

With respect to the pandemic, it is noteworthy that both ***30-day alcohol use*** and 30-day ***been drunk*** decreased significantly between 2019 and 2020 for college students, dropping 6.4 and 7.2 percentage points, respectively, to 56% and 28% in 2020. Importantly, for both of these measures, the trends between 2015 to 2019 were level, suggesting that the 2019 to 2020 drop reflects possible

pandemic effects in terms of reduced social time (as indicated above, data were collected from March 30, 2020, just after the national shutdown, through November 30, 2020). For noncollege youth, these two measures showed fairly level trends between 2015 and 2020 with no drop between 2019 and 2020 (they were 49% and 22%, respectively in 2020).

Binge drinking continued to decline among college students. In 2020, it decreased a significant 7.8 percentage points to 24%, a new historic low over the past four decades. It is possible that this significant decline between 2019 and 2020 was partly due to the pandemic in terms of reduced time with friends, with the pandemic serving to accelerate the decline that had already been occurring. Although binge drinking has also been declining for noncollege respondents in recent years, it appeared to increase nonsignificantly to 24% in 2020. Thus, whereas college students consistently have had higher prevalence of binge drinking than noncollege respondents over the years, the two groups were similar for the first time in 2020 (24%).

Cigarette use continues to decline, with 30-day smoking at a new all-time low of 4.1% in 2020 for college students, showing a significant 3.8 percentage point decline from 2019; it also reached a new all-time low in 2020 for noncollege respondents (13%) in 2020. Between 2017 and 2019, there were dramatic and significant increases in ***vaping nicotine*** among 19-22-year-old college students and noncollege youth. Thirty-day prevalence more than tripled between 2017 and 2019 for college students (from 6.1% to 22%) and more than doubled for noncollege respondents (7.9% to 18%). In 2020, however, it declined nonsignificantly for college students (to 19%) and increased nonsignificantly for noncollege respondents (to 24%).

Chapter 9 includes tables and figures of trends, along with additional detail about longer-term trends and gender differences.

OTHER MTF PUBLICATIONS AND INFORMATION ABOUT MTF DATA: CHAPTER 10

Finally, Chapter 10 provides a summary of recently published MTF peer-reviewed articles concerning the epidemiology and etiology of substance use across adolescence and adulthood, as well as other topics concerning methodology and risk and protective factors. This present volume is one in a series, and the other volumes are listed there. In addition, Chapter 10 provides information about access to de-identified public use MTF data, as well as to restricted MTF cross-sectional and panel data for qualified researchers.

Chapter 3

STUDY DESIGN AND PROCEDURES

Monitoring the Future (MTF) incorporates several survey designs into one study, yielding analytic power beyond the sum of those component parts. The components include cross-sectional studies, repeated cross-sectional studies, and panel studies of individual cohorts and sets of cohorts. The annual cross-sectional surveys provide point estimates of various behaviors and conditions in any given year for a number of subpopulations (e.g., 8th graders, 10th graders, 12th graders, college students, all young adult high school graduates ages 19–30, and at every 5-year interval 35-year-olds through 60-year-olds), as well as point estimates for various subgroups within these different subpopulations. Particularly important to this volume, repeating these annual cross-sectional surveys over time allows an assessment of change across history in consistent age segments of the adult population, as well as among subgroups.

The panel study feature also permits the examination of developmental change in the same individuals as they assume adult responsibilities, enter and leave various adult roles and environments, and continue further into adulthood. It also permits an assessment of a number of outcomes later in life that MTF has shown to be linked to substance use in adolescence and beyond.[1] Finally, with a series of panel studies of sequential graduating class cohorts we are able to offer distinctions among, and explanations for, three fundamentally different types of change: age, period, and cohort. It is this feature that creates a synergistic effect in terms of analytic and explanatory power.[2,3]

RESEARCH DESIGN AND PROCEDURES FOR THE 12th GRADE SURVEYS

Twelfth graders have been surveyed in the spring of each year since 1975. Each year's data collection has taken place in 120-140 public and private high schools selected to provide an accurate representative cross-section of 12th graders throughout the coterminous United States (see Figure 3-1); however, in 2020, due to the shut-down that came with the COVID-19 pandemic in March 2020, only 36 schools participated in data collections of 12th graders. As described in

[1] Terry-McElrath, Y.M., O'Malley, P.M., Johnston, L.D., Bray, B.C., Patrick, M.E., & Schulenberg, J.E. (2017). Longitudinal patterns of marijuana use across ages 18-50 in a U.S. national sample: A descriptive examination of predictors and health correlates of repeated measures latent class membership. Drug and Alcohol Dependence, 171, 70-83. McCabe, S. E., Veliz, P. T., Boyd, C. J., Schepis, T. S., McCabe, V. V., & Schulenberg, J. E. (2019). A prospective study of nonmedical use of prescription opioids during adolescence and subsequent substance use disorder symptoms in early midlife. Drug and Alcohol Dependence, 194, 377-385. Patrick, M. E., Berglund, P. A., Joshi, S., & Bray, B. C. (2020). A latent class analysis of heavy substance use in young adulthood and impacts on physical, cognitive, and mental health outcomes in middle age. Drug and Alcohol Dependence, 212. Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008) The Education–Drug Use Connection: How Successes and Failures in School Relate to Adolescent Smoking, Drinking, Drug Use, and Delinquency. New York: Lawrence Erlbaum Associates/Taylor & Francis; Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002) The Decline of Substance Use in Young Adulthood: Changes in Social Activities, Roles, and Beliefs. Mahwah, New Jersey: Lawrence Erlbaum; Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). Smoking, Drinking, and Drug Use in Young Adulthood: The Impacts of New Freedoms and New Responsibilities. Mahwah, NJ: Lawrence Erlbaum Associates.

[2] Bachman, J. G., Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Miech, R. A. (2015). The Monitoring the Future project after four decades: Design and procedures (Monitoring the Future Occasional Paper No. 82). Ann Arbor, MI: Institute for Social Research, University of Michigan.

[3] For a more detailed description of the full range of research objectives of Monitoring the Future, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2016). The objectives and theoretical foundation of the Monitoring the Future study (Monitoring the Future Occasional Paper No. 84). Ann Arbor, MI: Institute for Social Research.

Volume 1,[4] the 36 12th grade schools of 2020 were well distributed throughout the contiguous U.S., and analyses of the 2020 12th grade results indicate that the curtailed sample did not differ from the nationally representative results from previous years in terms of sociodemographic characteristics and prevalence of substances that have had stable prevalence in recent years. The participating 12th graders serve as the sampling frame for the MTF panels. In addition, 12th grade prevalence and trends are included as a comparison to the older age groups throughout this volume.

The Population under Study

Senior year of high school is a strategic starting point at which to begin panels to monitor drug use and related attitudes of youth through adulthood. First, completion of high school represents the end of an important developmental period in this society, demarcating both the end of universal education and, for many, the end of living full-time in the parental home. Therefore, it is a logical point at which to take stock of cumulated influences. Further, completion of high school represents a jumping-off point, a point from which young people diverge into widely differing social environments and experiences. Thus, senior year is a good time to take a "before" measure, allowing for the subsequent calculation of changes that may be attributable to the environmental transitions occurring in young adulthood, including college attendance, civilian employment, military service, and role transitions such as marriage, parenthood, and divorce. Finally, there are some important practical advantages built into the original system of data collections with samples of 12th graders. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable emphasis be put on cost efficiency as well as feasibility. The last year of high school constitutes the final point at which a reasonably good national sample of an age-specific cohort can be drawn from schools and studied economically.

The Omission of Dropouts

One limitation in the MTF study design is the exclusion of individuals who drop out of high school before graduation – approximately 6–15% of each age cohort nationally, according to U.S. Census statistics. The dropout rate has been declining in recent years; 6% is the most recent estimate through 2019.[5] Clearly, the omission of high school dropouts introduces biases in the estimation of certain characteristics of the entire age group; however, for most purposes, the small proportion of students who drop out sets outer limits on the bias. Further, since the bias from missing dropouts should remain relatively constant from year to year, their omission should introduce little or no bias in year-to-year change estimates. Indeed, we believe the changes observed over time for those who are surveyed in the 12th grade are likely to parallel the changes for dropouts in most instances. Appendix A in *Volume I*[6] addresses in detail the likely effects of the exclusion of dropouts (as well as absentees from school on the day of the survey administration) on estimates of drug use prevalence and trends for the entire age cohort.

[4] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, The University of Michigan.

[5] United States Census Bureau. CPS Historical Time Series Tables on School Enrollment. Published February 2, 2021. Accessed May 14, 2021

[6] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

Sampling Procedures and Sample Weights

A multistage random sampling procedure is used to secure the nationwide sample of 12th graders each year. Stage 1 is the selection of particular geographic areas, Stage 2 is the selection of one or more high schools in each area (with probability proportionate to the student enrollment size for the grade in question), and Stage 3 is the selection of 12th graders within each high school. Up to 350 12th graders in each school may be included. In schools with more than 350 12th graders classrooms are typically randomly sampled. In schools with fewer 12th graders, the usual procedure is to include all of them in the data collection, though a smaller sample is sometimes taken to accommodate the needs of the school (either by randomly sampling entire classrooms or by some other unbiased, random method). Weights are assigned to compensate for differential probabilities of selection at each stage of sampling. Final weights are normalized to average 1.0, so that the weighted number of cases equals the unweighted number of cases overall. In order for us to be able to check observed trends in any given one-year interval, schools are asked to participate in the study for two consecutive years on a staggered schedule, with one half being replaced with a new random half- sample of schools each year. Therefore, in any given year about half of the schools in the sample are participating for the first time and the other half are participating for their second and final year. This three-stage sampling procedure, with annual replacement of half of the sample of schools each year, has yielded the numbers of participating schools and students shown in Table 3-1. (As described in Volume 1, the sampling and data collection procedures are the similar for 8th and 10th graders.)

Questionnaire Administration

About two weeks prior to the 12th grade questionnaire administration date, parents of the target respondents are sent a letter by first-class mail, usually from the principal, announcing and describing the MTF study and providing parents with an opportunity to decline participation by their student if they wish. A flyer outlining the study in more detail is enclosed with the letter. Copies of the flyers are also given to the students by teachers in the target classrooms in advance of the date of administration. The flyers make clear that participation is entirely voluntary. Local Institute for Social Research representatives and their assistants conduct the actual questionnaire administrations following standardized procedures detailed in an instruction manual. The questionnaires are administered in classrooms during a normal class period whenever possible; however, circumstances in some schools require the use of larger group administrations. Teachers are asked to remain present in the classroom to help maintain order, but to remain at their desks so that they cannot see students' answers. In 2020, as discussed in Volume 1,[7] the in-school data collection was the first year all students recorded their answers on electronic tablets, which MTF brought to the schools. This transition to electronic data collection was part of a plan that included a 2019 MTF administration in which a randomly selected half of schools used traditional paper-and-pencil questionnaires and the other half used electronic tablets. This allowed assessment of potential survey mode effects, and in 2020 and all future years the project will no longer use paper-and-pencil questionnaires.

[7] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students.* Ann Arbor: Institute for Social Research, The University of Michigan.

Questionnaire Format

Because many questions are needed to cover all of the many topic areas in the MTF study, much of the questionnaire content for 12th graders is divided into six different questionnaire forms distributed to participants in an ordered sequence that ensures six virtually identical random subsamples. (Five questionnaire forms were used between 1975 and 1988.) About one third of each form consists of key, or "core," variables common to all forms. All demographic and key drug variables are contained in this core set of measures. Many of the specific drugs that have been added over time are in one or more forms but not in the core set. Many questions on attitudes, beliefs, and perceptions of relevant features of the social environment are in fewer than six forms, and data are thus based on fewer cases – a single form would have one fifth of the total number of cases in 1975–1988 (approximately 3,300 per year) and one sixth of the total beginning in 1989 (approximately 2,500 per year, with the exception of 2020 due to the curtailed 12th grade data collection during the pandemic). All tables in this report list the sample sizes upon which the statistics are based, stated in terms of the weighted number of cases which, as explained above, is roughly equivalent to the actual number of cases.

RESEARCH DESIGN AND PROCEDURES FOR THE FOLLOW-UP SURVEYS

Beginning with the graduating class of 1976, a subset of each 12th grade class has been selected to be surveyed after high school. From the 12,000–19,000 12th graders originally surveyed in a given senior class, a representative sample of 2,450 is randomly chosen for follow-up. Typically, follow-up data are collected in April through September; however, in 2020, due to concerns regarding the delays and inconsistencies in mail delivery during the pandemic, as well as other pandemic-related shut-downs/slow-downs, we started the data collections on March 30th, 2020 and extended data collection through November 30th. Thus the 2020 data collections form the MTF panels began just as the pandemic started to shut down the country and extended well into the pandemic.

Survey mode. Up through 2017, all follow-up surveys were conducted by mail. As described in detail below, in 2018 and in 2019 one random half of the 19-30 year old respondents received the typical MTF follow-up procedures and completed mail paper surveys; the other random half received the new web-push procedures and were encouraged to complete web-based surveys. In 2020, the web-push condition was the standard for all 19-30 year olds. In addition, in 2020, we began the transition to web-push survey administration for 35-60 year olds, with one random half receiving the typical MTF follow-up procedures with mail surveys, and the other half receiving the web-push procedures. Content is the same across the two modes. The two survey modes are discussed in detail below.

Oversampling of substance users. In order to ensure that drug-using populations are adequately represented in the follow-up surveys, 12th graders reporting 20 or more occasions of marijuana use in the previous 30 days (i.e., daily or near daily users), or any use of the other illicit drugs in the previous 30 days are selected with higher probability (by a factor of 3.0) than the remaining 12th graders. Differential weighting is then used in all follow-up analyses to compensate for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of only 0.33 in the calculation of all statistics to correct for their overrepresentation at the selection stage, there are actually more follow-up respondents than are reported in the weighted numbers

given in the tables; in recent years actual numbers average about 20% higher than the weighted numbers.

Follow-up through young, middle, and older adulthood. The 2,450 participants selected from each 12th grade class are randomly split into two groups of 1,225 each – one group to be surveyed on even-numbered calendar years in a series of biannual follow-up surveys, and the other group to be surveyed on odd-numbered years also in a series of biannual follow-up surveys.[8] By alternating the two half-samples through young adulthood, MTF collects data from every graduating class each year (through age 30), even though any given respondent participates only every other year.

Until 2002, each respondent was surveyed biennially up to seven times; at the seventh follow-up, which would occur either 13 or 14 years after graduation, the respondents had reached modal age 31 or 32. In 2002, as a cost-saving measure, the seventh biennial follow-up was discontinued, and since then each respondent is surveyed every other year until modal age 29 or 30. Additional middle- and older-adult follow-ups then occur at modal ages 35, 40, 45, 50, 55, and beginning in 2018, age 60. Starting at age 35, both of the half-samples from each graduating high school class are surveyed simultaneously. These data, gathered on national samples over such a large portion the life span, are extremely rare and can provide needed insight into the etiology and life-course history of substance use and relevant behaviors, attitudes, and other factors.

Mail Follow-Up Procedures

Using information provided by 12th grade respondents on a confidential tear-off card (requesting the respondent's name, address, phone numbers, and more recently, email address and cell phone numbers with consent to use text messaging), contact is maintained with the subset of people selected for inclusion in the follow up panels. Newsletters are sent to them each year, providing a short summary of results on a variety of survey topics. Name and address corrections are requested from both the U.S. Postal Service and the individual. Questionnaires are sent in the spring to each individual biennially through age 30, then at 5-year intervals. A check (for $25 in recent years[9]), made payable to the respondent, is attached to the front of each questionnaire. Reminder letters and postcards are sent at fixed intervals thereafter; telephone callers attempt to gather up-to-date location information for those respondents with whom we are trying to make contact; and, finally, those whom we can contact but who have not responded receive a prompting phone call from the Survey Research Center's phone interviewing facility in Ann Arbor, Michigan. If requested by the respondent, a second copy of the questionnaire is sent. No questionnaire content is administered by phone. If a respondent asks not to be contacted further, that request is honored.

Web-Based Follow-Up Procedures

The 2018 data collections among young adults (19-30) marked the first use of *web-based* surveys with our panel participants, and 2019 was the second year. In both 2018 and 2019, one random half of the sample received our typical mail surveys and the other half received the "web-push" condition (i.e., first pushed toward web-based surveys and then given the opportunity to complete

[8] In 2020, we collected data from both halves at age 19 for both methodological and substantive reasons; however, in this volume, we continue to use half of the 2020 19 year olds for reporting purposes.
[9] Until 1991, the follow-up checks were for $5. After an experiment indicated that an increase was warranted, the check amount was raised to $10 beginning with the class of 1992. The check amount was raised to $20 in 2006, and to $25 in 2008.

paper surveys). This splitting of the sample allows us to calibrate our historical and developmental trends. For 2020 data collections, we began using web-push data collection with *all* young adults, and provide paper surveys only on request and to non-respondents; in addition, for 2020 data collections, respondents aged 35 to 60 received the same random-half split of survey mode. Because it is possible that the data collection procedures can affect responses, we have been deliberate in this process of moving to web-based data collections. For the past several years, we have been conducting experiments with extra panel samples of young adults, examining feasibility and comparing our typical mail-only surveys to other designs pushing web-based surveys. Findings suggest that there are some condition and mode differences in responses, as detailed in our recent publications[10]; the paper published in 2020 assesses the survey mode effect based on 2018 MTF young adults, showing that once sociodemographic characteristics are controlled, there are very few differences in prevalence estimates of substance use by survey mode. In the 2018 and 2019 data presented in this volume, there are only a few significant differences between those randomly assigned to mail-only and web-push conditions in the prevalence estimates of the many substances we cover. In 2020 for the age 35-60 respondents, one random half received our typical mail surveys and the other half received the web-push condition. As was true for 19-30 year olds in 2018 and 2019, there were few significant differences between the two random halves in terms of drug prevalence estimates provided in this volume (about 4% of the comparisons were significantly different as summarized in Chapters 4 and 5); we thus combined the responses from the two conditions for 35-60 year olds and note when differences between the two are significant.

With the web-push condition, we have kept the procedures as similar as possible to our typical mail-based procedures, following many of the same steps summarized above for the mail-based procedures, including initial contact, incentives, mailing of newsletters, and follow-up contact with non-respondents. There are important differences to note. In the web-push procedures, respondents were provided information to respond online (i.e., they were each given a link and PIN to access their survey) and then they were later offered a paper survey if they did not respond to the web survey. In addition to initial mail contact, respondents were also contacted by email and text message (for those who provided email and cellphone contact information in the 12th grade surveys, along with their permission to contact them by text). We ensure confidentiality of web-based responses with data being immediately encrypted. By design, respondents can pause their web surveys and then easily get back into them; we send email reminders to non-respondents and respondents who have only partially completed the survey. The web-based surveys are optimized for a variety of operating systems and devices, including computers, tablets, and smart phones.

As is typical in web-push procedures, respondents randomly assigned to this condition were also provided access to paper surveys; those who did not respond within a month of initial contact were automatically sent paper surveys. In the process of telephoning non-respondents, paper surveys were offered in addition to the survey login information. We found that 13% of respondents in the web-push condition in 2019 completed paper surveys instead of web-based surveys (20% in 2018); these respondents were included in the web-push condition in our tests for differences by assigned

[10] Patrick, M. E., Couper, M. P., Jang, B. J., Laetz, V., Schulenberg, J. E., O'Malley, P. M., Bachman, J., & Johnston, L. D. (conditionally accepted). Building on a sequential mixed-mode research design in the Monitoring the Future Study. Patrick, M. E., Couper, M. P., Parks, M. J., Laetz, V., & Schulenberg, J. E. (2020). Comparison of a web-push survey research protocol with a mailed paper and pencil protocol in the Monitoring the Future panel survey. *Addiction.*Patrick, M. E., Couper, M. P., Laetz, V. B., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Miech, R. A. (2018). A sequential mixed mode experiment in the U.S. National Monitoring the Future study. *Journal of Survey Statistics and Methodology, 6*(1), 72-97. Patrick, M. E., Couper, M. P., Jang, B., Laetz, V. B., Schulenberg, J., Johnston, L. D., Bachman, J., O'Malley, P. M. (2019). Two-year follow-up of the sequential mixed-mode experiment in the U.S. National monitoring the future study. *Survey Practice, 12*(1).

survey condition reported in this Volume, as appropriate given the definition of web-push procedures as well as differences in respondent contact between the two conditions. In supplemental analyses not shown in this Volume, we also tested for differences by response mode (rather than assigned condition). Findings were similar to what we report in this Volume; in general, there are very few significant differences in prevalence estimates based on survey procedures.

Follow-Up Questionnaire Format

The questionnaires used in the follow-up surveys of 19- to 30-year-olds parallel those used in 12th grade. Many of the questions are the same, including the core section dealing with drug use. Respondents are consistently sent the same form of the questionnaire that they first received in 12th grade so that *changes* over time in their form-specific behaviors, attitudes, experiences, and so forth can be measured directly. Questions specific to high school status and experiences are dropped in the follow-ups, and questions relevant to post–high school status and experiences are added (mostly in the core section). The post-high school questions deal with issues such as college attendance, military service, civilian employment, marriage, and parenthood. In the study's early follow-ups (through 1988), the sample size for a question appearing on a single form was one fifth of the total sample. A sixth form was introduced in 12th grade beginning with the class of 1989 and extended a year later beginning with the follow-up surveys of that same class. Therefore, since 1990, a question appearing on a single form has been administered to one sixth of the total sample in the 19-30 young adult age band. Single-form data from a single cohort are typically too small to make reliable estimates; therefore, in most cases where they are reported, single-form data from several adjacent cohorts are combined. The content and ordering of items are identical between the typical mail surveys and the new web-based surveys for the 19-30 year olds, although the web-based surveys have more efficient skip patterns. As indicated above, the web-surveys have been optimized for use on multiple platforms, including smart phones and other devices. For the five-year interval surveys beginning at age 35, both half-samples from a class cohort are surveyed *simultaneously* and only one questionnaire form is used (on paper only through 2019 and with both paper and web-based in 2020). Much of the questionnaire content is maintained but streamlined with a focus on the major family and work issues relevant to respondents ages 35, 40, 45, ,50, 55, and 60; we have also added measures of substance use disorders and a number of health outcomes.

Regarding the assessment of marijuana, it is important to recognize the changing legal status of marijuana as well as how it is talked about in the literature and society at large. In particular, the term "marijuana" is increasingly being replaced with the term "cannabis"; however, in our surveys, we continue to use the term marijuana (and NIDA continues to use this term in its various online reports – e.g., https://www.drugabuse.gov/drug-topics/marijuana), and thus we use this term throughout this volume. As of this writing, 36 states have legalized medical marijuana and, among them, 18 have also legalized recreational use, leaving 14 states that have not legalized medical and/or recreational use. It remains illegal at the federal level. In this volume, we sometimes group marijuana use with illicit drug use, although in our surveys we do not call marijuana an illicit substance. Finally, we continue to update our surveys to capture the various modes of marijuana use, and no longer ask only about smoking marijuana.

REPRESENTATIVENESS AND SAMPLE ACCURACY OF INITIAL SCHOOL-BASED DATA

School Participation

In this section, we consider the representativeness and sample accuracy of data collected among 8th, 10th, and 12th graders. Our focus in the current volume is on 12th graders (because they are the source of the panels); however, covered material also includes 8th and 10th graders given the interconnections of procedures. Schools are invited to participate in the MTF study for a two-year period. For each school that declines to participate, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement. In 2019, either an original school or a replacement school was obtained in 90% of the sample units (in 2020, due to the abbreviated data collection, it was 26%). With very few exceptions, each school participating in the first year has agreed to participate in the second year as well. Figure 3-2 provides the year-specific school participation rates and the percentage of sampling units filled since 1977. As shown in the figure, replacements for schools that decline participation are obtained in the vast majority of cases.

Two questions are sometimes raised with respect to school participation rates: (a) Are participation rates sufficient to ensure the representativeness of the sample? (b) Does variation in participation rates over time contribute to changes in estimates of drug use?

With respect to participation rates ensuring that the sample is representative, the selection of a comparable replacement school that is demographically close to the original school occurs in practically all instances in which an original school does not participate. This should almost entirely remove problems of bias in region, urbanicity, and the like that might result from certain schools declining to participate.

Among participating schools, there is very little difference in substance use levels between the sample of participating schools that were original selections, taken as a set, and the schools that were replacements. Averaged over the years 2003 through 2015 for grades 8, 10, and 12 combined, the difference between original schools and replacement schools averaged 0.26 percentage points in the observed prevalence averaged across the following drug use measures: two indices of annual illicit drug use, the annual prevalence of each of the major illicit drug classes, and several measures of alcohol and cigarette use. For half of the measures, prevalence was higher in the replacement selections and in the remaining half it was higher in the original selections; specifically, out of 39 comparisons (13 drugs and drug indexes for each grade), prevalence was higher in 20 of the original selections and in 19 of the replacement selections.

Potential biases could be subtle, however. If, for example, it turned out that most schools with "drug problems" refused to participate, the sample would be seriously biased. And if any other single factor were dominant in most refusals, that reason for refusal might also suggest a source of serious bias. However, the reasons schools fail to participate tend to be varied and are often a function of happenstance events specific to that particular year, such as a weather-related event that reduced the number of school days or the fact that the school already committed to participate in a number of other surveys that year; only very few schools object specifically to the drug-related survey content.

If it were the case that schools differed substantially in drug use, then which particular schools participated could have a greater effect on estimates of drug use. However, the great majority of variance in drug use lies within schools, not between schools.[11] For example, from 2003 to 2015 for schools with 8th, 10th, or 12th grade students, about 2% to 8% of the variance in smoking cigarettes or drinking alcohol in the past 30 days was between schools. Among the illicit drugs, marijuana showed the largest amount of between-school variation, averaging between slightly less than 4% up to 5% for annual use, and 3% to 4% for 30-day use. Annual prevalence of cocaine use averaged between less than 1% and 1.5%, while prevalence of annual heroin use averaged less than 0.5%. Further, some, if not most, of the between-schools variance is due to differences related to factors such as region and urbanicity, which remain well controlled in the present sampling design.

With respect to participation rates and changes in estimates of drug use, it is extremely unlikely that results have been significantly affected by changes in school participation rates. If changes in participation rates seriously affected prevalence estimates, there would be noticeable bumps up or down in concert with the changing rates. But this series of surveys produces results that are very smooth and generally change in an orderly fashion from one year to the next. Moreover, different substances trend in distinctly different ways. We have observed, for example, marijuana use decreasing while cocaine use was stable (in the early 1980s), alcohol use declining while cigarette use held steady (in the mid- to late 1980s), ecstasy use rising sharply while cocaine use showed some decline (late 1990s, early 2000s); and marijuana use continuing to rise while alcohol use hit historic lows (since 2011). Moreover, attitudes and perceptions about drugs have changed variously, but generally in ways quite consistent with the changes in actual use. All of these patterns are explainable in terms of psychological, social, and cultural factors; they cannot be explained by the common factor of changes in school participation rates.

Of course, there could be some sort of constant bias across the years, but even in the unlikely event that there is, it seems highly improbable that it would be of much consequence for policy purposes, given that it would not affect trends and likely would have a very modest effect on levels of prevalence. Thus, we have a high degree of confidence that school refusal rates have not seriously biased the survey results.

Nevertheless, securing the cooperation of schools has become increasingly difficult. This is a problem common to the field, not specific to MTF. Therefore, beginning with the 2003 survey, we have provided payment directly to schools as a means of increasing their incentive to participate. (By that time, several other ongoing school-based survey studies already were using payments to schools.)

At each grade level, half of each year's sample comprises schools that started their participation the previous year, and half comprises schools that began participating in the current year. (Both samples are national replicates, meaning that each is drawn to be nationally representative by itself.) This staggered half sample design is used to check on possible fluctuations in the year-to-year trend estimates due to school turnover. For example, separate sets of one-year trend estimates are computed based on students in the half-sample of schools that participated in both 2019 and

[11] O'Malley, P. M., Johnston, L. D., Bachman, J. G., Schulenberg, J. E., & Kumar, R. (2006). How substance use differs among American secondary schools. *Prevention Science, 7*, 409–420.

2020, then based on the students in the half-sample that participated in both 2018 and 2019, and so on. Thus, each one-year matched half-sample trend estimate derived in this way is based on a constant set of schools (about 65 in 12th grade, for example, over a given one-year interval). When the trend data derived from the matched half-sample (examined separately for each class of drugs) are compared with trends based on the total sample of schools surveyed each year, the results are usually highly similar, indicating that the trend estimates are affected little by school turnover or shifting participation rates. As would be expected, levels of absolute prevalence for a given year are not as precisely estimated using just the half sample because the sample size is only half as large.

Student Participation

In 2020, completed questionnaires were obtained from 88% of all sampled students in 8th grade, 89% in 10th grade, and 79% in 12th grade (see Table 3-1 for student response rates in all years). In the large majority of cases, students are missed due to absence from school and/or class at the time of data collection; for reasons of cost efficiency, we typically do not schedule special follow up data collections for absent students. Because students with fairly high rates of absenteeism also report above-average rates of drug use, some degree of bias is introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting based on the self-reported absentee rates of the students who did respond; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates was determined to be quite small *and* the necessary weighting procedures would have introduced greater sampling variance in the estimates. Appendix A in *Volume I* illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included. Of course, some students simply refuse, when asked, to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1.8% of the target sample for each grade.

Sampling Accuracy of the Estimates

Confidence intervals (95%) are provided in Tables 4-1a through 4-1d in *Volume I* for lifetime, annual, 30-day, and daily prevalence of use for 8th, 10th, and 12th grade students. Confidence intervals for lifetime prevalence for 12th graders average less than ±1.4% across a variety of drug classes (with confidence intervals being wider in 2020 due to the reduced sample size because of the pandemic). That is, if we took a large number of samples of this size from the universe of all schools containing 12th graders in the coterminous United States, 95 times out of 100 the sample would yield a result that would be less than 1.4 percentage points divergent from the result we would get from a comparable massive survey of all 12th graders in all schools. This is a high level of sampling accuracy, permitting detection of fairly small changes from one year to the next. Confidence intervals for the other prevalence periods (last 12 months, last 30 days, and current daily use) are generally smaller than those for lifetime use. In general, confidence intervals for 8th and 10th graders are very similar to those observed for 12th graders. Some drugs (smokeless tobacco, crack cocaine, PCP, and others, as indicated in the footnotes to the tables) are measured on only one or two questionnaire forms; these drugs will have somewhat larger confidence intervals because they are based on smaller sample sizes.

The Appendix C of *Volume I* published in years 2017 and earlier reported information on how to calculate confidence intervals for point estimates and how to calculate statistics that test the

significance of changes over time or of differences between subgroups. This appendix is no longer necessary with the opening of MTF's remote portal at the National Addiction and HIV Data Archive Program, which now allows researchers to compute such statistics directly using MTF weights and clustering variables. Interested readers may refer to Appendix C of earlier volumes for the information it provides about design effects and how their computational influence varies by substance.

PANEL ATTRITION AND RETENTION

We discuss here the nature of the panel attrition problem generally, the response rates for MTF panel surveys in recent years, and evidence relevant to assessing the impact of attrition on the study's research results.

The Problem of Panel Attrition

Virtually all longitudinal studies – including MTF – experience attrition, which is often differential with respect to health risks including substance use.[12] In addition, survey response rates in general have been declining in recent decades,[13] highlighting an important challenge in the conduct of all population-based research.

A vital feature of the MTF panel studies is the very low cost per respondent. There are many advantages to collecting panel data through low-cost surveys. Indeed, given the number of MTF follow-up questionnaires sent each year (roughly 19,000) across the U.S. and internationally, we have viewed low-cost mail and web surveys as our best cost-effective options. One disadvantage of data collection by surveys is that attrition rates tend to be higher than for data obtained with much more expensive methods, such as intensive personal tracking and face-to-face interviewing. There are a few large epidemiological/etiological surveys that have better retention rates, but their procedures are extremely expensive and not realistic for an ongoing large-scale effort like MTF. Our retention rates compare favorably with those of most longitudinal studies reported in the field, including interview studies. We are working to increase response rates (or at least stem the general response rate erosion mentioned above and below), and the results of our experiments with web-

[12] Booker, C.L., Harding, S., & Benzeval, M. (2011). A systematic review of the effect of retention methods in population-based cohort studies. *BMC Public Health, 11*, 249; Brook, J.S., Saar, N.S., Zhang, C., & Brook, D.W. (2009). Psychosocial antecedents and adverse health consequences related to substance use. *American Journal of Public Health, 99*(3), 563-568; Galea, S., & Tracy, M. (2007). Participation rates in epidemiologic studies. *Annals of Epidemiology, 17*(9), 643-653; McCabe, S.E., & West, B.T. (2016). Selective nonresponse bias in population-based survey estimates of drug use behaviors in the United States. *Social Psychiatry & Psychiatric Epidemiology, 51*(1), 141-153; McGuigan, K. A., Ellickson, P. L., Hays, R. D., & Bell, R. M. (1997). Adjusting for attrition in school-based samples: Bias, precision, and cost trade-off of three methods. *Evaluation Review, 21*, 554–567.

[13] Dillman, D.A., Smyth, J.D., & Christian, L.M. (2009). *Internet, mail, and mixed mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: John Wiley & Sons; Groves, R. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly, 70*, 646–75; Groves, R.M., Dillman, D.A., Eltinge, J.L., & Little, R.J.A. (Eds.) (2002). *Survey nonresponse.* New York: Wiley. Kim, J., Gershenson, C., Glaser, P., & Smith, T.W. (2011). The polls – trends: Trends in surveys on surveys. *Public Opinion Quarterly, 75*(1), 165-191; Groves, R.M. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly, 70(5),* 646-675; Massey, D.S., & Tourangeau, R. (2013). The nonresponse challenge to surveys and statistics. *Annals of the American Academy of Political and Social Science*, 645, 1-236; Pew Research Center. (2012). Assessing the representativeness of public opinion surveys; Wechsler, H., Lee, J.E., Kuo, M., Seibring, M., Nelson, T.F., & Lee, H. (2002). Trends in college binge drinking during a period of increased prevention efforts: Findings from 4 Harvard School of Public Health College Alcohol Study surveys: 1993–2001. *Journal of American College Health,* 50, 203–217; National Longitudinal Survey of Youth, 1979: Retention and Reasons for Non-Interview. (https://www.nlsinfo.org/content/cohorts/nlsy79/intro-to-the-sample/retention-reasons-noninterview). (Accessed August 28, 2019); Keyes, K.M., Jager, J., Platt, J., Rutherford, C., Patrick, M., Kloska, D.D., Schulenberg, J. (2020). When does attrition lead to bias? Bias analysis for loss to follow-up in 30 longitudinal cohorts. *International Journal of Methods in Psychiatric Research, 29*(4), Article e1842. https://doi.org/10.1002/mpr.1842

based data collections appear promising in terms of response rates and cost per respondent.[14] As mentioned above, in 2018 and 2019, we used web-push survey procedures with a random half of young adults aged 19-30 (with all moving to web-push conditions in 2020), and in 2020, we used web-push procedures for one random half of those ages 35-60.

Retention Rates

Retention rates in the biennial follow-ups *within each cohort* across modal ages 19–30 (corresponding to the first six follow-ups) decline with the length of the follow-up interval, of course. For the five surveys from 2016 to 2020, the response rate in the first follow-up (corresponding to one to two years past high school) averaged 35%; and for the second through sixth follow-ups (corresponding to 3-12 years past high school) response rates averaged 37% (our response rate is better for 3-12 years past high school than 1-2 years past high school in 2020 reflects that response rates typically decline with successive cohorts). We found a significant difference in response rates by survey condition combining across 19-30 year olds in 2019: The web-push response rate was 39.1% [95% confidence interval (CI) = 37.89, 40.26]; this was significantly higher than the standard MTF response rate of 35.1% (95% CI = 33.96, 36.29).[15] In 2020, when the web-push condition was the standard procedure among 19-30 year olds, the response rate was 41%.

Among long-term respondents – those 35, 40, 45, 50, 55, and 60 years old – the retention rates are quite good, apparently due to cohort differences in their propensity to respond. Among respondents surveyed from 2016-2020, the average response rates for those age 35 (17 years past high school), age 40 (22 years past high school), age 45 (27 years past high school), age 50 (32 years past high school), and age 55 (37 years past high school) were 37%, 38%, 38%, 42%, and 50%, respectively. And for 60-year-olds, an age group surveyed for the first time in 2018, the average response rate for 2018-2020 was 53%. In 2020, the response rate for 35-60 year olds ranged from 36% to 54% for the web-push condition, and 34% to 52% for the typical mail condition; overall, among 35-60 year olds in 2020, the response rate was 41.3% for the web-push condition and 39.3% for the typical mail condition (the difference was significant, $p<.05$). In sum, the response rates attained under the current design range from respectable to good, especially when the low-cost nature of the procedures, the very long time-intervals involved, and the substantial length of the questionnaires are taken into account. More importantly, the evidence concerning validity noted throughout this volume leaves us confident that the data resulting from these follow-up panels are reasonably accurate.

The Impact of Panel Attrition on Research Results

An important purpose of the MTF panel study is to allow estimation of drug prevalence levels among U.S. high school graduates at various ages. Thus, we have always been concerned about making the appropriate adjustments to account for panel attrition. In essence, our standard

[14] Patrick, M. E., Couper, M. P., Parks, M. J., Laetz, V., & Schulenberg, J. E. (2020). Comparison of a web-push survey research protocol with a mailed paper and pencil protocol in the Monitoring the Future panel survey. *Addiction.* Patrick, M. E., Couper, M. P., Laetz, V. B., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Miech, R. A. (2018). A sequential mixed mode experiment in the U.S. National Monitoring the Future study. *Journal of Survey Statistics and Methodology, 6*(1), 72-97. Patrick, M. E., Couper, M. P., Jang, B., Laetz, V. B., Schulenberg, J., Johnston, L. D., Bachman, J., O'Malley, P. M. (2019). Two-year follow-up of the sequential mixed-mode experiment in the U.S. National monitoring the future study. *Survey Practice, 12*(1).

[15] Patrick, M. E., Couper, M. P., Parks, M. J., Laetz, V., & Schulenberg, J. E. (2020). Comparison of a web-push survey research protocol with a mailed paper and pencil protocol in the Monitoring the Future panel survey. *Addiction*

adjustment process is a post-stratification procedure in which we reweight the data obtained from the follow-up samples in such a way that, once reweighted, the distribution of their *12th grade answers* on a given drug matches the original distribution of use observed for that drug based on all participating high school seniors in their graduating class. This procedure is carried out separately for cigarettes, alcohol, and marijuana, as well as other illicit drugs (combined). As expected, it produces prevalence estimates in the follow-up data that are somewhat higher than those uncorrected for attrition, indicating a positive association between drug use and panel attrition. However, the adjustments are relatively modest.

Attrition rates by levels of 12th grade substance use differ some, but less than one might expect. For example, based on analyses conducted some years ago for the classes of 1978–2008, among all respondents who had never used marijuana by 12th grade, an average of 74% participated in the first follow-up (as noted earlier, response rates in MTF and other studies have declined appreciably over time; thus the response rates based on the classes of 1978-2008 are substantially higher than the current rates). The proportion responding was somewhat lower among those who had used marijuana once or twice in the last 12 months (67%). This proportion decreased gradually with increasing levels of marijuana use in 12th grade; but even among those who used marijuana on 20 or more occasions in the last 30 days in 12th grade, 60% participated in the first follow-up. The corresponding participation rates for the same drug use strata at the fourth follow-up (i.e., at modal ages 25/26) were 64%, 57%, and 51%, respectively.

Thus, even among those who were active heavy users of marijuana in high school, response rates at the fourth follow-up were 13 percentage points lower than among those who had never used marijuana by 12th grade. That is not to say that we assume all types of drug users remain in the panels at comparably high rates. We believe that people who become dependent on or addicted to illicit drugs such as opioids, heroin, or cocaine are less likely to be retained in reasonable proportions. That is why we are careful not to quantify or characterize these special segments of the population; but we note that they constitute very low proportions of the adult population.

As a validation of our panel data on drug use several years ago, we compared MTF prevalence estimates with those from the National Survey on Drug Use and Health (NSDUH); this survey provides the best available comparison data because it is also based on national samples and uses cross-sectional surveys that do not have panel attrition. Using the NSDUH data from 2013 (Substance Abuse and Mental Health Administration, 2014[16]), we compared the prevalence rates on a set of drugs – cigarettes, alcohol, marijuana, and cocaine – for which there was reasonable similarity in question wording across the two studies. As shown in Table 3-2, these comparisons showed a high degree of comparability in the prevalence estimates of the two studies,[17] particularly with the post- stratification procedure applied to the MTF data, as presented in this volume.

In addition, attrition in the MTF panel is not necessarily as great a problem as nonresponse is in a cross-sectional study. In the MTF panel we know a great deal about each of the follow-up non-respondents, including their prior substance use, based on the detailed questionnaires administered

[16] Substance Abuse and Mental Health Administration. (2014). Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings and Detailed Tables.

[17] For more detail on these comparisons, see Chapter 3 in: Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Miech, R. A. (2015). *Monitoring the Future national survey results on drug use, 1975-2014: Volume II, college students and adults ages 19-55*. Ann Arbor: Institute for Social Research, The University of Michigan

in 12th grade (and, for many, in subsequent years as well). Thus, adjustments can be made utilizing data that are highly informative about the missing individuals.

Finally, as is evident in the prevalence estimates and trends presented in this volume, substantial proportions of drug users remain in the MTF panels. Nonetheless, as mentioned above, we are unlikely to maintain large numbers of heavy drug users in our panels, suggesting that our estimates are conservative with respect to the adult population of U.S. high school graduates, even with post-stratification weighting.

Effects on Relational Analyses

While differential attrition (uncorrected) may contribute to some bias in point estimates and other univariate statistics, a considerable amount of empirical research has shown that such attrition tends to have less influence on *associations* among variables.[18] With MTF samples, we have found that correlations among variables at base year are very similar across groups who remain in the longitudinal study and those who do not.[19] Thus, differential attrition may be of less concern in multivariable panel analyses focused on understanding the course, causes, and consequences of substance use. Still, as we summarized above, correcting for attrition can be important, and we continue to do so using these and other correction procedures (e.g., attrition weighting, data imputation, FIML) in our publications.

VALIDITY OF MEASURES OF SELF-REPORTED DRUG USE

Are sensitive behaviors such as drug use honestly reported? Like most studies dealing with sensitive behaviors, we have no direct, totally objective validation of the present measures; however, the considerable amount of existing inferential evidence strongly suggests that the MTF self-report questions produce largely valid data. Here we briefly summarize this evidence.[20]

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[18] Bachman, J. G., O'Malley, P. M., & Johnston, J. (1978). *Youth in Transition: Vol. 6. Adolescence to adulthood: A study of change and stability in the lives of young men.* Ann Arbor, MI: Institute for Social Research. Cordray, S., & Polk, K. (1983). The implications of respondent loss in panel studies of deviant behavior. *Journal of Research in Crime and Delinquency, 20*(2), 214–242. Galea, S., & Tracy, M. (2007). Participation rates in epidemiologic studies. *Annals of Epidemiology, 17*(9), 643-653. Goudy, W.J. (1976). Nonresponse effects on relationships between variables. *Public Opinion Quarterly, 40,* 360–369. Groves, R. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly, 70,* 646–75. Groves, R., & Peytcheva, E. (2008). The impact of nonresponse rates on nonresponse bias: A meta-analysis. *Public Opinion Quarterly, 72,* 167–89. Martikainen, P., Laaksonen, M., Piha, K., & Lallukka, T. (2007). Does survey non-response bias the association between occupational social class and health? *Scandinavian Journal of Public Health, 35*(2), 212–215. Nohr, E.A., & Olsen, J. (2013). Commentary: Epidemiologists have debated representativeness for more than 40 years — Has the time come to move on? *International Journal of Epidemiology, 42,* 1016–1017. Peytchev, A. (2013). Consequences of survey nonresponse. *Annals of the American Academy of Political and Social Science, 645*(1), 88–111. Van Loon, A.J.M., Tijhuis, M., Picavet, H.S.J., Surtees, P.G., & Ormel, J. (2003). Survey non-response in the Netherlands: Effects on prevalence estimates and associations. *Annals of Epidemiology, 13*(2), 105–110.

[19] Bryant, A. L., Schulenberg, J. E., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (2000). Understanding the links among school misbehavior, academic achievement, and cigarette use: A national panel study of adolescents. *Prevention Science, 1*(2), 71–87. Jager, J., Schulenberg, J.E., O'Malley, P.M., & Bachman, J.G. (2013). Historical variation in drug use trajectories across the transition to adulthood: The trend towards lower intercepts and steeper, ascending slopes. *Development and Psychopathology, 25*(2), 527–543. Merline, A.C., Jager, J., & Schulenberg, J.E. (2008). Adolescent risk factors for adult alcohol use and abuse: Stability and change of predictive value across early and middle adulthood. *Addiction, 103*(Suppl. 1), 84-99. Schulenberg, J. E., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1994). High school educational success and subsequent substance use: A panel analysis following adolescents into young adulthood. *Journal of Health and Social Behavior, 35,* 45–62. Schulenberg, J.E., Merline, A.C., Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Laetz, V.B. (2005). Trajectories of marijuana use during the transition to adulthood: The big picture based on national panel data. *Journal of Drug Issues, 35,* 255–279. Staff, J., Schulenberg, J.E., Maslowsky, J., Bachman, J.G., O'Malley, P.M., Maggs, J.L., & Johnston, L.D. (2010). Substance use changes and social role transitions: Proximal developmental effects on ongoing trajectories from late adolescence through early adulthood. *Development and Psychopathology, 22* (Special issue: Developmental Cascades: Part 2), 917-932.

[20] A more complete discussion may be found in: Johnston, L. D. & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Kozel, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85 1402). Washington, DC: U.S. Government Printing Office; Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975–1983* (DHHS (ADM) 85 1374). Washington, DC: U.S.

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability – a necessary condition for validity.[21] In essence, respondents were highly consistent in their self-reported behaviors over a three- to four-year time interval. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of 12th graders reporting some illicit drug use reached two thirds of all respondents in peak years and over 80% in some follow up years, constituting prima facie evidence that the degree of underreporting must be very limited. Fourth, 12th graders' reports of use by their unnamed friends – about whom they would presumably have considerably less reason to conceal information concerning use – have been highly consistent with self-reported use in the aggregate, both in terms of prevalence and trends in prevalence, as discussed in Chapter 7. Fifth, we have found self-reported drug use to relate in consistent and expected ways based on theory to a number of other attitudes, behaviors, beliefs, and social situations – strong evidence of "construct validity." Sixth, the missing data levels for the self-reported use questions are only very slightly higher than for the preceding non-sensitive questions, in spite of explicit instructions to respondents immediately preceding the drug section to leave blank those questions they feel they cannot answer honestly. Seventh, an examination of consistency in reporting of lifetime use conducted on the long-term panels of graduating seniors found quite low levels of recanting of earlier reported use of the illegal drugs.[22] There was a higher level of recanting for the psychotherapeutic drugs, suggesting that adolescents may actually overestimate their use of some drugs because of misinformation about definitions, and this knowledge improves as they get older. Finally, the great majority of respondents, when asked, say they would answer such questions honestly if they are or were users.[23]

As an additional step to assure the validity of the data, we check for logical inconsistencies in the answers to the triplet of questions about use of each drug (i.e., lifetime, annual, and 30-day use), and if a respondent exceeds a maximum number of inconsistencies across the set of drug use questions, his or her record is deleted from the data set. Similarly, we check for improbably high rates of use of multiple drugs and delete such cases, assuming that the respondents are not taking the task seriously. Fortunately, very few cases (<3%) have had to be eliminated for these reasons.

This is not to argue that self-reported measures of drug use are necessarily valid in all studies. In MTF we have gone to great lengths to create a situation and set of procedures in which respondents recognize that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. The evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as any remaining reporting bias exists, we believe it to be in the direction of underreporting. Thus, with the possible exception of the psychotherapeutic drugs, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

Government Printing Office; Wallace, J. M., Jr., & Bachman, J. G. (1993). Validity of self-reports in student-based studies on minority populations: Issues and concerns. In M. de LaRosa (Ed.), *Drug abuse among minority youth: Advances in research and methodology* (NIDA Research Monograph No. 130). Rockville, MD: National Institute on Drug Abuse.

[21] O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions, 18*, 805–824.

[22] Johnston, L. D. & O'Malley, P. M. (1997). The recanting of earlier reported drug use by young adults. In L. Harrison (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (NIDA Research Monograph No. 167, pp. 59–80). Rockville, MD: National Institute on Drug Abuse.

[23] For a discussion of reliability and validity of student self-report measures of drug use like those used in MTF across varied cultural settings, see Johnston, L. D., Driessen, F. M. H. M., & Kokkevi, A. (1994). Surveying student drug misuse: A six-country pilot study. Strasbourg, France: Council of Europe.

Consistency and Measurement of Trends

MTF is designed to be sensitive to changes from one time period to another. A great strength of this study is that the measures and procedures have been standardized and applied consistently across many years, allowing for a stronger foundation for assessing historical and developmental trends. To the extent that any biases remain because of limits in school participation and/or respondent retention, and to the extent that there are distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same proportions from one year to the next. In other words, biases in the survey estimates will tend to be consistent across years, meaning that they should have very little effect on our measurement of trends. Even if panel retention rates decline, our ability to adjust for differential attrition based on what we know about those lost to attrition allows us to maintain consistency in the panel samples over time. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

TABLE 3-1
Sample Sizes and Response Rates

	Number of Public Schools			Number of Private Schools			Total Number of Schools				Total Number of Students				*Student Response Rate (%)*		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	Total	8th	10th	12th	Total	*8th*	*10th*	*12th*
1975	—	—	111	—	—	14	—	—	125	—	—	—	15,791	—	—	—	*78*
1976	—	—	108	—	—	15	—	—	123	—	—	—	16,678	—	—	—	*77*
1977	—	—	108	—	—	16	—	—	124	—	—	—	18,436	—	—	—	*79*
1978	—	—	111	—	—	20	—	—	131	—	—	—	18,924	—	—	—	*83*
1979	—	—	111	—	—	20	—	—	131	—	—	—	16,662	—	—	—	*82*
1980	—	—	107	—	—	20	—	—	127	—	—	—	16,524	—	—	—	*82*
1981	—	—	109	—	—	19	—	—	128	—	—	—	18,267	—	—	—	*81*
1982	—	—	116	—	—	21	—	—	137	—	—	—	18,348	—	—	—	*83*
1983	—	—	112	—	—	22	—	—	134	—	—	—	16,947	—	—	—	*84*
1984	—	—	117	—	—	17	—	—	134	—	—	—	16,499	—	—	—	*83*
1985	—	—	115	—	—	17	—	—	132	—	—	—	16,502	—	—	—	*84*
1986	—	—	113	—	—	16	—	—	129	—	—	—	15,713	—	—	—	*83*
1987	—	—	117	—	—	18	—	—	135	—	—	—	16,843	—	—	—	*84*
1988	—	—	113	—	—	19	—	—	132	—	—	—	16,795	—	—	—	*83*
1989	—	—	111	—	—	22	—	—	133	—	—	—	17,142	—	—	—	*86*
1990	—	—	114	—	—	23	—	—	137	—	—	—	15,676	—	—	—	*86*
1991	131	107	117	31	14	19	162	121	136	419	17,844	14,996	15,483	48,323	*90*	*87*	*83*
1992	133	106	120	26	19	18	159	125	138	422	19,015	14,997	16,251	50,263	*90*	*88*	*84*
1993	126	111	121	30	17	18	156	128	139	423	18,820	15,516	16,763	51,099	*90*	*86*	*84*
1994	116	116	119	34	14	20	150	130	139	419	17,708	16,080	15,929	49,717	*89*	*88*	*84*
1995	118	117	120	34	22	24	152	139	144	435	17,929	17,285	15,876	51,090	*89*	*87*	*84*
1996	122	113	118	30	20	21	152	133	139	424	18,368	15,873	14,824	49,065	*91*	*87*	*83*
1997	125	113	125	27	18	21	152	131	146	429	19,066	15,778	15,963	50,807	*89*	*86*	*83*
1998	122	110	124	27	19	20	149	129	144	422	18,667	15,419	15,780	49,866	*88*	*87*	*82*
1999	120	117	124	30	23	19	150	140	143	433	17,287	13,885	14,056	45,228	*87*	*85*	*83*
2000	125	121	116	31	24	18	156	145	134	435	17,311	14,576	13,286	45,173	*89*	*86*	*83*
2001	125	117	117	28	20	17	153	137	134	424	16,756	14,286	13,304	44,346	*90*	*88*	*82*
2002	115	113	102	26	20	18	141	133	120	394	15,489	14,683	13,544	43,716	*91*	*85*	*83*
2003	117	109	103	24	20	19	141	129	122	392	17,023	16,244	15,200	48,467	*89*	*88*	*83*
2004	120	111	109	27	20	19	147	131	128	406	17,413	16,839	15,222	49,474	*89*	*88*	*82*
2005	119	107	108	27	20	21	146	127	129	402	17,258	16,711	15,378	49,347	*90*	*88*	*82*
2006	122	105	116	29	18	20	151	123	136	410	17,026	16,620	14,814	48,460	*91*	*88*	*83*
2007	119	103	111	32	17	21	151	120	132	403	16,495	16,398	15,132	48,025	*91*	*88*	*81*
2008	116	103	103	28	19	17	144	122	120	386	16,253	15,518	14,577	46,348	*90*	*88*	*79*
2009	119	102	106	26	17	19	145	119	125	389	15,509	16,320	14,268	46,097	*88*	*89*	*82*
2010	120	105	104	27	18	22	147	123	126	396	15,769	15,586	15,127	46,482	*88*	*87*	*85*
2011	117	105	110	28	21	19	145	126	129	400	16,496	15,382	14,855	46,733	*91*	*86*	*83*
2012	115	107	107	27	19	20	142	126	127	395	15,678	15,428	14,343	45,449	*91*	*87*	*83*
2013	116	103	106	27	17	20	143	120	126	389	15,233	13,262	13,180	41,675	*90*	*88*	*82*
2014	111	98	105	30	16	17	141	114	122	377	15,195	13,341	13,015	41,551	*90*	*88*	*82*
2015	111	102	101	30	18	20	141	120	121	382	15,015	16,147	13,730	44,892	*89*	*87*	*83*
2016	117	92	100	25	18	20	142	110	120	372	17,643	15,230	12,600	45,473	*90*	*88*	*80*
2017	109	89	105	22	17	18	131	106	123	360	16,010	14,171	13,522	43,703	*87*	*85*	*79*
2018	110	106	106	28	21	22	138	127	128	393	14,836	15,144	14,502	44,482	*89*	*86*	*81*
2019	114	104	108	29	22	20	143	126	128	397	14,223	14,595	13,713	42,531	*89*	*86*	*80*
2020	30	36	29	8	2	7	38	38	36	112	3,161	4,890	3,770	11,821	*88*	*89*	*79*

Source. The Monitoring the Future study, the University of Michigan.

TABLE 3-2
Substance Use Among Ages 19-28, Based on 2013 Data from Monitoring the Future and The National Survey on Drug Use and Health

	NSDUH	MTF (Selection Weight Only)	MTF (Post-Stratification Weight)
Marijuana (use in past month)	17.9	16.9	19.1
Cocaine (use in past year)	4.7	3.5	3.9
Alcohol (use in past month)	65.0	67.7	68.7
Cigarettes (use in past month)	32.1	17.5	20.0

Source. The Monitoring the Future study, the University of Michigan and the National Survey on Drug Use and Health.

FIGURE 3-1
Schools included in 1 Year's Data Collection
8th, 10th, and 12th Grades

Source. The Monitoring the Future study, the University of Michigan.
Note. One dot equals one school.

FIGURE 3-2

School Participation Rates in 12th Grade [a]

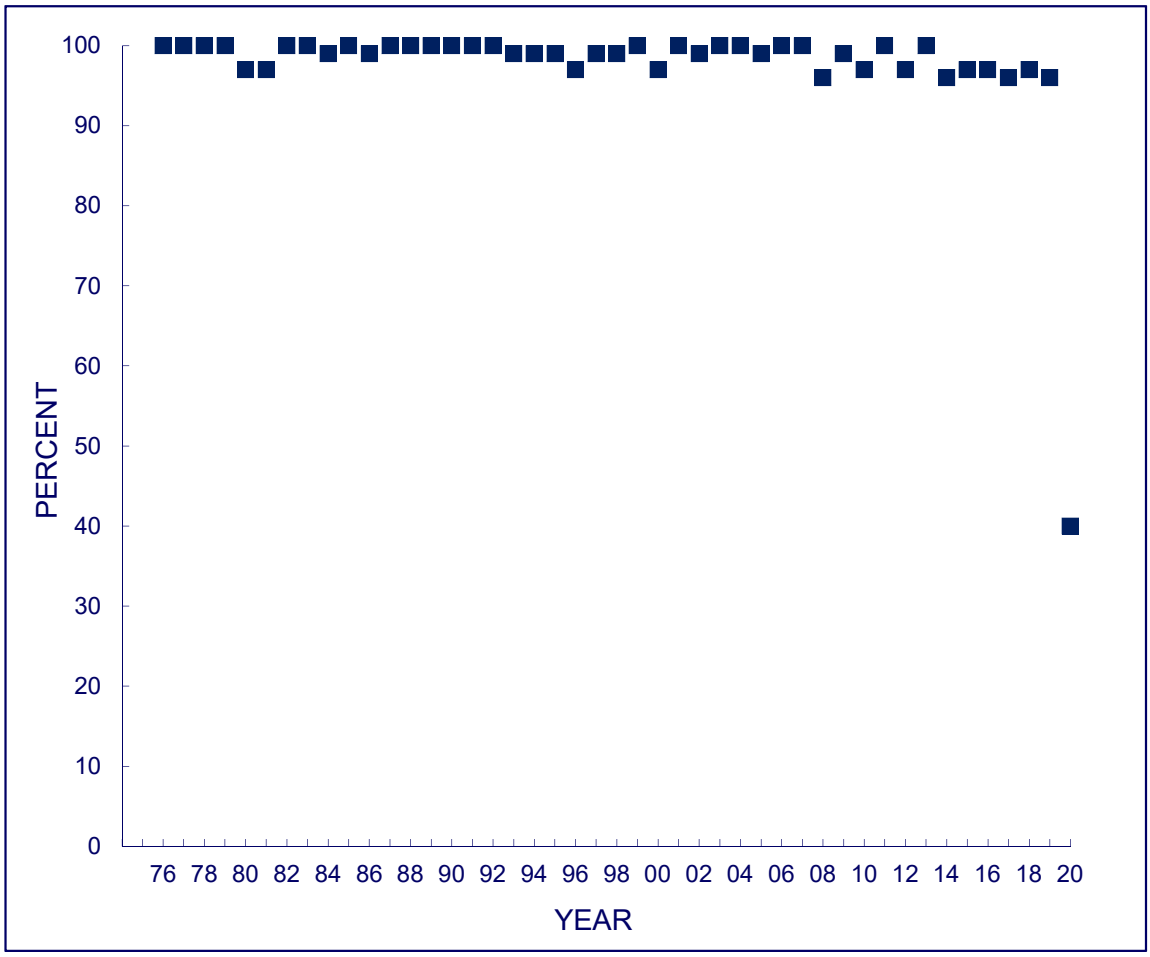
Percent of slots filled by...	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07
Original	59	63	62	63	71	71	66	72	67	66	72	71	68	70	59	55	60	53	52	53	51	51	57	62	56	49	53	62	63	59	58
Replacements	39	36	35	32	25	26	32	26	29	33	26	26	30	29	39	43	39	44	44	43	47	48	42	35	42	48	45	37	34	40	39
Total	98	99	97	95	96	97	99	98	96	99	99	98	99	99	98	98	99	97	96	96	98	99	99	97	98	97	98	99	97	99	97

filled by...	'08	'09	'10	'11	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
Original	53	54	58	56	53	54	58	56	53	54	51	44	44	41	40	40	13
Replacements	43	44	39	40	43	44	39	40	43	41	41	49	47	49	50	51	13
Total	96	98	97	96	96	98	97	96	96	95	92	93	91	90	90	91	26

Source: The Monitoring the Future study, the University of Michigan.

[a]In 2020 data collection was halted prematurely as a result of the COVID-19 pandemic. Detailed analysis supports supports the study results from this year as nationally representative (for more information see appendix to this article).

FIGURE 3-3
Percentage of Sampled Geographic Strata With At Least One School Surveyed in 12th Grade



Source. The Monitoring the Future study, the University of Michigan.

Chapter 4

PREVALENCE OF DRUG USE IN EARLY, MIDDLE, AND LATER ADULTHOOD

Longitudinal panel studies that track the same individuals across several years are typically used to examine developmental changes with age, as is evident in many of our publications. At the same time, the multiple cohort feature of the MTF design provides a useful snapshot of each age group in a given year, showing the prevalence of use of various substances for each age group in that year, thus enabling us to compare these prevalence estimates with those of the same age in earlier years. This chapter highlights such prevalence data for the adult age groups covered by MTF, starting right after high school and moving through middle and into older adulthood. Each age group is defined by the modal age for its graduating high school class cohort.[1] We will see that recent use tends to be higher in the early post-high school age groups, corresponding to the new freedoms associated with leaving high school and often moving away from the parental home.[2,3] But sometimes there are also strong cohort effects that underlie differences among age groups at a given point in time; in this chapter we will see evidence of both age-related differences and cohort effects.

Estimates of drug use in the adult population are often generated through household survey interviews of cross-sections of the general population. In the present study, our estimates come via self-reported questionnaires from respondents in the follow-up surveys. These are representative samples of previous classes of high school students who started their participation in MTF in their senior year. As described in more detail in Chapter 3, MTF has conducted ongoing panel studies on representative samples from each graduating high school senior class beginning with the class of 1976. From each class, two matched nationally representative subpanels of roughly 1,250 students each are randomly selected to comprise the follow-up panels through young adulthood; one subpanel is surveyed one year after graduation and every two years after that up through modal age 29 and the other is surveyed two years after graduation and every two years through modal age 30. Beginning at modal age 35, data collection occurs at the same time for both subpanels at five-year intervals. So, while each *cohort* participates every year up through age 30, each *individual respondent* participates only every other year until age 29/30. This alternating panel design was chosen to reduce the burden and repetitiveness of participating in the panel study every year while still allowing for full age coverage between 19 and 30. Thus, in a given year, the study includes respondents ages 19-30 from one of the two subpanels from each of the last 12 senior classes previously participating in MTF.[4]

[1] High school seniors have a modal age (the most common age) of 18; therefore, in a follow-up conducted 12 years later they would have a modal age of 30.

[2] Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates.

[3] Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002). *The decline of substance use in young adulthood: Changes in social activities, roles, and beliefs*. Mahwah, NJ: Lawrence Erlbaum Associates.

[4] Through 2001, the follow-ups also included modal ages 31 and 32. This seventh follow-up was dropped in 2002 because we believed that the costs were no longer justified by the marginal benefits of having these follow-up data, given that an age-35 survey was being conducted.

In 2020, representative samples of the classes of 2007 through 2019—modal ages 19 to 30—were surveyed using the same set of standard young adult survey instruments at each age. (There are six different questionnaire forms and each individual receives the form corresponding to the form he or she completed in 12th grade.) For brevity, we refer to this 19-30 year old age range as "young adults" in this chapter.

To build on the national panels of young adults, we extend the surveys into and beyond middle adulthood. The middle adulthood surveys are conducted beginning at modal age 35 (that is, 17 years after high school graduation) and at five-year intervals thereafter through age 60. In each of these later follow-ups, the two sub-panels from the relevant graduating class are *both* surveyed in the same year, using a single questionnaire form instead of six forms that were used from age 19 to 30. The content of the questionnaires is revised to some degree across age to be more relevant to the different developmental periods, although key substance use and other measures remain the same. The results of the 2020 follow-up surveys characterize the population of high school graduates of modal ages 19-30, 35, 40, 45, 50, 55, and 60. As discussed in Chapter 1, the high school dropout segment, between 6% and 15% across survey years, is missing from the senior year surveys and all of the follow-up surveys as well (as noted in Chapters 1 and 3, the high school dropout rate has declined for the younger cohorts). Thus, the results presented here are not necessarily generalizable to the entire population of each age, but are generalizable to the great majority of young and middle-aged adults—those who completed high school.

As discussed in Chapter 3, for 2020 data collections of 19-30 year olds, web-push survey procedures became our standard (i.e., they were encouraged to complete the online surveys, and mailed paper surveys were available on request and for initial non-responders). For data collections among 35-60 year olds in 2020, we began the transition from our typical mail-based surveys to web-based surveys. To test for survey mode differences, we randomly assigned half of each age group to the typical mail survey condition and half to the new web-push condition (as described in Chapter 3). We found few significant differences in estimates of prevalence of drug use between the two conditions (i.e., in about 6% of the comparisons); thus, we combined data from the two conditions in a weighted average in this chapter. We note exceptions when estimates differed significantly between conditions in the text and figures. At the end of the first section below on prevalence of substance use, we summarize the few significant differences in prevalence estimates across the two conditions.

Figures 4-1 through 4-22 contain 2020 *prevalence* data by age, corresponding to respondents ages 19-30 (for total and in two-year age groups), as well as 35, 40, 45, 50, 55, and 60 year olds. For comparison purposes, data are also included for the 2020 high school senior class, listed as 18 year olds (which is a smaller sample than is typical in 2020 due to the pandemic; as indicated in Chapter 3, the smaller sample was still representative). Figures provided in Chapter 5 contain the *trend* data for each of these age groups derived from the repeated cross-sectional surveys, including 12th graders and high school graduates through age 60. In the figures in Chapters 4 and 5, age groups spanning the young adult years have been paired into two-year intervals in order to increase the number of cases, and thus the precision, for each point estimate; the approximate weighted sample sizes are 4,200 for 19-30 year olds, and 700-800 per two year age group (see Tables 4-1 through 4-5). The data for ages 35, 40, 45, 50, 55, and 60 are, of necessity, based on a single age in each case. As indicated above, *both* half-samples from a given class cohort are included in each year's

samples of 35, 40, 45, 50, 55, and 60 year olds. In 2020 the paired half-samples came from the high school graduating classes of 2003, 1998, 1993, 1988, 1983, and 1978, respectively. The respective weighted numbers of cases were 707, 683, 752, 870, 790, and 890. (Actual unweighted numbers are somewhat higher because those from the oversampled drug-using stratum in high school, drawn at three times the rate of the others to assure a sufficient sample of drug users, are counted as only one third of a case in the weighted follow-up data. This is discussed more in Chapter 3.)

The weighting procedures used to adjust the panel data for the effects of panel attrition are described in Chapter 3.

REPLICABILITY OF FINDINGS

It is worth noting that any pattern of age-related differences found in one year can be checked in an adjacent year (i.e., in the previous or succeeding year's volume) for replicability, because two non-overlapping half-samples of follow-up respondents in the 19-to-30 age band are surveyed on alternating years. In the case of the 35, 40, 45, 50, 55, and 60 year olds, two different graduating classes make up the samples for any two adjacent, chronological years of the survey results.

THE IMPORTANCE OF ADJUSTED LIFETIME PREVALENCE ESTIMATES

In Figures 4-1 through 4-21, two different estimates of *lifetime* prevalence are provided. One estimate is based on the respondents' *most recent* (i.e., 2020) responses about ever having used the drug in question (the blue bar). The other estimate takes into account each respondent's answers regarding lifetime use gathered from *all* of the previous data collections in which he or she participated (the white bar). *To be categorized as one who has used the drug based on all past answers regarding that drug, a respondent must have reported either lifetime use in the most recent data collection* and/or *reported some use in his or her lifetime on at least two earlier data collections.* (Because respondents of ages 18 through 20 cannot have their responses adjusted on the basis of two earlier data collections, adjusted prevalence estimates are reported only for ages 21 and up; when considering the total age 19-30 sample, lifetime prevalence is also unadjusted.) Most other epidemiological studies can present only an unadjusted estimate because they have data from a single cross-sectional survey. An adjusted estimate of the type used here is possible only when panel data have been gathered so that a respondent can be classified as having used a drug at some time in his or her life, based on earlier answers, even though he or she no longer indicates lifetime use in the most recent survey.

The divergence of these two estimates increases as time passes; consistent divergences within age across history suggest this is largely an age effect (rather than a period or cohort effect). Obviously, there is more opportunity for inconsistency within individuals as the number of data collections increases. Our judgment is that the truth lies somewhere between the two estimates: the lower estimate may be depressed by tendencies to forget, forgive, or conceal earlier use, whereas the upper estimate may include earlier response errors or incorrect definitions of drugs that respondents appropriately revised in later surveys as they became more knowledgeable. It should be noted that a fair proportion of those giving inconsistent answers across time had earlier reported having used the given drug only once or twice in their lifetime.

Evidence indicates that the cross-time stability of self-reported usage measures, taking into account both prevalence and frequency of self-reported use, is very high.[5] Note that the divergence between the two lifetime prevalence estimates is least for alcohol and marijuana use and greatest for the psychotherapeutic drugs used without a doctor's orders (including amphetamines, sedatives (barbiturates), narcotics other than heroin, and tranquilizers) and for the derivative index of use of an ***illicit drug other than marijuana*** (Figure 4-2), which is heavily influenced by the estimates of use of these psychotherapeutic drugs (without a doctor's orders). We believe this greater divergence is due to respondents having greater difficulty accurately categorizing psychotherapeutic drugs (usually taken in pill form) with a high degree of certainty, especially if such a drug was used (without a doctor's orders) only once or twice. We expect higher inconsistency across time when the event, and in many of these cases a single event, is reported with a relatively low degree of certainty at quite different points in time. Those who have gone beyond simple experimentation with one of these drugs would likely be able to categorize them with a higher degree of certainty. Also, those who have experimented more recently (i.e., in the past month or year) should have a higher probability of recall as well as fresher information for accurately categorizing the drug.

We provide both estimates of lifetime use across the list of drugs to make clear that a full use of respondent information provides a possible range for lifetime prevalence estimates, not a single point. However, by far the most important use of the prevalence data is to track *trends* in *annual and 30-day* (as opposed to lifetime) use. Thus, we are much less concerned about the nature of the variability in the lifetime estimates than we might otherwise be. The lifetime prevalence estimates are of importance primarily in showing the degree to which a drug class has been adopted by the general population overall as well as particular cohorts. We believe that the evidence from the lifetime estimates suggests that other cross-sectional surveys of adults (e.g., age 35 and above) are subject to underreporting and that to some degree such underreporting increases with age, because adolescence and early adulthood are the periods in the life course during which most drug use occurs.[6]

PREVALENCE OF DRUG USE ACROSS AGE GROUPS

Figures 4-1 through 4-22 provide 2020 prevalence estimates for each class of drugs, covering respondents at ages 18 to 60. Tables 4-1 through 4-5 provide 2020 prevalence estimates for 19-30 year olds, for the total sample and by sociodemographic characteristics.

This section discusses differences in 2020 as a function of age, but it should be noted that these age differences are confounded with cohort differences. Thus, although the discussion is accurate with respect to age differences at a particular point in time, it is not necessarily the case that the

[5] O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions, 18,* 805–824.

[6] For a more detailed analysis and discussion, see Johnston, L. D., & O'Malley, P. M. (1997). The recanting of earlier-reported drug use by young adults. In L. Harrison & A. Hughes (Eds.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (NIDA Research Monograph No-167). Washington, DC: National Institute on Drug Abuse. Accessed at https://archives.drugabuse.gov/nida-research-monograph-index.

age differences would be similar in other time periods. In fact, our recent evidence, including many findings provided in Chapter 5, suggests both similarities and differences by age across cohorts. [7]

To begin this summary, we note three general age-related trends in 2020 prevalence; these trends were evident as they have been in our previous annual findings. ***First***, for nearly all illicit drugs considered across ages 18 to 60, *lifetime* prevalence was higher for the older age groups, as would be expected (because of both age effects and cohort effects, with the current older cohorts being from the highest drug using cohorts in the life of the study so far). The high levels of lifetime use among adults at age 50-60 in 2020 were especially noteworthy, with adjusted lifetime prevalence of ever using *any illicit drug* being 83-91% for 50-60 year olds in 2020. ***Second***, *annual and 30-day* illicit drug use in 2020 were highest among those in their early to mid-20s for nearly all drugs, and then lower in subsequent age groups through age 60. Marijuana in particular, annual use was highest among 21-22 year olds (47%) and declined mostly linearly with age to 18% at age 60; 30-day use was highest among 21-26 year olds (29%) and declined mostly linearly with age to 11% at age 60. ***Third***, these age trends of annual and 30-day use did not generally apply for alcohol and tobacco use in 2020, with most age patterns being either rather flat across age or showing increases with age. An important exception is binge drinking (five or more drinks in a row at least once in last two weeks), which was highest at ages 21-28 in 2020 at 30-31% and then progressively lower across age groups to 16% among 60 year olds. Details of and exceptions to these general age-related trends are provided below. As we note, age-related trends likely reflect, at least to some extent, both cohort effects and secular trends.

- The *adjusted lifetime prevalence* figures are most striking for today's 60 year olds (the high school class of 1978), who were passing through adolescence near the peak of the 1970s drug epidemic. Over nine out of ten (91%) reported trying ***an illicit drug*** (lifetime prevalence, adjusted), leaving only 9% who reported never having done so (Figure 4-1). Staying with the adjusted lifetime figures, more than four out of five 60 year olds (81%) said they had tried ***marijuana*** (Figure 4-3), and nearly as many (79%) said they had tried some ***other illicit drug*** (Figure 4-2), including almost half (48% who had tried ***cocaine*** specifically (Figure 4-6). The adjusted lifetime prevalence of ***any illicit drug*** for 50 and 55 year olds was 83-86% in 2020; moving down the age spectrum, prevalence for 35-45 year olds was 76-83% in 2020. It is clear from Figure 4-1 (and many of the other figures in this chapter) that *the parents and grandparents of today's teenagers and young adults represent very drug-experienced generations*; this may help to explain the *acceptance of medical marijuana* in a large number of states and *legalization of recreational marijuana* for adults in a growing number of states.

- In 2020, almost half (47%) of the high school seniors reported trying at least one illicit drug in their lifetime, typically marijuana (44%) as summarized below. Lifetime prevalence figures tend to be higher for those in their 20s than at earlier ages, suggesting that initiation of some drugs continues for many youth through their 20s. Among 29-30 year olds adjusted lifetime prevalence reached 75% for ***any illicit drug***, 70% for

[7] See for example: 1) Jager, J., Schulenberg, J. E., O'Malley, P. M., & Bachman, J. G. (2013). Historical variation in drug use trajectories across the transition to adulthood: The trend toward lower intercepts and steeper, ascending slopes. *Development and Psychopathology, 25*(2), 527-543; and 2) Patrick, M. E., Terry-McElrath, Y. M., Lanza, S. T., Jager, J., Schulenberg, J. E., & O'Malley, P. M. (2019). Shifting age of peak binge drinking prevalence: Historical changes in normative trajectories among young adults aged 18 to 30. *Alcoholism: Clinical and Experimental Research, 43*, 287-298.

marijuana, 53% for ***any illicit drug other than marijuana***, and 20% for ***cocaine*** (as discussed below, some of these 2020 prevalence estimates were higher among younger young adults). The 29-30 year olds graduated from high school in 2008 and 2009, long after the peak of the 1970s drug epidemic and after the peak of the relapse phase in the epidemic during the 1990s; even in these relatively low drug-using cohorts, only about one fourth (25%) report *never* having tried an illegal drug.

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- As summarized below, despite the higher lifetime prevalence levels of illicit drugs among older age groups, these older groups generally showed *annual* or *30-day* prevalence levels that are typically considerably lower than those of today's 12th graders and young adults. This suggests that desistence more than offsets the incidence of initiating use of most illicit drugs during the years after high school.

  In analyses published elsewhere, we looked closely at patterns of change in drug use with age and identified post-high school experiences that contribute to declining levels of annual or 30-day use of drugs as respondents grow older. For example, the likelihood of marriage increases with age, and we have found that marriage is consistently associated with declines in ***alcohol*** use, ***binge drinking***, ***marijuana*** use, ***cocaine*** use, and most likely just about all of the other illicit drugs as well.[8]

- For use of ***any illicit drug***, *annual* prevalence in 2020 was 45% among 19-30 year olds combined (Table 4-1), peaking among 21-22 and 23-24 year olds (49%); it was lowest among the older age groups, ranging between 21% and 32% among 35-60 year olds (Figure 4-1). Thirty-day prevalence was 28% among 19-30 year olds combined and highest among 23-24 and 25-26 year olds (31%); it was lower among the 35-60 year olds (12% to 19%). Thus, in 2020, annual use of any illicit drugs was highest among 21-24 year olds, and 30-day use was highest among 23-26 year olds.

- *Lifetime* prevalence for ***marijuana*** (Figure 4-3) in 2020 generally increased with age through the 20s and through middle adulthood, with adjusted lifetime prevalence reaching 70-73% among 25-30 year olds and 74-81% among 50-60 year olds. But, against the general pattern of increasing lifetime prevalence with age, among those aged 35-60, prevalence was lowest for 45 year olds (69%). This pattern of lifetime use being lower among 45 year olds was also true for some other illicit drugs (cocaine, hallucinogens) and

[8] See MTF website for examples including: a) Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities.* Mahwah, NJ: Lawrence Erlbaum Associates; and Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002). *The decline of substance use in young adulthood: Changes in social activities, roles, and beliefs*. Mahwah, NJ: Lawrence Erlbaum Associates; b) O'Malley, P. M., Bachman, J. G., Johnston, L. D., & Schulenberg, J. E. (2004). Studying the transition from youth to adulthood: Impacts on substance use and abuse. In J. S. House, F. T. Juster, R. L. Kahn, H. Schuman, & E. Singer (Eds.), *A telescope on society: Survey research and social science at the University of Michigan and beyond* (pp. 305–329). Ann Arbor, MI: The University of Michigan Press; c) Staff, J., Schulenberg, J. E., Maslowsky, J., Bachman, J. G., O'Malley, P. M., Maggs, J. L., & Johnston, L. D. (2010). Substance use changes and social role transitions: Proximal developmental effects on ongoing trajectories from late adolescence through early adulthood. *Development and Psychopathology, 22 (*Special issue: Developmental cascades: Part 2), 917-932; d) Maggs, J. L., Jager, J., Patrick, M. E., & Schulenberg, J. E. (2012). Social patterning in early adulthood in the USA: Adolescent predictors and concurrent wellbeing across four distinct configurations. *Longitudinal and Life Course Studies* (Special Section: Transition to Adulthood in the UK, the US and Finland; Guest Editors: J. E. Schulenberg and I. Schoon), *3*(2), 190-210; e) McCabe, S. E., Kloska, D. D., Veliz, P., Jager, J., & Schulenberg, J. E. (2016). Developmental course of nonmedical use of prescription drugs from adolescence to adulthood in the United States: National longitudinal data. *Addiction*, *111*(12), 2166-2176; f) Jang, B., Patrick, M. E., & Schuler, M. S. (2018). Substance use behaviors and the timing of family formation during young adulthood. *Journal of Family Issues, 39*, 1396-1418; and Jang, B., Schuler, M. S., Evans-Polce, R. J., Patrick, M. E. (2018). Marital status as a partial mediator of the associations between young adult substance use and subsequent substance use disorder: Application of causal inference methods. *Journal of Studies on Alcohol and Drugs, 79*, 567-577.

particularly psychotherapeutic drugs used without medical supervision (amphetamines, sedatives [barbiturates], tranquilizers, narcotics other than heroin); as summarized below, this relative dip in 2020 of annual prevalence of various illicit drugs sometimes pertained to 50 year olds as well. The 45 year olds graduated from high school in 1993 when prevalence of marijuana and other drugs was at or near historic lows across the past four decades, thus suggesting a cohort effect.

- *Annual* prevalence for ***marijuana*** in 2020 was 42% for 19-30 year olds combined (Table 4-1), and highest at ages 21-22 (47%); it generally declined with age in a step-wise manner: it was 35-45% among 23-30 year olds, 27% among 35 and 40 year olds, and 16-21% among 45-60 year olds (Figure 4-3). A similar age-group pattern held for *30-day* prevalence. It was 27% for ages 19-30 combined and highest for 21-26 year olds at 29%; it declined to 23-26% among 27-30 year olds, 17% among 35 and 40 year olds, and 10-12% among 45-60 year olds. As is evident in Figure 4-3 comparing annual and 30-day prevalence with lifetime prevalence, greater proportions—usually much greater proportions—of the older cohorts have discontinued use. Nonetheless, in 2020, over one-in-ten 45-60 year olds were current users of marijuana (i.e., they used at least once in the 30 days prior to the survey).

- Current ***daily marijuana*** use (defined as using on 20 or more occasions in the past 30 days) in 2020 was 9.8% among 19-30 year olds combined (Table 4-1), indicating that almost one-in-ten young adults were daily or near-daily marijuana users. Prevalence of daily marijuana use showed some age differences (see Figure 4-3 in this chapter as well as in Figure 5-3c in Chapter 5), standing at 6% at age 18, 8% at age 19-20, 12% at age 21-22, 10-11% at ages 23-28, 8% at age 29-30, 5-6% at ages 35 and 40, and 2-3% at ages 45-60.

- In 2020, questions about ***vaping marijuana*** were included in all panel surveys. In 2020, vaping marijuana (Figure 4-20) was most common among those in their early 20s, and much more common among all 19-30 year olds than among 35-60 year olds. *Lifetime* prevalence of vaping marijuana was 31% among 19-30 year olds overall in 2020; across the age groups, it was 33% at ages 19-20, 36% at ages 21-22, 32% at ages 23-26, 25-28% at ages 27-30, 7-10% at ages 35-40, and 3-4% at ages 45-60 (note that vaping items were first added to some young adult survey forms in 2017 and in age 35-60 surveys in 2019, and thus, adjusted lifetime estimates are not yet included) (Table 4-2, Figure 4-20). *Annual* prevalence was 20% among 19-30 year olds overall; for the young adult age groups, it was 24% at ages 19-22, 18-20% at ages 23-28, 15% at ages 29-30, 4-5% at ages 35-40, and 1-3% at ages 45-60 (Table 4-3, Figure 4-21). *Thirty-day* prevalence of vaping marijuana in 2020 was 11% among 19-30 year olds overall; for the young adult age groups it was 13-14% at ages 19-22, 10-11% at ages 23-26, 8-9% at ages 27-30, and 0-1% at ages 35-60 (Table 4-4, Figure 4-20). Thus, in 2020, age-patterns in annual and 30-day prevalegnce of marijuana vaping were similar to the age-patterns for marijuana use in general, showing a peak in the early 20s, declining some through age 30, and then dropping step-wise to ages 35-40 and to ages 45-60. The recent rapid increase in vaping among adolescents[9] may well have generated cohort differences that are reflected in early young adult age groups and

[9] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

may also appear in later age groups in the future. Trends (2017-2020) in vaping marijuana among young adults are presented in Chapter 5.

- ***Synthetic marijuana*** refers to a set of substances containing synthetic cannabinoids that are meant to mimic the effects of cannabinoids found in natural marijuana; synthetic cannabinoids are created artificially and typically sprayed on herbal and plant material, which is then smoked. These substances have been sold over the counter in head shops, gas stations, on the Internet, and in other venues under various brand names like "spice" and "K-2." Only 1.2% of young adults ages 19 to 30 years reported using synthetic marijuana in the last 12 months in 2020 (Table 4-3). Prevalence was 1.9% among 21-22 year olds, and then declined unevenly with age to 0.7% among 29-30 year olds (use is not asked of those over age 30). Clearly, synthetic marijuana is currently not a commonly used drug.

- Adjusted prevalence estimates for *lifetime* use of ***any illicit drug other than marijuana***[10] (Figure 4-2) showed an appreciable rise across age groups in 2020, reaching 53% for the 29-30 year olds and 79% among 60 year olds (Figure 4-2). In other words, *more than three quarters of all 60 year olds* have tried some illicit drug other than marijuana, and *over half of today's 29-30 year olds* have done so.

  In 2020, both *annual* and *past 30-day* use of any illicit drug other than marijuana was similarly high across ages 21-26 (Figure 4-2). Annual use was 19% among 19-30 year olds combined (Table 4-1). It rose with age from 15% among 19-20 year olds to 20-22% among 21-26 year olds, and then dropped to 18% at ages 27-30. Thirty-day use was 7.8% among 19-30 year olds combined (Table 4-4); it rose across age groups from 6% at ages 19-20 to 10% at age 23-24, and was 7-9% for ages 25-30. Among those age 35 and older, annual prevalence declined from 13% at age 35 to 8% at ages 50-60. As summarized below, a number of the individual drugs that comprise this general category show lower annual prevalence at higher ages, usually with the highest *annual* prevalence observed in the early- to mid-20s. This is particularly true for ***amphetamines***, ***cocaine, hallucinogens***, ***LSD*** specifically, ***hallucinogens other than LSD***, and ***MDMA (ecstasy, Molly)***. The falloff across age strata is not as great nor as consistent for ***sedatives*** (***barbiturates***), ***tranquilizers,*** and ***narcotics other than heroin***, as well as for very low prevalence substances including ***methamphetamine***, ***heroin***, and ***inhalants.*** Several of these classes of drugs are discussed individually next.

- ***Hallucinogens*** (Figure 4-9) have been used by a fair proportion of adults. *Adjusted lifetime* prevalence in 2020 was between 21% and 33% for the 35-50 year olds. (Hallucinogens are not included in the age 55 or age 60 survey.) Adjusted lifetime prevalence was lower at younger ages, and was at 16% at age 21-22. *Annual* prevalence in 2020 was 7.6% among 19-30 year olds combined (Table 4-3), peaking at 11% at ages 21-22 and declining to 5% at ages 29-30; it was 3% or less at the older ages (Figure 4-9).

- ***LSD*** (Figure 4-10) had a fairly limited *adjusted lifetime* prevalence among young adults in 2020, reaching a high of 16% among 25-26 year olds. *Annual* prevalence was 4.7% among

[10] See Chapter 3 for discussion of legal status of marijuana and our terminology.

19-30 year olds combined (Table 4-3), and highest among 21-22 year olds at 7%, falling to 2% at ages 29-30. LSD use was not asked of those over age 30.

- ***Hallucinogens other than LSD*** (Figure 4-11), which means psilocybin ("magic mushrooms") for the most part, had a higher *adjusted lifetime* prevalence among young adults in 2020 than LSD, reaching 19% by age 29-30. *Annual* prevalence peaked at 7% at ages 21-22 and dropped to 3-4% at ages 27-30. Overall, among young adults aged 19-30, annual prevalence was similar for hallucinogens other than LSD (5.2%) and for LSD (4.7%) (Table 4-3). Use was not asked of those over age 30.

- ***Inhalants*** are not commonly used by adults. In 2020, *adjusted lifetime* prevalence increased across age strata, peaking at 17% among 29-30 year olds (Figure 4-12). *Annual* prevalence was 1-2% across young adulthood, showing little change with age; *30-day* prevalence was already quite low by age 18 and did not have much more room to decline, ranging between 0% and 1% in young adulthood. Clearly, 30-day use of inhalants is almost absent beyond about age 18, and we know from data presented in *Volume I* that much of the decline in use with age has already occurred by 10th grade. Use was not asked of those over age 30.

- For ***amphetamines*** used without a doctor's orders (termed nonmedical use)[11], lifetime prevalence was much higher among the older age groups, with *adjusted lifetime* prevalence increasing from 15% at age 21-22 to 30% at age 29-30 and to 56% at age 60 in 2020 (Figure 4-4). This increase with age reflects in part the addition of new users who initiated use in adulthood, but also reflects some cohort differences carried over from high school. Those aged 45 in 2020 had relatively lower lifetime amphetamine use (30%), reflecting that these respondents graduated from high school in the early 1990s when prevalence was at or near historic lows across the past four decades. As is true for most psychotherapeutic drugs, corrected lifetime prevalence and contemporaneously reported lifetime prevalence diverge considerably especially among those age 35 and older. However, more recent use, as reflected in *annual prevalence* (Table 4-3 and Figure 4-4), was considerably lower among the older age groups. It was 6.6% for those age 19-30 combined, peaking at 9% at age 23-24 and declining to 5% at age 29-30 and to 1% by age 60. *Thirty-day* prevalence was 2.0% for 19-30 year olds overall (Table 4-3), ranging from 1% to 3% in this age group; it was 0-1% among those aged 35-60. These age differences have not always been true; the present pattern reflects a sharper historic decline in use among older respondents than has occurred among 12th graders, as well as cohort differences in having ever used these drugs. These trends are discussed in the next chapter.

- ***Ritalin***, a stimulant widely prescribed for the treatment of attention deficit hyperactivity disorder or ADHD, shows a relatively low annual prevalence of nonmedical use, between 0.9% and 2.6% for ages 19 to 30 in 2020 (Table 4-3). Use was not asked of those over age 30.

[11] These and other prescription drug use questions are asked on the surveys with respect to use "not under a doctor's orders". Throughout this volume, we use the term "nonmedical use" to reflect use not under a doctor's orders. Unless otherwise indicated, our considerations of prescription drug use in this Volume concern nonmedical use.

- ***Adderall***, an amphetamine stimulant also used in the treatment of ADHD, showed a substantially higher *annual* prevalence of nonmedical use in 2020 compared to Ritalin. It was 7.6% among 19-30 year olds combined; it was highest at 9% among 21-26 year olds and was 5-7% among 27-30 year olds[12] (Table 4-3).

- Questions on the use of ***methamphetamine*** are contained in only two of the six questionnaire forms for young adults, so estimates are less reliable than those based on all six forms. In 2020 *adjusted lifetime* use increased somewhat across age strata, from 2% for 21-22 year olds to 4% for 29-30 year olds. This suggests that much initiation of methamphetamine use occurs after high school, though more recent cohorts of high school graduates have been reporting considerably lower levels of use post high school. *Annual* prevalence did not vary much with age, however, remaining at 0-1% for ages 19-30 in this population of high school graduates (Table 4-3 and Figure 4-5.) Respondents over age 30 are not asked about methamphetamine use.

- Nonmedical use of ***sedatives*** (***barbiturates***) showed *adjusted lifetime* prevalence estimates in 2020 that rose fairly linearly from age 21-22 (5%) through age 40 (26%), then showing a relative dip at ages 45 (22%) and 50 (22%) before rising to a peak at age 60 (35%) (Figure 4-13). As discussed above, this relative dip likely reflects a cohort effect with these cohorts experiencing adolescence in the late 1980s and early 1990s when such substance use was relatively low. *Annual* use was 2.0% among 19-30 year olds combined (Table 4-1) and was quite level across all age groups from 18 to 60 at 2-3%. *Thirty-day* use was 1% across all age groups. It is noteworthy that because of the substantial long-term decline in sedative (barbiturate) use over the life of MTF, the 60 year olds had by far the highest adjusted lifetime prevalence (35%); but they were not any more likely to be currently using than the younger age groups.[13]

- Nonmedical use of ***tranquilizers*** (Figure 4-15) shows a similar picture to that for sedatives (barbiturates), with a general increase across age-bands in *adjusted lifetime* prevalence through age 40 (32%), with a relative dip among those age 45 (25%) and 50 (31%), reflecting a likely cohort effect as discussed above. Those aged 55 and 60 again showed higher, indeed the highest, levels of adjusted lifetime prevalence (36% and 43%[14], respectively). *Annual* prevalence of nonmedical tranquilizer use was 3.4% among 19-30 year olds combined (Table 4-1) and was similar across all age groups, ranging between 3% and 4% from age 18 through age 60. Thirty-day prevalence was 1-2% across all age groups.

- *Adjusted lifetime* prevalence of nonmedical use of ***narcotics other than heroin*** (Figure 4-14) varied considerably across the age groups in 2020 from 7% for those age 21-22 to 23%

[12] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. The annual prevalence of Adderall is similar to the annual prevalence of amphetamines, reflecting that Adderall is a commonly used amphetamine. In the cases where annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamines this is likely a matter of random sample variation due to relatively small age-specific sample sizes.

[13] Barbiturates were the dominant form of sedatives in use when these questions were first introduced. In the intervening years, a number of non-barbiturate sedatives have entered the market and largely displaced barbiturates. We believe that a number of users of non-barbiturate sedatives are reporting them in answer to this question, which also defines them in terms of the conditions for which they are prescribed. In recognition of this fact, we now label them as "sedatives (barbiturates)." The rewording of the question was made in half of the questionnaire forms in 2004 and in the other half in 2005.

[14] As noted in Figure 4-15, for the 2020 estimate of adjusted lifetime prevalence of tranquilizers for 60 year olds, there was a significant difference ($p<.01$) between the typical mail condition (47%) and new web-push condition (37%) of survey administration.

for those age 29-30; it was 33-42% for ages 35-60, except being 30% at age 45 (reflecting the relative dip discussed above for this age group in 2020). *Annual* prevalence of narcotics other than heroin was 2.6% among 19-30 year olds combined, and was at 2-3% across the young adult age groups (Table 4-3; Figure 4-14). Among older adults, it was 4% at age 35 and 2-3% at ages 40-60. *Thirty-day* prevalence showed little difference across the age bands, with estimates at 0-2% in all age categories.

- *Adjusted lifetime* prevalence of ***cocaine*** in 2020 was lowest among 21-22 year olds (11%) and generally increased through age 40 (28%); it then showed a relative dip at ages 45 (22%) and 50 (27%), and continued to increase at ages 55 (43%) and 60 (48%) (Figure 4-6). This uneven age progression is indicative of a cohort effect, with the 45 and 50 year olds being from a lower drug using 12th grade cohort as discussed above (also, as discussed in Chapter 5, there have been clear cohort effects in cocaine use over the years). *Annual* prevalence in 2020 was 6.8% for ages 19-30 combined, peaking at 10% at ages 25-26 and then declining to 4% by age 40; annual use was 1% among 45-60 year olds. *Thirty-day* use was 1.9% for ages 19-30 combined and 1-2% across the young adult age groups. Very few (0-2%) of the 35-60 year olds today are past-30-day users of cocaine, despite the fact that so many of them used it at least once in their lifetime. Among 60 year olds, nearly half used cocaine at some time in their life but only about 1% reported using in the past year and close to 0% reported using it in the past 30 days. In other words, noncontinuation rates for cocaine are now extremely high among adults, particularly older adults.

- In 2020, *adjusted lifetime* prevalence of ***crack*** use (Figure 4-8) was much lower than general cocaine use. It was 3% among 21-24 year olds and then increased unevenly with age to 12% at age 29-30 (Note that due to very low prevalence of annual and 30-day use of crack cocaine, we deleted crack cocaine items in 2019 among adults age 35 and older; 2018 *adjusted lifetime* prevalence was 10-13% among 50-60 year olds; trends are discussed in Chapter 5.) Among 19-30 year olds, *annual prevalence* was 0.7% and *30-day* prevalence was 0.2% (Tables 4-3 and 4-4).

- In 2020, among 19-30 year olds combined, 14% said they have tried ***MDMA*** (***ecstasy, Molly***) (*adjusted lifetime* prevalence) (Figure 4-16). Across the 20s, adjusted lifetime MDMA prevalence increased unevenly with age, peaking at 20% among 25-26 year olds (Figure 4-16). *Annual* prevalence was 4.5% for ages 19-30 combined, ranging from 4% to 5% (Table 4-3). *Thirty-day* MDMA use was at 1% for young adults in 2020. There clearly has been a high degree of noncontinuation of the use of this drug in 18-30 year olds, and the large differences across age groups likely reflect cohort effects. (Note in Figure 4-16 that there is practically no difference between the current reporting of lifetime prevalence and the adjusted figures.)

- A question about the use of ***salvia*** was introduced into one questionnaire form in 2009 as a single tripwire question asking only the frequency of use in the past twelve months (Table 4-3). Salvia has some mild hallucinogenic properties. *Annual* prevalence for ages 19 through 30 combined is very low; it stood at 0.7% in 2020 (Table 4-3). Older respondents are not asked the question.

- In 2020, all ***alcohol*** prevalence estimates were considerably higher among young adults than among 12th graders, and they generally increased after high school, through at least the mid-20s (Figures 4-18a and 4-18b). *Adjusted lifetime* prevalence was 86% among 21-22 year olds and ranged from 92% to 95% among 23-30 year olds; it changed very little after age 30, due in large part to a "ceiling effect" (prevalence was 97% to 99% among those age 35 to 60). *Annual* use was 55% at age 18 and 82% at ages 19-30 combined (Table 4-3); it rose sharply with age, reaching 89% at age 25-26; it was fairly level from age 27-28 through age 50 (85-89%), and then declined to 79-80% among 55-60 year olds. *Thirty-day* use was 34% at age 18 and 65% at ages 19-30 combined (Table 4-3); it rose sharply with age, peaking at 73% among 25-26 year olds, was fairly level from age 27-28 to age 40 (70-74%), and then declined through age 60 (62%). Current ***daily drinking*** (defined as 20 or more occasions in the past 30 days) (Figure 4-18b) increased gradually and substantially across the age strata, peaking at 13% at ages 55-60.

  Binge drinking (i.e., having five or more drinks in a row on at least one occasion in the two weeks prior to the survey) was 28% for young adults age 19-30 combined (Table 4-5) and showed considerable differences by age (Figure 4-18b). Prevalence was 17% at age 18 and 17% among those ages 19-20. It was 30-31% among 21-28 year olds, 27% among 29-30 year olds, 26% among 35 and 40 year olds, 20-23% among 45-55 year olds, and 16% among 60 year olds. We have interpreted this increasing-then-decreasing relationship with age as reflecting an age effect, not a cohort effect, because it seems generally to replicate across different graduating class cohorts and also because it has been linked directly to age-related events such as leaving the parental home (which is linked to increases in binge drinking) and marriage (which is linked to decreases).[15] Clearly, binge drinking is most popular among people in their twenties and falls off after that. Still, in 2020 among those age 40-55, over one-fifth reported binge drinking in the two weeks prior to the survey.

  Questions regarding ***high-intensity drinking*** (also referred to as extreme binge drinking)[16,17,18,19] were introduced into MTF surveys in 2005. Two measures are used: drinking *10 or more drinks* on one or more occasions in the prior two weeks and drinking *15 or more drinks* on one or more occasions in the prior two weeks. In 2020, the "10 or more" item was on five of six questionnaire forms among young adults, and the "15 or

[15] O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976–1986. *American Journal of Public Health, 78*(10), 1315–1321. See also a) Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities.* Mahwah, NJ: Lawrence Erlbaum Associates; b) Schulenberg, J. E., & Maggs, J. L. (2002). A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. *Journal of Studies on Alcohol, Supplement,* (14), 54-70; c) Patrick, M. E., Terry-McElrath, Y. M., Lanza, S. T., Jager, J., Schulenberg, J. E., & O'Malley, P. M. (2019). Shifting age of peak binge drinking prevalence: Historical changes in normative trajectories among young adults aged 18 to 30. *Alcoholism: Clinical and Experimental Research, 43,* 287-298.

[16] Patrick, M. E., Terry-McElrath, Y. M., Miech, R. A., Schulenberg, J. E., O'Malley, P. M., & Johnston, L. D. (2017). Age-specific prevalence of binge and high-intensity drinking among U.S. young adults: Changes from 2005 to 2015. *Alcoholism: Clinical and Experimental Research, 41*(7), 1319-1328.

[17] Patrick, M. E. & Terry-McElrath, Y. M. (2017). High-intensity drinking by underage young adults in the United States. *Addiction, 112,* 82-93.

[18] Patrick, M. E., Terry-McElrath, Y. M., Kloska, D. D., & Schulenberg, J. E. (2016). High-intensity drinking among young adults in the United States: Prevalence, frequency, and developmental change. *Alcoholism: Clinical and Experimental Research, 40*, 1905-1912.

[19] Terry-McElrath, Y. M. & Patrick, M. E. (2016). Intoxication and binge and high-intensity drinking among US young adults in their mid-20s. *Substance Abuse, 37*, 597-605.

more" item was on only one form.[20] Among all young adults 19-30 (Table 4-5), prevalence of having 10 or more drinks on at least one occasion in the two weeks prior to the survey was 12% in 2020; it was 10% at ages 19-20, 15% at ages 21-22, 12-16% at ages 23-28, and 11% at age 29-30. The combined age 19-30 prevalence for having 15 or more drinks on at least one occasion in the prior two weeks was 2.8%, ranging from 2% to 4% among ages 19 to 30. These questions are not asked of respondents over age 30.

- ***Cigarette smoking*** showed an unusual pattern of age-related differences, influenced to some extent by cohort differences (Figure 4-19). In 2020 ***30-day (current) smoking*** prevalence was lowest among 12th graders (7%). Among 19-30 year olds combined, it was 9.5%, being 7-8% at ages 19-22 and 10-11% at ages 23-30. Among those age 35-60, it was fairly level, ranging from 9% to 13%. Among 18-30 year olds, the prevalence of ***daily smoking*** was 3% among 18 year olds and 5.3% among 19-30 year olds combined, showing an increase across the ages peaking at 7% among 27-30 year olds; among those aged 35-60, it was 9-12%. At older ages, a rising proportion past-30-day smokers also reported daily smoking. Through age 30 a majority of those indicating any smoking in the prior year were not ***daily*** smokers; the proportion then declined with age so that among those age 60 only about one-fourth of those who smoked in the prior year were not daily smokers.

  The prevalence of smoking ***half a pack or more*** of cigarettes per day was only 1% among those age 18 and generally increased with age across young adulthood to 5% at age 27-28; it was 5-8% among 35-50 year olds, and highest among 55-60 year olds (9%). The *proportions* of 30-day smokers who smoked a half-pack or more per day also were higher among older respondents in 2020: *among daily smokers* about 14% at 12th grade, 36% among 29-30 year olds, and 69% among 60 year olds were smoking at the *half-pack a day* level.

  In essence, lighter smoking (in the past 12 months, but not in the past 30-days) falls off as one moves up the age bands beyond age 30, after which regular/heavy smoking accounts for increasing proportions of all current smoking, as may be seen in Figure 4-19. It appears highly likely that cohort differences in ever initiating smoking drive this pattern of cross-age smoking prevalence.

- In 2020, we included the questions about ***vaping nicotine*** on all panel surveys. As shown in Figure 4-21, vaping nicotine was most common in 2020 among ages 18-22, then dropped sharply with age through age 35 and drops further through age 60. In 2020, *lifetime* prevalence of vaping nicotine was 39% among 19-30 year olds overall, with it being highest for 21-22 year olds (48%) and declining across the age groups (Table 4-2, Figure 4-21) to 6% at age 60 (note that vaping items were first added to some young adult survey forms in 2017 and to age 35-60 surveys in 2019, and thus adjusted lifetime estimates are not yet included). *Annual* prevalence was 22% among 19-30 year olds overall, with it being highest among 18-22 year olds (32%) and declining across age groups to 1% at age 60

[20] Because this measure is included in only one of the six questionnaire forms used with young adults, the numbers of cases are very limited, less than 200 weighted cases per year for each two-year age band from 19 to 30. Therefore, the estimates may be less reliable than those based on more cases.

(Table 4-3, Figure 4-21). *Thirty-day* prevalence was 14% among 19-30 year olds overall, and highest among 18-20 year olds (21-22%) and declining across age groups to 1% at age 60 (Table 4-4). The recent rapid increase in vaping nicotine among adolescents[21] may well have generated cohort differences that are reflected in these age groups and may also be predictive of future increases in later age groups. It remains an open question whether nicotine vaping will continue to fall off with advancing age or whether it will remain primarily at levels set in young adulthood, a pattern seen for cigarette use. Trends (2017-2020) in vaping nicotine among young adults are presented in Chapter 5.

- Past *30-day* prevalence of ***smokeless tobacco*** use (asked in only one of the six questionnaire forms, so estimates tend to vary unsystematically) stood at 4.2% among all young adults in 2020. *Daily* prevalence was 0.8% among all young adults, with the highest levels observed among 19-20 year olds (4%) (Tables 4-4 and 4-5).

- Questions were added in 2011 on the consumption by young adults of tobacco in various specific forms other than cigarettes including vaping nicotine. Only tripwire questions are used for these forms of tobacco use (except for vaping), providing only annual prevalence and frequency data (Table 4-3). Past-year prevalence of use in 2020 among 19-30 year olds was 8.8% for using a ***hookah*** to smoke tobacco, 13% for smoking ***small cigars***, 3.9% for using ***snus***, and only 1.1% for using ***dissolvable tobacco***. Among young adults, hookah smoking was highest among 21-22 year olds at 11% and declined steadily to 5% at ages 29 to 30. Annual prevalence of smoking small cigars was highest among 25-26 year olds at 17%, and 8-16% among other young adults. Annual prevalence of use of snus was highest among 25-26 year olds at 7% vs. 1-5% among the other young adults. Annual prevalence of dissolvable tobacco use was 2-3% among 19-22 year olds and less than 1% among the other young adult age groups.

Selective Summary of 2020 Prevalence of Drug Use Across Age Groups

To summarize some key findings regarding 2020 prevalence estimates, *annual* and *30-day* ***marijuana*** and many forms of ***illicit drug use*** (especially ***amphetamines***, ***cocaine***, ***hallucinogens***, and ***MDMA***) tended to be highest among those in their early to mid-20s. In particular, *annual* and *30-day* ***marijuana*** use in 2020 was highest among 21-26 year olds (44-47% and 29%, respectively), with both measures declining mostly linearly with age to 16-18% and 10-11%, respectively, at ages 50-60 (indicating that in 2020, about one-in-ten 50-60 year olds used marijuana at least once in the past 30 days). This age-curve held in 2020 for ***daily marijuana*** use (i.e., reported using on 20 or more occasions in the previous 30 days): prevalence peaked at 12% among 21-22 year olds, leveled at 10-11% among 23-28 year olds, and dropped to 3-4% among 45-60 year olds. Thus, as of 2020, over one-in-ten 21-28 year olds was a daily or near-daily marijuana user. *Annual* and *30-day* prevalence of ***vaping marijuana*** also tended to be highest in 2020 among those in their early-20s (*annual* use peaked at 24% among ages 19-22; *30-day* use peaked at 13-14% among 19-22 year olds), and the same was true for ***vaping nicotine*** in 2020 (*annual use* peaked at 32% among 18-22 year olds; *30-day* use peaked at 20-22% among 18-22 year olds).

[21] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

Lifetime prevalence in some of the older age groups (particularly those aged 55 and 60), who passed through adolescence and early adulthood in the heyday of the drug epidemic, showed remarkably high lifetime levels of illicit drug use—particularly when lifetime prevalence was corrected for the recanting (or forgetting) of previously reported use. This highlights the importance of cohort effects when considering age-related changes (for example, for some drugs, including ***amphetamines***, ***cocaine***, ***hallucinogens***, ***sedatives [barbiturates]***, ***tranquilizers***, and ***narcotics other than heroin***, there tended to be a lower *lifetime* prevalence in 2020 at age 45 compared to those younger and older, consistent with their lower prevalence as teens in the late 1980s and early 1990s).

However, *30-day* use of most illicit drugs was substantially lower among those over age 30 than among those in their late teens to early 20s, and this was true for ***binge drinking*** as well. For ***sedatives (barbiturates), tranquilizers,*** and ***narcotics other than heroin,*** as well as for ***alcohol*** and ***cigarettes***, the picture is different; there is less falloff in annual and 30-day use with age, and there are higher levels of daily alcohol use and regular cigarette smoking in the older ages.

When considering these various prevalence estimates, it is important to recall that our samples are based on high school graduates and thus exclude those who drop out of high school, a group that tends to show higher prevalence of most substances, especially cigarettes; in addition, we are less likely to maintain persistent heavy drug users, such as current heroin or methamphetamine users, in our sample. Thus, prevalence estimates are likely underestimates of the total population of adults, but should be on target for adult high school graduates who are note heavy users.

As discussed in Chapter 3, we compared survey administration conditions among 35-60 year olds in 2020, with half being randomly assigned to our typical mail-based condition and half to the new web-push condition in order to gauge any impact of survey condition on the prevalence estimates (in 2018 and 2019, we made this comparison among young adults). As indicated in footnotes in text above and in footnotes to Tables 4-1 to 4-5, there were very few significant differences in prevalence estimates between the two conditions in 2020, and thus we combined estimates across the two conditions into a weighted average About 6% of the comparisons reported in this chapter for 35-60 year olds across all drugs and intensities of use yielded differences significant at the 5% level in 2020, and except for estimates of tranquilizer use and cigarette smoking (in which mail estimates were higher than web-based estimates), there was little consistency in the significant differences across ages, substances and drug use intensities, suggesting random variation.

To summarize 2020 survey-mode findings among 35-60 year olds, significant differences between the typical mail and web-push conditions were found in the following comparisons: for ***sedatives (barbiturates)***, adjusted lifetime prevalence at age 35 (16% versus 24%), and annual prevalence at age 60 (1.3% versus 3.3%); for ***narcotics other than heroin***, adjusted lifetime prevalence at age 55 (39% versus 30%), and lifetime prevalence at age 55 (32% versus 24%) and at age 60 (36% versus 29%); for ***tranquilizers***, adjusted lifetime prevalence at age 60 (47% typical mail vs. 37% web-push), lifetime prevalence at age 60 (37% versus 29%), and 30-day prevalence (1.7% versus 0.2%); for ***heroin***, adjusted lifetime prevalence at age 55 (4.5% versus 1.3%) and at age 60 (6.7% versus 2.7%), and lifetime prevalence at age 55 (3.5% versus 0.6%) and at age 60 (4.4% versus 0.7%); for ***alcohol***, 30-day prevalence at age 40 (68% typical mail versus 76% web-push); and for ***cigarettes***, annual prevalence at age 45 (19% versus 13%) and at age 50 (18% versus 12%), 30-

day prevalence at age 45 (14% versus 8.5%) and age 60 (15% versus 9.1%), daily prevalence at age 45 (12% versus 5.6%) and age 60 (14% versus 8.0%), and prevalence of half-pack-a-day at age 45 (10% versus 4.7%). For additional information, see our published articles for earlier experiments on mail and web conditions among young adults,[22] and for the results of the 2018 comparisons.[23]

COMPARISONS FOR DEMOGRAPHIC SUBGROUPS OF YOUNG ADULTS

Subgroup differences for 19-30 year olds are presented in Tables 4-1 through 4-5. While Table 4-1 provides only gender differences, the remaining tables show prevalence estimates by gender, age, region of the country, and population density. Age-group differences were summarized above; below we summarize gender, region, and population density differences separately. Lifetime, annual, 30-day, and daily use prevalence are shown in Tables 4-2 through 4-5, respectively.

In the next chapter, we summarize trends overall and for the subgroups considered below. Figures depicting trends in the use of the various drugs by the subgroups are provided in a separate publication from the study, Occasional Paper 96.[24]

Gender Differences

In general, most of the gender differences in drug use among young adults (19-30) were observed in high school students as well.[25] See Tables 4-1 through 4-5 for the full set of gender comparisons. Below, we summarize gender differences and consider whether differences are statistically significant ($p<.01$).

- Among the full young adult sample ages 19 to 30 in 2020, *lifetime* use of ***any illicit drug*** was not significantly different for men (66%) and women (67%), and the same was true regarding lifetime ***marijuana*** use (63% vs. 64%); but lifetime use of any ***illicit drug other than marijuana*** was significantly higher among men (41%) than women (35%) (Table 4-2). Regarding annual prevalence, men were significantly higher than women on reported *annual* use of any illicit drug other than marijuana (22% vs. 17%), but men and women were similar on annual use of any illicit drug (46% vs. 45%) and marijuana (43% vs. 41%). Similarly, men were significantly higher than women on reported *30-day use* of any illicit drug other than marijuana (9.1% vs. 6.8%) and marijuana (28% vs. 26%), and men and women were similar on any illicit drug use (29% vs. 27%) (Table 4-1).

- Annual and 30-day prevalence of ***vaping marijuana*** was significantly higher for young adult men than women in 2020 (Table 4-1). The 2020 *annual* prevalence of vaping

[22] Patrick, M. E., Couper, M. P., Laetz, V. B., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Miech, R. A. (2018). A sequential mixed mode experiment in the U.S. National Monitoring the Future study. *Journal of Survey Statistics and Methodology, 6*(1), 72-97. Patrick, M. E., Couper, M. P., Jang, B., Laetz, V. B., Schulenberg, J., Johnston, L. D., Bachman, J., O'Malley, P. M. (2019). Two-year follow-up of the sequential mixed-mode experiment in the U.S. National monitoring the future study. *Survey Practice, 12*(1).

[23] Patrick, M. E., Couper, M. P., Parks, M. J., Laetz, V., & Schulenberg, J. E. (2020). Comparison of a web-push survey research protocol with a mailed paper and pencil protocol in the Monitoring the Future panel survey. *Addiction*.

[24] Johnston, L.D., Schulenberg, J.E., O'Malley, P.M., Bachman, J.G., Miech, R. A., & Patrick, M.E. (2021). Demographic subgroup trends among young adults in the use of various licit and illicit drugs, 1988-2020 (Monitoring the Future Occasional Paper No. 96). Ann Arbor, MI.: Institute for Social Research, University of Michigan.

[25] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

marijuana among 19-30 year old men and women was 23% and 18%, respectively. For *30-day* prevalence of vaping marijuana, it was 12% for men and 10% for women.

- ***Daily marijuana*** use (i.e., using on 20 or more occasions in the past 30 days) was significantly more common for men (12%) than women (8.2%) among 19-30 year olds in 2020 (Table 4-5).

- *Annual* prevalence of ***synthetic marijuana*** use in 2020 was low and about equivalent among young adult men and women (1.5% vs. 1.0%) (Table 4-1).

- Among 19-30 year olds in 2020, men had significantly higher *annual* prevalence levels than women for many illicit drugs including ***hallucinogens, amphetamines,*** and ***cocaine***; however, the two were similar regarding annual prevalence of ***narcotics other than heroin***, ***MDMA (ecstasy, Molly)***, ***sedatives (barbiturates),*** and ***tranquillizer***s (Table 4-3). We summarize these gender differences and similarities next.

- *Annual* ***hallucinogen*** use was significantly more common among men (9.5%) than women (6.2%) in 2020, and the same was true regarding ***LSD*** (6.3% vs. 3.5%) and ***hallucinogens other than LSD*** (6.3% vs. 4.5%) (Table 4-1).

- *Annual* prevalence of ***cocaine*** use was significantly higher among men (8.7%) than women (5.6%) in 2020. Annual prevalence of ***crack cocaine*** use was low and similar among men (0.9%) and women (0.6%) in 2020 (Table 4-1).

- *Annual* prevalence of nonmedical use of ***narcotics other than heroin*** was similar in 2020 among men (2.6%) and women (2.5%) (Table 4-1). Likewise, *annual* prevalence of subclasses of narcotics other than heroin was similar for men and women, including for ***Vicodin*** (2.3% for men, 1.5% for women) and ***OxyContin*** (2.4% for men, 2.0% for women) (Table 4-3).

- *Annual* prevalence of ***MDMA*** (***ecstasy***, ***Molly***) was similar among men (5.1%) and women (4.2%) in 2020.

- The *annual* nonmedical use of ***amphetamines*** was significantly higher among men (7.7%) than women (5.8%) in 2020; the same was true regarding annual use of ***Adderall*** specifically (8.8% vs. 6.9%[26]) (Table 4-3).

- *Annual* nonmedical prevalence of ***sedatives (barbiturates)*** in 2020 was similar for men (2.0%) and women (2.1%), as was that of ***tranquilizers*** (3.2% vs. 3.6%).

- Some indices of ***alcohol*** use were similar for men and women in 2020, including *annual* prevalence of alcohol use (81% for men, 83% for women) and *annual* prevalence of ***getting***

[26] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. The annual prevalence of Adderall is similar to the annual prevalence of amphetamines, reflecting that Adderall is a commonly used amphetamine. In case where annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamines – for women – this is likely a matter of random sample variation due to relatively small sample sizes for Adderall.

drunk (63% for men, 60% for women); however, men were significantly higher than women on *30-day* prevalence of alcohol use (66% for men, 64% for women) and *30-day* prevalence of getting drunk (34% for men, 29% for women) (Tables 4-3 and 4-4).

- For more frequent and heavier use of alcohol, men reported higher levels than women. Among 19-30 year olds in 2020, ***daily alcohol*** use was significantly more common for men than women (7.7% vs. 3.8%), as was true for ***binge drinking***—having five or more drinks in a row at least once in the prior two weeks (34% vs. 24%). There was a particularly large (and significant) gender difference in measures of ***high-intensity drinking*** in 2020: prevalence of having 10 or more drinks at least once in the prior two weeks was 17% for men vs. 9.1% for women, and prevalence of having 15 or more drinks was 5.2% for men and 1.1% for women[27] (Table 4-5).

- For most indices of ***nicotine*** use, men reported higher levels than women. In 2020, 19-30 year old `men were significantly more likely than women to smoke ***cigarettes*** in the *past year* (25% vs. 18%) and *past month* (11% vs. 9%); however, men and women were more similar with regard to smoking *daily* in the past month (5.3% vs. 5.3%), and regarding *smoking half a pack or more per day* in the past month (3.2% vs. 2.6%) (Table 4-1).

- *Annual* prevalence of ***vaping nicotine*** in 2020 was significantly higher at ages 19-30 for men than women (26% vs. 19%) (Table 4-1). *Thirty-day* prevalence in 2020 was also significantly higher for men than women (16% vs. 12%) (Table 4-1).

- Among young adults there was a very large (and significant) gender difference in 2020 in the use of ***smokeless tobacco***, with men much more likely than women to have used in their *lifetime* (27% vs. 8.6%) (Table 4-2) and in the *past month* (8.8% vs. 1.3%) (Table 4-1). This was true as well for *annual* use of ***snus***, of which use occurred almost entirely among men (8.4% vs. 1.1% among women). Annual use of ***dissolvable tobacco*** was very low and similar for men and women (1.7% and 0.8%, respectively) (Table 4-3).

- In 2020, men were much more likely (significantly so) to have smoked ***small cigars*** in the *past year* than women (21% vs. 7.6%). The *30-day* use of ***regular little cigars*** (4.5% vs. 1.7%) was somewhat higher among men than women. The 30-day use of ***flavored little cigars*** (5.5% vs 4.0%) was similar among men and women; note that the flavoring in little cigars may serve to reduce gender differences.

- The *annual* use of tobacco with ***hookah*** pipes in 2020 was similar for young adult men (10%) and women (7.9%).

Selective Summary of Gender Differences in 2020 Prevalence

In summary of some key findings regarding gender differences among 19-30 year olds in 2020 , prevalence estimates of substance use, men were significantly higher than women on most indices of ***marijuana*** use, including 30-day use (28% vs. 26%), daily use (12% vs. 8.2%), annual

[27] For information on gender differences by age for these measures, see for example: Patrick, M. E., & Terry-McElrath, Y. M. (2019). Prevalence of high-intensity drinking from adolescence through young adulthood: National data from 2016-2017. *Substance Abuse: Research and Treatment, 13*, 1-5.

marijuana vaping (23% vs. 18%), and 30-day marijuana vaping (12% vs. 10%); however, the two were not significantly different on annual use (43% vs. 41%).Regarding use of ***any illicit drug other than marijuana*** in 2020, men were also significantly higher than women on *annual* prevalence (22% vs. 17%) and *30-day* prevalence (9.1% vs. 6.8%). Men had significantly higher *annual* prevalence than women for many individual illicit drugs including ***hallucinogens***, ***LSD, hallucinogens other than LSD, amphetamines,*** and ***cocaine***; however, the two were similar regarding *annual* prevalence of ***narcotics other than heroin***, ***MDMA (ecstasy, Molly), sedatives (barbiturates),*** and ***tranquillizers.***

Men and women aged 19-30 were similar in 2020 in *annual* prevalence of ***alcohol use*** and of ***getting drunk***, but men were higher on *30-day* prevalence of both**.** For more frequent and heavier use of alcohol, men reported significantly higher levels than women, including ***daily alcohol*** use (7.7% vs. 3.8%), ***binge drinking*** (34% vs. 24%), and ***high-intensity drinking*** (for 10+ drinks, 17% vs. 9%). In 2020, men were significantly more likely than women to smoke ***cigarettes*** in the *past 12 months* (25% vs. 18%) and *past 30-days* (11% vs. 9%); however, men and women were more similar regarding daily cigarette smoking. Regarding ***vaping nicotine*** in 2020, men were significantly higher than women on *annual* prevalence (26% vs. 19%) and 30-*day* prevalence (16% vs. 12%).

Regional Differences

Follow-up respondents are asked in what state they resided as of March the year in which they completed the survey. States are then grouped into the same four regions used in the analysis of high school data.[28] Tables 4-2 through 4-5 present regional differences in lifetime, annual, 30-day, and current daily prevalence for 19-30 year olds combined.

- There exist some regional differences in the *annual* prevalence of ***marijuana*** use, with 2020 estimates being higher in the West (46%) and Northeast (47%) than the Midwest (42%) and the South (36%). Likewise, *annual* prevalence of ***any illicit drug*** use, which is driven largely by marijuana use, was higher in the West (50%) and Northeast (49%) than in the Midwest (45%) and South (41%) (Table 4-3).

- In 2020, the *annual* prevalence of ***any illicit drug other than marijuana*** (Table 4-3) was highest in the West at 24% and 17-19% in the other regions.

- *Thirty-day* prevalence of ***marijuana*** use was higher in the West (33%) and Northeast (29%) and lower in the Midwest (25%) and South (23%) (Table 4-4). *Daily* use of marijuana was highest in the West (12%) and similar among the other regions (ranging from 8.5% to 10.1%) (Table 4-5).

- The *annual* prevalence for ***vaping marijuana*** in 2020 was higher in the West (24%) and Northeast (23%) than in the Midwest (21%) and South (15%) (Table 4-3). The same

[28] States are grouped into regions as follows: ***Northeast***—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania; ***Midwest***—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; ***South***—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas; ***West***—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

regional pattern generally held for *30-day* prevalence of vaping marijuana in 2020 (West at 16%, Northeast at 11%, Midwest at 10%, and South at 7%) (Table 4-4). Thus, regional ranking of vaping marijuana is similar to overall marijuana use, with both being highest in the West.

- The *annual* prevalence for ***synthetic marijuana*** in 2020 was quite low and did not differ much by region (ranging from 0.9% to 1.1%) (Table 4-3).

- In 2020, the use of ***hallucinogens*** tended to be highest in the West. *Annual* prevalence of hallucinogen use was 12% in the West and 5.6-7.0% in the other regions; for ***LSD***, it was 6.3% in the West and 3.7-5.0% in the other regions; and for ***hallucinogens other than LSD***, it was 9.5% in the West and 3.0-4.8% in the other regions (Table 4-3).

- For ***MDMA*** (***ecstasy***, ***Molly***), *annual* 2020 prevalence was higher in the West (6.8%) than in the other regions of the country (which ranged from 3.6% to 4.1%) (Table 4-3).

- In 2020, *annual* prevalence of ***cocaine*** was higher in the West (10.1%) vs. in the Northeast (6.9%), Midwest (5.8%) and South (5.2%) (Table 4-3).

- The *annual* nonmedical prevalence for ***narcotics other than heroin*** in 2020 was low across the regions (1.9-3.1%). (Table 4-3).

- The *annual* nonmedical prevalence of ***amphetamines*** was somewhat higher in the West (8.1%) and Northeast (7.0%) than the Midwest (5.9%) and South (5.8%). ***Adderall*** was somewhat higher in the Northeast (9.6%) and West (8.1%) than the Midwest (7.0%) and South (6.4%)[29] (Table 4-3).

- Overall, regarding illicit drug use, it is noteworthy that the use of ***LSD***, ***hallucinogens other than LSD***, ***MDMA (ecstasy, Molly)***, and ***cocaine*** tended to be higher in 2020 among young adults in the West than the other regions. Across other illicit drugs, regional differences in 2020 were not substantial (Tables 4-2 through 4-5).

- ***Alcohol use*** is typically somewhat higher in the Northeast and Midwest regions than in the South and West; this pattern held in 2020 regarding annual and 30-day prevalence and 30-day drunkenness. For ***binge drinking*** among 19-30 year olds, prevalence was somewhat higher in the Midwest (31%) than in the other regions (27-28%) (Table 4-5). Regarding ***high-intensity drinking*** among 19-30 year olds, having 10 or more drinks in a row was lowest in the Northeast (10%) and similar across the other regions (12-14%). *Thirty-day* self-reported ***drunkenness*** was higher in the Midwest (34%) and Northeast (33%) than in the West (30%) and South (27%) (Table 4-4). Thus, as is typically true, the Midwest showed the highest prevalence of heavy drinking among young adults in 2020.

[29] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. The annual prevalence of Adderall is similar to the annual prevalence of amphetamines in each region, reflecting that Adderall is a commonly used amphetamine. When annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamines, this is likely a matter of random sample variation due to relatively small regional sample sizes for Adderall.

- ***Cigarette smoking*** among young adults tended to be slightly higher in the Midwest and South and lowest in the West in 2020. *Thirty-day* prevalence was 11% in the Midwest and 10% in the South, 8.2% in the Northeast and 8.1% in the West (Table 4-4).

- In 2020, *30-day* prevalence of ***vaping nicotine*** was somewhat higher for the Midwest and West (15%) than for the Northeast (13%) and South (12%) (Table 4-4). Thus, regional differences for vaping nicotine do not closely follow those for smoking cigarettes in 2020.

- Use of ***flavored little cigars*** (Table 4-4) showed little regional difference in 2020, with a *30-day* prevalence of 4.3-5.0%. In contrast, the *30-day* prevalence of ***regular little cigars*** (i.e., non-flavored) was higher in the West (5.5%) than in the other regions (1.2-2.4%), and the same was true for *30-day* prevalence for the use of ***large cigars*** (6.5% in the West and 0.9-1.3% in the other regions) (Table 4-4).

- The *30-day* prevalence of ***smokeless tobacco*** use in 2020 was higher in the Midwest (7.4%) than in the West (4.0%), South (3.3%), and Northeast (0.4%) (Table 4-4).

- The *annual* use of ***snus*** in 2020 was higher in the Midwest (6.5%) compared to the South (3.1%), Northeast (2.5%), and West (2.4%) (Table 4-3).

- *Annual* use of a ***hookah*** to smoke tobacco was similar across the regions, ranging from 7% to 10% in 2020 (Table 4-3).

Selective Summary of Regional Differences in 2020 Prevalence

In summary of some key findings regarding regional differences among 19-30 year olds in 2020, annual ***marijuana*** use tended to be higher in the West and Northeast (46-47%) than in the Midwest (42%) and South (36%), and the same was true for annual ***vaping marijuana*** (23-24%, 21%, and 15%, respectively). However, 30-day prevalence of both was highest in the West (33% and 16%, respectively) than in the other regions (23-29% and 7-11%, respectively). Regarding use of ***any illicit drug other than marijuana*** in 2020, the West had the highest annual prevalence (24%), and this was true for the annual prevalence of ***LSD***, ***hallucinogens other than LSD***, ***MDMA (ecstasy, Molly)***, and ***cocaine***; across other illicit drugs, regional differences were not substantial.

In 2020 among young adults, *annual* and *30-day* ***alcohol*** use as well as 30-day ***drunkenness*** were somewhat higher in the Northeast and Midwest than the West and South; for indices of *heavy* alcohol use (e.g., ***binge drinking***), prevalence tend to be highest in the Midwest and varied among the other regions. ***Cigarette smoking*** tended to be slightly higher in the Midwest and South. ***Vaping nicotine*** was somewhat higher in the West and Midwest.

Population Density Differences

Population density is measured by asking respondents to select the response category that best describes the size and nature of the community where they lived during March of the year in which they completed the follow-up questionnaire. The various categories are listed in Tables 4-2 through

4-5; the population sizes given to the respondent to help define each level are provided in a footnote to each table.[30] See Tables 4-2 through 4-5 for the tabular results on 19-30 year olds combined.

- Many differences in illicit drug use by population density tend to be modest, with the use of many illicit drugs being broadly distributed among all areas from rural to urban. When there are variations, almost all of the associations are positive with regard to density, with rural/country areas having the lowest levels of use, and small towns having the next lowest. Medium-sized cities, large cities, and very large cities tend to be appreciably higher. In 2020, positive associations with population density existed for *annual* prevalence of ***any illicit drug*** (ranging from 34% for farm/country to 56% for very large city), ***any illicit drug other than marijuana*** (ranging from 14% to 27%, respectively), and ***marijuana*** (30% to 52%, respectively) (Table 4-3). The *annual* prevalence of ***vaping marijuana*** showed the same pattern, ranging from 14% for farm/country to 27% for very large cities. Most of the drugs that comprise the measure of any illicit drug other than marijuana showed a similar pattern, with exceptions noted below.

- *Annual* prevalence of ***cocaine***, ***MDMA (ecstasy***, ***Molly)***, ***amphetamines***, and ***hallucinogens*** (including ***LSD*** and ***other than LSD***) showed a positive correlation with population density, being highest in very large cities and lowest in farm/country; differences were especially distinct for cocaine (11% and 4.3%, respectively), amphetamines (11% and 4.1%, respectively), and hallucinogens in general (10% to 5.3%, respectively) (Table 4-3).

- Differences among density strata were quite small in 2020 for *annual* nonmedical prevalence of ***narcotics other than heroin***, ranging from 2.9% to 3.6% (and the same was true for ***OxyContin*** and ***Vicodin*** specifically) (Table 4-3). Similarly, many of the illicit drugs with relatively low *annual* prevalence did not show substantial variation by population density, including use of ***inhalants, salvia, crack, heroin, methamphetamine, sedatives (barbiturates),*** and ***Ketamine*** (Table 4-3).

- Among young adults age 19-30, the *lifetime* and *annual* ***alcohol*** use measures all showed a slight positive association with population density, while *30-day* use had a somewhat stronger positive association, with 55% of the farm/country stratum reporting alcohol use in the prior 30 days versus 73% of those in very large cities.

  Prevalence of ***binge drinking*** among young adults was positively associated with population density as well (Table 4-5), with 26% of those in the farm/country and small town strata indicating having had five or more drinks in a row at least once in the prior two weeks compared to 32% of those in the very large cities. ***Daily alcohol use*** in the prior month varied little by population density in 2020 (ranging from 6.5% in very large cities to 4.5-5.8% in the other strata). For 10 or more drinks in a row in the past two weeks (a measure of ***high intensity drinking***), prevalence in 2020 was somewhat higher in very large

[30] An examination of the 1987 and 1988 drug use data for the two most urban strata revealed that the modest differences in prevalence estimates between the suburbs and their corresponding cities were not worth the complexity of reporting them separately; accordingly, since then these categories have been merged to increase sample sizes.

cities, large cities, and medium cities (13%) and lower in small towns and farm/country (10-12%). (Table 4-5).

- Contrary to what we find for almost all other substances, there exists a negative association between population density and prevalence of ***daily cigarette smoking***, which was highest in the farm/country stratum (9.6%) and lowest in very large cities (3.6%). Smoking at the half-pack-a-day level in the prior 30 days was over five times as high in the farm/country stratum as in very large cities (6.5% vs. 1.2%, respectively; Table 4-5).

- *Annual* prevalence of ***hookah*** smoking (Table 4-3) was positively correlated with population density, ranging from 3.3% in farm/country to 11% in very large cities.

- *Annual* prevalence of ***small cigars*** was highest in very large and large cities (16%) and similar among the other population density strata (10-11%). (As noted in Table 4-3, Ns are relatively small for these and other forms of tobacco use summarized below.)

- *Thirty-day* prevalence of ***flavored little cigars*** was highest in the farm/country stratum (7.2%) and lower in all other strata (3.2% to 5.1%). (Table 4-4).

- *Thirty-day* prevalence of ***smokeless tobacco*** use was highest in small towns and large cities (7-8%), and lower in very large cities, medium cities, and farm/country (1-2%) (Table 4-4).

- Finally, ***vaping nicotine*** showed mixed variation by population density in 2020. *Annual* prevalence in 2020 ranged from 20% to 23% across the five strata (Table 4-3), and the same was true for *30-day* prevalence in 2020, which ranged from 13% to 15% across five strata (Table 4-4).

Selective Summary of Population Density Differences in 2020 Prevalence

In summary of some key findings regarding population density differences among 19-30 year olds in 2020, prevalence tended to be positively correlated with population density for many substances. This was true for annual prevalence of ***marijuana*** (ranging from 30% for farm/country to 52% for very large cities), of ***vaping marijuana*** (14% to 27%, respectively), of ***any illicit drug other than marijuana*** (15% to 27%, respectively), and of many individual illicit drugs including ***cocaine***, ***MDMA (ecstasy***, ***Molly)***, ***amphetamines***, and ***hallucinogens*** (including ***LSD*** and ***other than LSD***); across other illicit drugs, population density differences were not substantial.

In 2020 among young adults, *annual* and *30-day* ***alcohol*** use as well as ***binge drinking*** also showed a positive correlation with population density. Contrary to what we find for almost all other substances, there exists a negative association between population density and ***cigarette smoking***. ***Vaping nicotine,*** in terms of both annual and 30-day prevalence, did not vary systematically by population density in 2020.

TABLE 4-1
Prevalence of Use of Various Types of Drugs by Gender among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Men	Women	Total
Approximate Weighted N =	*1,900*	*2,800*	*4,700*
Any Illicit Drug [1]			
Annual	45.7	45.0	45.4
30-Day	29.4	27.4	28.3
Any Illicit Drug other than Marijuana [1]			
Annual	21.7	17.3	19.1
30-Day	9.1	6.8	7.8
Marijuana			
Annual	42.7	41.4	42.0
30-Day	28.3	25.5	26.8
Daily [2]	11.8	8.2	9.8
Synthetic Marijuana			
Annual [3]	1.5	1.0	1.2
Inhalants [3]			
Annual	1.9	0.6	1.2
30-Day	0.9	*	0.4
Hallucinogens [5]			
Annual	9.5	6.2	7.6
30-Day	3.5	1.6	2.4
LSD [5]			
Annual	6.3	3.5	4.7
30-Day	1.6	0.6	1.0
Hallucinogens other than LSD [5]			
Annual	6.3	4.5	5.2
30-Day	2.2	1.2	1.6
MDMA (Ecstasy, Molly) [6]			
Annual	5.1	4.2	4.5
30-Day	1.2	0.9	1.0
Cocaine			
Annual	8.7	5.6	6.8
30-Day	2.2	1.6	1.9
Crack [4]			
Annual	0.9	0.6	0.7
30-Day	0.2	0.2	0.2
Other Cocaine [4]			
Annual	6.3	3.9	4.7
30-Day	0.9	1.5	1.2
Heroin			
Annual	0.5	0.2	0.3
30-Day	0.3	0.1	0.2
With a Needle [7]			
Annual	0.3	*	0.1
30-Day	0.3	*	0.1
Without a Needle [7]			
Annual	0.6	*	0.3
30-Day	0.5	*	0.2

(Table continued on next page.)

TABLE 4-1 (cont.)
Prevalence of Use of Various Types of Drugs by Gender among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Men	Women	Total
Approximate Weighted N =	*1,900*	*2,800*	*4,700*
Narcotics other than Heroin [8]			
Annual	2.6	2.5	2.6
30-Day	1.0	0.8	0.9
Amphetamines, Adjusted [8,9]			
Annual	7.7	5.8	6.6
30-Day	2.6	1.5	2.0
Methamphetamine [7]			
Annual	0.9	0.7	0.8
30-Day	0.3	0.2	0.2
Sedatives (Barbiturates) [8]			
Annual	2.0	2.1	2.0
30-Day	0.7	0.9	0.8
Tranquilizers [8]			
Annual	3.2	3.6	3.4
30-Day	0.9	1.0	1.0
Alcohol			
Annual	81.1	83.2	82.2
30-Day	66.4	63.6	64.7
Daily [2]	7.7	3.8	5.3
5+ Drinks in a Row in Last 2 Weeks	34.3	23.7	28.0
10+ Drinks in a Row in Last 2 Weeks [5]	16.6	9.1	12.4
15+ Drinks in a Row in Last 2 Weeks [4]	5.2	1.1	2.9
Been Drunk [3]			
Annual	62.7	60.0	60.7
30-Day	34.4	28.8	30.8
Daily [2]	0.7	0.3	0.5
Flavored Alcoholic Beverages [4]			
Annual	63.1	71.3	68.0
30-Day	32.7	38.1	35.9
Cigarettes			
Annual	24.7	18.2	21.0
30-Day	10.6	8.7	9.5
Daily	5.3	5.3	5.3
1/2 Pack+/Day	3.2	2.6	2.8
Any Vaping			
Annual	35.2	27.7	30.8
30-Day	21.6	17.2	19.0
Vaping Marijuana			
Annual	22.6	18.2	20.1
30-Day	12.1	9.8	10.8
Vaping Nicotine			
Annual	25.6	19.1	21.9
30-Day	16.1	11.9	13.7

(Table continued on next page.)

TABLE 4-1 (cont.)
Prevalence of Use of Various Types of Drugs by Gender among Respondents of Modal Ages 19–30, 2020

	Men	Women	Total
Vaping Just Flavoring			
Annual	9.5	7.7	8.5
30-Day	4.9	3.2	4.0
Smokeless Tobacco [4]			
30-Day	8.8	1.3	4.2
Daily	1.9	0.2	0.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[1]Use of any illicit drug includes any use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders.

[2]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes, measured as actual daily use, and 5+ drinks, measured as having five or more drinks in a row in the last two weeks.

[3]This drug was asked about in three of the six questionnaire forms. Total *N* is approximately 2,400.

[4]This drug was asked about in one of the six questionnaire forms. Total *N* is approximately 800.

[5]This drug was asked about in five of the six questionnaire forms. Total *N* is approximately 3,900.

[6]This drug was asked about in four of the six questionnaire forms. Total *N* is approximately 3,100.

[7]This drug was asked about in two of the six questionnaire forms. Total *N* is approximately 1,600.

[8]Only drug use that was not under a doctor's orders is included here.

[9]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

TABLE 4-2
Lifetime Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Any Illicit Drug [1]	Any Illicit Drug other than Marijuana [1]	Marijuana	Inhalants [2]	Hallucinogens [4]	LSD [4]	Hallucinogens other than LSD [4]	MDMA (Ecstasy,Molly) [6]	Cocaine	Crack [3]
Total	*4,700*	66.7	37.4	63.9	6.9	17.3	12.5	13.8	14.1	14.8	2.0
Gender											
Men	*1,900*	65.8	40.8	63.4	8.1	21.9	16.7	17.8	16.1	17.8	2.3
Women	*2,800*	67.2	35.1	64.2	6.0	14.0	9.7	11.0	12.7	12.8	1.9
Modal Age											
19–20	*800*	52.2	21.6	50.6	3.9	10.4	8.0	6.8	5.2	5.7	0.4
21–22	*800*	64.6	30.2	63.0	6.8	15.6	13.5	11.6	12.0	11.1	1.6
23–24	*800*	68.8	38.6	65.3	6.4	19.3	13.7	14.5	13.7	16.7	0.8
25–26	*800*	71.2	45.6	68.5	7.8	19.7	15.3	16.2	19.5	21.2	3.2
27–28	*700*	72.3	44.0	69.2	7.8	19.4	12.4	16.7	16.4	17.0	2.4
29–30	*800*	71.2	44.0	67.4	8.6	19.3	12.4	17.3	17.1	16.6	3.6
Region											
Northeast	*900*	70.2	38.6	67.7	6.4	17.7	13.4	13.9	12.9	17.5	1.7
Midwest	*1,200*	66.1	36.7	64.2	5.6	15.9	11.2	12.3	11.6	12.7	1.7
South	*1,500*	63.5	35.2	60.0	7.3	14.6	11.1	11.1	12.5	11.9	1.8
West	*1,100*	69.2	40.5	66.2	7.6	22.5	15.6	19.4	19.1	18.8	3.1
Population Density [5]											
Farm/Country	*400*	56.6	31.8	51.9	6.5	15.0	11.0	13.0	8.3	11.1	0.7
Small Town	*1,200*	62.2	29.8	60.4	6.3	14.0	10.2	11.3	9.6	11.2	2.3
Medium City	*1,200*	66.7	37.5	63.5	7.7	15.7	10.9	12.2	13.9	13.5	1.7
Large City	*1,100*	69.2	39.7	66.6	7.2	18.1	13.6	14.5	15.7	16.1	2.2
Very Large City	*800*	75.1	47.8	72.7	5.7	25.0	18.3	19.8	21.3	22.3	2.8

(Table continued on next page.)

TABLE 4-2 (cont.)
Lifetime Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Other Cocaine [3]	Heroin	Heroin with a Needle [7]	Heroin without a Needle [7]	Narcotics other than Heroin [8]	Amphetamines [8,9]	Methamphetamine [7]
Total	*4,700*	11.1	1.4	0.6	1.5	10.9	19.7	2.4
Gender								
Men	*1,900*	12.3	1.8	0.5	2.3	12.8	22.3	2.3
Women	*2,800*	10.4	1.2	0.6	1.0	9.6	17.9	2.5
Modal Age								
19–20	*800*	3.6	0.6	0.4	*	4.6	8.7	0.6
21–22	*800*	4.4	0.7	0.7	0.5	6.3	14.8	1.8
23–24	*800*	11.9	1.1	0.5	0.5	9.7	20.6	1.5
25–26	*800*	19.3	1.8	0.2	2.8	13.8	24.4	3.4
27–28	*700*	15.9	1.8	0.8	2.7	15.9	24.7	3.4
29–30	*800*	12.3	2.6	0.8	2.8	15.2	24.9	3.7
Region								
Northeast	*900*	13.5	1.8	1.4	2.4	10.0	21.1	2.1
Midwest	*1,200*	9.0	1.2	0.6	1.2	9.4	19.2	2.3
South	*1,500*	7.1	1.5	0.3	1.1	11.7	18.4	3.1
West	*1,100*	18.4	1.3	0.3	1.9	12.3	20.7	2.1
Population Density [5]								
Farm/Country	*400*	10.1	1.0	0.5	1.9	10.7	17.1	2.0
Small Town	*1,200*	7.9	1.6	0.6	1.4	8.7	14.7	4.0
Medium City	*1,200*	7.3	1.4	0.7	1.9	11.3	19.5	1.2
Large City	*1,100*	14.0	1.4	0.9	1.2	10.9	21.2	1.5
Very Large City	*800*	19.6	1.3	0.1	1.5	14.0	26.6	3.8

(Table continued on next page.)

TABLE 4-2 (cont.)
Lifetime Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Sedatives (Barbiturates) [8]	Tranquilizers [8]	Alcohol	Been Drunk [2]	Flavored Alcoholic Beverages [3]	Cigarettes	Any Vaping	Vaping Marijuana	Vaping Nicotine
Total	*4,700*	7.3	11.7	86.5	76.8	88.5	—	43.1	30.8	39.4
Gender										
Men	*1,900*	7.9	12.2	84.8	75.7	85.2	—	47.4	33.7	43.8
Women	*2,800*	7.1	11.5	87.8	78.1	90.8	—	40.3	28.9	36.5
Modal Age										
19–20	*800*	3.7	5.4	68.1	52.0	80.6	—	46.3	33.0	46.0
21–22	*800*	4.2	8.3	85.8	70.6	91.9	—	53.7	35.9	47.8
23–24	*800*	5.5	10.7	89.8	82.7	87.4	—	43.6	32.1	41.0
25–26	*800*	10.1	14.8	92.4	85.9	90.3	—	43.1	31.9	39.1
27–28	*700*	9.2	15.6	92.3	85.5	90.8	—	40.9	28.3	35.4
29–30	*800*	11.3	15.5	91.0	84.4	89.5	—	32.1	24.5	28.0
Region										
Northeast	*900*	7.2	11.6	89.3	80.4	84.0	—	45.7	34.8	40.7
Midwest	*1,200*	7.2	11.5	88.3	80.5	92.4	—	43.0	31.2	41.0
South	*1,500*	7.6	11.9	86.0	73.9	88.6	—	39.9	24.9	36.0
West	*1,100*	7.4	11.4	83.2	73.7	87.9	—	45.9	36.0	41.8
Population Density [5]										
Farm/Country	*400*	6.3	11.6	82.9	72.0	81.9	—	37.8	20.2	35.4
Small Town	*1,200*	6.3	9.6	84.2	73.7	85.6	—	42.2	28.7	39.2
Medium City	*1,200*	7.8	10.8	85.7	74.8	89.8	—	43.1	30.0	39.7
Large City	*1,100*	6.9	11.3	88.3	80.0	90.3	—	44.8	33.1	39.7
Very Large City	*800*	9.7	16.7	91.1	83.0	92.4	—	46.0	38.7	41.9

(Table continued on next page.)

TABLE 4-2 (cont.)
Lifetime Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Vaping Just Flavoring	Smokeless Tobacco [3]
Total	*4,700*	25.9	15.9
Gender			
Men	*1,900*	26.7	27.3
Women	*2,800*	25.4	8.6
Modal Age			
19–20	*800*	33.2	20.8
21–22	*800*	33.6	17.4
23–24	*800*	27.1	22.9
25–26	*800*	26.4	*
27–28	*700*	21.4	*
29–30	*800*	14.6	31.1
Region			
Northeast	*900*	25.8	7.1
Midwest	*1,200*	26.2	24.7
South	*1,500*	25.3	15.0
West	*1,100*	27.5	13.4
Population Density [5]			
Farm/Country	*400*	23.9	15.8
Small Town	*1,200*	27.0	21.3
Medium City	*1,200*	27.2	13.9
Large City	*1,100*	26.0	16.3
Very Large City	*800*	24.8	9.7

(Table continued on next page.)

FOOTNOTES FOR TABLE 4-2

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]Use of any illicit drug includes any use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders.

[2]This drug was asked about in three of the six questionnaire forms. Total *N* is approximately 2,400.

[3]This drug was asked about in one of the six questionnaire forms. Total *N* is approximately 800.

[4]This drug was asked about in five of the six questionnaire forms. Total *N* is approximately 3,900.

[5]A small town is defined as having fewer than 50,000 inhabitants; a medium city as 50,000–100,000; a large city as 100,000–500,000; and a very large city as having over 500,000. Within each level of population density, suburban and urban respondents are combined.

[6]This drug was asked about in four of the six questionnaire forms. Total *N* is approximately 3,100.

[7]This drug was asked about in two of the six questionnaire forms. Total *N* is approximately 1,600.

[8]Only drug use that was not under a doctor's orders is included here.

[9]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

TABLE 4-3
Annual Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Any Illicit Drug [1]	Any Illicit Drug other than Marijuana [1]	Marijuana	Synthetic Marijuana [3]	Inhalants [3]	Hallucinogens [5]	LSD [5]	Hallucinogens other than LSD [5]	MDMA (Ecstasy,Molly) [6]	Salvia [3]	Cocaine	Crack [4]
Total	*4,700*	45.4	19.1	42.0	1.2	1.2	7.6	4.7	5.2	4.5	0.7	6.8	0.7
Gender													
Men	*1,900*	45.7	21.7	42.7	1.5	1.9	9.5	6.3	6.3	5.1	0.7	8.7	0.9
Women	*2,800*	45.0	17.3	41.4	1.0	0.6	6.2	3.5	4.5	4.2	0.7	5.6	0.6
Modal Age													
19–20	*800*	41.8	15.3	40.2	1.6	0.6	7.4	5.1	5.1	3.6	1.0	4.0	0.4
21–22	*800*	49.2	20.0	47.2	1.9	1.9	10.6	7.5	7.3	5.4	1.1	6.1	0.9
23–24	*800*	49.0	21.2	44.5	1.4	0.9	8.8	4.8	6.4	5.2	0.6	8.7	0.8
25–26	*800*	47.3	22.2	43.9	0.5	1.4	8.2	5.4	5.2	5.1	0.7	10.0	1.9
27–28	*700*	44.8	18.5	40.9	1.1	1.0	4.9	2.9	3.3	3.9	0.2	6.4	0.4
29–30	*800*	40.2	17.6	35.2	0.7	1.2	5.5	2.2	4.0	4.1	0.5	5.4	*
Region													
Northeast	*900*	48.7	18.9	46.5	0.9	1.3	6.3	5.0	3.0	3.8	0.2	6.9	*
Midwest	*1,200*	44.9	18.2	41.9	1.1	1.4	7.0	4.2	4.8	4.1	0.6	5.8	0.7
South	*1,500*	40.6	16.7	36.2	1.1	1.2	5.6	3.7	3.7	3.6	0.8	5.2	0.2
West	*1,100*	49.6	23.7	45.8	0.9	0.7	12.0	6.3	9.5	6.8	0.6	10.1	1.8
Population Density [9]													
Farm/Country	*400*	33.5	15.4	30.1	0.6	0.6	5.3	3.2	4.1	2.4	1.4	4.3	*
Small Town	*1,200*	39.1	14.0	37.7	2.1	0.8	6.0	3.8	4.1	2.4	1.0	4.5	0.4
Medium City	*1,200*	46.5	20.0	41.2	1.1	1.9	7.0	4.2	4.7	4.4	0.6	7.1	*
Large City	*1,100*	47.6	19.1	44.4	0.8	1.3	8.9	5.5	6.4	5.0	0.5	6.9	1.0
Very Large City	*800*	55.6	27.1	51.8	0.8	0.7	10.2	6.2	6.7	8.6	0.2	11.3	2.0

(Table continued on next page.)

TABLE 4-3 (cont.)
Annual Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Other Cocaine [4]	Heroin	Heroin with a Needle [2]	Heroin without a Needle [2]	Narcotics other than Heroin [7]	OxyContin [3,7]	Vicodin [3,7]	Amphetamines [7,8]	Ritalin [3,7]	Adderall [3,7]	Methamphetamine [2]
Total	*4,700*	4.7	0.3	0.1	0.3	2.6	2.2	1.8	6.6	1.8	7.6	0.8
Gender												
Men	*1,900*	6.3	0.5	0.3	0.6	2.6	2.4	2.3	7.7	2.1	8.8	0.9
Women	*2,800*	3.9	0.2	*	*	2.5	2.0	1.5	5.8	1.6	6.9	0.7
Modal Age												
19–20	*800*	1.5	0.2	0.2	*	2.1	3.0	2.3	5.6	1.8	6.2	0.6
21–22	*800*	2.5	0.1	*	*	2.1	1.4	1.1	7.5	2.0	9.4	0.2
23–24	*800*	6.4	0.1	0.3	0.3	2.4	2.3	1.4	8.5	1.6	9.0	0.5
25–26	*800*	8.9	0.7	0.2	0.2	2.6	2.5	2.9	7.0	2.6	8.6	0.4
27–28	*700*	5.5	0.5	*	0.4	3.1	1.7	0.9	6.1	1.8	5.4	1.0
29–30	*800*	4.1	0.3	*	0.6	3.2	2.1	2.0	4.9	0.9	7.1	1.9
Region												
Northeast	*900*	3.0	0.2	0.3	0.3	1.9	2.2	0.8	7.0	1.5	9.6	0.4
Midwest	*1,200*	3.7	0.2	*	0.4	2.2	1.5	2.5	5.9	2.0	7.0	0.7
South	*1,500*	2.6	0.3	0.1	0.1	2.9	2.4	1.4	5.8	1.2	6.4	1.1
West	*1,100*	10.4	0.6	0.2	0.3	3.1	2.3	2.1	8.1	2.0	8.1	0.8
Population Density [9]												
Farm/Country	*400*	4.8	0.2	0.5	0.5	3.6	3.0	3.7	4.1	0.7	4.9	0.9
Small Town	*1,200*	2.7	0.4	0.1	0.2	2.4	1.8	1.3	5.1	0.8	5.7	1.4
Medium City	*1,200*	4.0	0.4	0.2	0.5	2.7	3.5	2.6	6.2	2.2	8.4	0.2
Large City	*1,100*	6.2	0.3	*	0.1	2.1	1.2	1.0	6.9	2.1	8.1	0.2
Very Large City	*800*	7.4	0.1	*	0.1	2.9	1.7	1.5	10.5	2.8	10.3	1.7

(Table continued on next page.)

TABLE 4-3 (cont.)
Annual Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Sedatives (Barbiturates) [7]	Tranquilizers [7]	Ketamine [2]	Alcohol	Been Drunk [3]	Flavored Alcoholic Beverages [4]	Alcoholic Beverages mixed with Energy Drinks [2]	Cigarettes	Tobacco using a Hookah [3]	Small Cigars [2]	Any Vaping	Vaping Marijuana
Total	*4,700*	2.0	3.4	1.3	82.2	60.7	68.0	25.8	21.0	8.8	12.9	30.6	20.0
Gender													
Men	*1,900*	2.0	3.2	1.3	81.1	62.7	63.1	32.7	24.7	10.2	20.9	35.2	22.6
Women	*2,800*	2.1	3.6	1.4	83.2	60.0	71.3	21.6	18.2	7.9	7.6	27.7	18.2
Modal Age													
19–20	*800*	2.0	2.7	1.5	64.0	44.7	74.2	17.0	19.6	9.6	7.8	36.2	24.5
21–22	*800*	1.4	3.2	1.0	82.9	59.2	81.7	24.2	22.5	11.0	13.9	42.4	24.0
23–24	*800*	2.4	3.6	1.2	85.7	65.3	72.6	27.5	21.4	9.2	13.0	28.4	19.3
25–26	*800*	2.4	4.3	0.9	88.9	68.6	63.1	33.3	23.6	9.4	16.8	31.3	19.7
27–28	*700*	1.9	3.4	1.1	87.0	67.6	64.2	25.6	20.3	8.8	15.7	28.5	18.2
29–30	*800*	2.2	3.2	2.3	85.3	58.6	55.1	25.4	18.1	4.9	9.7	18.3	14.7
Region													
Northeast	*900*	1.7	3.5	2.2	85.2	65.8	65.1	22.9	18.8	9.4	13.7	36.0	23.1
Midwest	*1,200*	1.7	3.0	0.8	84.5	65.1	72.3	35.8	21.5	10.0	16.3	30.3	20.5
South	*1,500*	2.4	3.7	0.9	81.0	56.9	67.0	20.7	21.3	7.4	10.6	27.0	15.2
West	*1,100*	2.3	3.1	1.1	79.1	56.8	67.0	23.6	20.3	8.7	11.5	32.8	24.0
Population Density [9]													
Farm/Country	*400*	1.9	3.3	1.5	74.7	54.0	67.1	23.3	25.6	3.3	11.1	25.9	14.0
Small Town	*1,200*	1.3	2.5	0.5	79.2	57.3	63.2	27.7	20.5	9.9	11.3	31.6	18.4
Medium City	*1,200*	2.5	3.2	1.3	81.4	56.7	70.9	19.6	20.4	7.7	10.3	29.1	18.8
Large City	*1,100*	1.9	3.4	1.5	85.3	64.6	72.7	29.7	19.2	9.9	16.0	30.8	20.7
Very Large City	*800*	2.8	5.3	2.4	88.2	69.6	66.1	28.9	21.3	10.7	16.0	34.9	26.8

(Table continued on next page.)

TABLE 4-3 (cont.)
Annual Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Vaping Nicotine	Vaping Just Flavoring	Dissolvable Tobacco [2]	Snus [2]
Total	*4,700*	21.7	8.4	1.1	3.9
Gender					
Men	*1,900*	25.6	9.5	1.7	8.4
Women	*2,800*	19.1	7.7	0.8	1.1
Modal Age					
19–20	*800*	31.6	14.1	2.3	4.2
21–22	*800*	32.3	11.5	2.7	5.0
23–24	*800*	21.0	7.4	0.5	1.4
25–26	*800*	19.7	7.3	0.3	6.8
27–28	*700*	17.0	6.4	0.8	3.0
29–30	*800*	10.0	4.2	0.7	2.7
Region					
Northeast	*900*	23.3	8.0	*	2.5
Midwest	*1,200*	23.4	9.5	2.0	6.5
South	*1,500*	19.7	8.2	1.4	3.1
West	*1,100*	22.5	8.1	0.2	2.4
Population Density [9]					
Farm/Country	*400*	19.6	7.3	1.5	5.5
Small Town	*1,200*	23.4	9.3	3.4	6.8
Medium City	*1,200*	21.9	9.1	*	1.9
Large City	*1,100*	20.7	7.9	0.5	4.3
Very Large City	*800*	22.5	7.6	0.5	1.5

FOOTNOTES FOR TABLE 4-3

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[1]Use of any illicit drug includes any use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders.

[2]This drug was asked about in two of the six questionnaire forms. Total *N* is approximately 1,600.

[3]This drug was asked about in three of the six questionnaire forms. Total *N* is approximately 2,400.

[4]This drug was asked about in one of the six questionnaire forms. Total *N* is approximately 800.

[5]This drug was asked about in five of the six questionnaire forms. Total *N* is approximately 3,900.

[6]This drug was asked about in four of the six questionnaire forms. Total *N* is approximately 3,100.

[7]Only drug use that was not under a doctor's orders is included here.

[8]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

[9]A small town is defined as having fewer than 50,000 inhabitants; a medium city as 50,000–100,000; a large city as 100,000–500,000; and a very large city as having over 500,000. Within each level of population density, suburban and urban respondents are combined.

TABLE 4-4
Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Any Illicit Drug [1]	Any Illicit Drug other than Marijuana [1]	Marijuana	Inhalants [2]	Hallucinogens [4]	LSD [4]	Hallucinogens other than LSD [4]	MDMA (Ecstasy,Molly) [6]	Cocaine	Crack [3]
Total	*4,700*	28.3	7.8	26.8	0.4	2.4	1.0	1.6	1.0	1.9	0.2
Gender											
Men	*1,900*	29.4	9.1	28.3	0.9	3.5	1.6	2.2	1.2	2.2	0.2
Women	*2,800*	27.4	6.8	25.5	*	1.6	0.6	1.2	0.9	1.6	0.2
Modal Age											
19–20	*800*	24.7	6.4	23.8	*	2.4	1.3	1.6	0.9	1.4	0.4
21–22	*800*	29.6	8.0	29.3	0.6	2.6	1.4	1.5	1.0	2.4	*
23–24	*800*	31.4	9.8	28.9	0.7	4.0	1.4	2.8	0.9	2.3	*
25–26	*800*	30.9	8.6	29.1	0.2	1.8	0.7	1.5	1.2	2.4	0.4
27–28	*700*	27.5	7.3	26.2	0.4	1.3	0.7	0.5	0.8	1.6	0.4
29–30	*800*	25.6	6.6	23.3	0.4	2.1	0.6	1.5	1.0	1.3	*
Region											
Northeast	*900*	28.1	5.8	28.6	0.3	1.6	1.3	0.5	1.0	1.6	*
Midwest	*1,200*	27.1	6.9	25.3	0.4	2.6	1.0	1.6	1.0	1.1	0.3
South	*1,500*	25.0	7.4	22.6	0.5	1.3	0.9	0.7	0.9	1.5	*
West	*1,100*	34.9	10.6	32.5	0.1	4.0	1.0	3.6	0.9	3.4	0.5
Population Density [5]											
Farm/Country	*400*	19.7	6.7	18.9	*	1.9	1.1	1.2	0.4	1.5	*
Small Town	*1,200*	24.9	6.0	23.6	0.3	1.6	0.6	1.1	0.4	1.3	0.4
Medium City	*1,200*	27.8	7.8	25.6	0.7	2.3	1.2	1.3	1.4	1.8	*
Large City	*1,100*	29.6	7.9	28.2	0.5	2.9	1.2	2.1	1.2	2.3	0.3
Very Large City	*800*	37.1	10.5	34.9	*	2.8	0.8	2.1	1.3	2.9	*

(Table continued on next page.)

TABLE 4-4 (cont.)
Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Other Cocaine [3]	Heroin	Heroin With Needle [7]	Heroin Without Needle [7]	Narcotics other than Heroin [8]	Amphetamines [8,9]	Methamphetamine [7]
Total	*4,700*	1.2	0.2	0.1	0.2	0.9	2.0	0.2
Gender								
Men	*1,900*	0.9	0.3	0.3	0.5	1.0	2.6	0.3
Women	*2,800*	1.5	0.1	*	*	0.8	1.5	0.2
Modal Age								
19–20	*800*	*	0.2	0.2	*	0.9	1.5	0.4
21–22	*800*	1.2	*	*	*	0.4	2.6	*
23–24	*800*	3.0	0.1	0.3	0.3	0.7	2.7	*
25–26	*800*	1.2	0.3	0.2	0.2	1.4	2.2	*
27–28	*700*	*	0.3	*	0.4	0.7	1.8	0.2
29–30	*800*	2.0	0.1	*	0.4	1.0	1.1	0.6
Region								
Northeast	*900*	0.3	0.2	0.3	0.3	0.5	1.3	*
Midwest	*1,200*	0.6	0.1	*	0.2	1.0	1.6	0.1
South	*1,500*	0.9	0.2	0.1	0.1	1.1	2.6	0.4
West	*1,100*	3.1	0.2	0.2	0.3	0.7	2.0	0.1
Population Density [5]								
Farm/Country	*400*	0.5	0.2	0.5	0.5	1.7	1.6	0.5
Small Town	*1,200*	1.1	0.2	0.1	*	1.2	1.5	0.4
Medium City	*1,200*	0.7	0.2	0.2	0.5	1.0	2.1	*
Large City	*1,100*	2.7	0.2	*	0.1	0.3	1.8	*
Very Large City	*800*	0.8	0.1	*	0.1	0.6	3.0	0.4

(Table continued on next page.)

TABLE 4-4 (cont.)
Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Sedatives (Barbiturates) [8]	Tranquilizers [8]	Alcohol	Been Drunk [2]	Flavored Alcoholic Beverages [3]	Cigarettes	Large Cigars [3]	Flavored Little Cigars [3]	Regular Little Cigars [3]
Total	*4,700*	0.8	1.0	64.7	30.8	35.9	9.5	2.6	4.6	2.8
Gender										
Men	*1,900*	0.7	0.9	66.4	34.4	32.7	10.6	5.7	5.5	4.5
Women	*2,800*	0.9	1.0	63.6	28.8	38.1	8.7	0.7	4.0	1.7
Modal Age										
19–20	*800*	1.1	0.4	42.4	19.3	33.4	8.1	0.3	4.7	5.0
21–22	*800*	0.5	0.9	64.6	33.0	52.7	7.4	5.4	7.4	4.3
23–24	*800*	1.0	1.0	69.4	34.3	37.6	10.0	3.1	4.0	3.3
25–26	*800*	1.1	1.5	72.7	35.3	34.3	10.5	3.2	1.6	1.0
27–28	*700*	0.7	0.9	69.7	33.8	26.9	10.2	3.0	5.7	1.5
29–30	*800*	0.6	1.2	69.9	29.1	32.1	10.7	*	4.1	1.1
Region										
Northeast	*900*	0.6	0.6	68.3	32.7	31.6	8.2	0.9	5.0	2.4
Midwest	*1,200*	0.7	1.4	67.4	34.3	40.8	10.6	2.0	4.7	1.2
South	*1,500*	1.0	1.0	62.9	26.8	36.2	9.8	1.3	4.3	2.4
West	*1,100*	0.8	0.8	61.8	29.6	33.4	8.1	6.5	4.5	5.5
Population Density [5]										
Farm/Country	*400*	0.7	0.8	54.6	27.1	37.7	14.7	3.7	7.2	3.7
Small Town	*1,200*	0.6	1.0	60.0	27.5	34.4	10.5	2.7	4.3	1.8
Medium City	*1,200*	1.3	1.3	64.0	29.6	39.1	9.2	1.5	5.1	1.6
Large City	*1,100*	0.6	0.7	69.4	32.9	38.4	7.1	4.4	4.0	2.5
Very Large City	*800*	0.8	1.0	72.5	35.0	30.6	8.1	1.0	3.2	6.5

(Table continued on next page.)

TABLE 4-4 (cont.)
Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Any Vaping	Vaping Marijuana	Vaping Nicotine	Vaping Just Flavoring	Smokeless Tobacco [3]
Total	*4,700*	18.9	10.7	13.5	3.9	4.2
Gender						
Men	*1,900*	21.6	12.1	16.1	4.9	8.8
Women	*2,800*	17.2	9.8	11.9	3.2	1.3
Modal Age						
19–20	*800*	23.9	13.6	20.6	7.5	6.2
21–22	*800*	26.2	12.6	20.3	4.4	3.3
23–24	*800*	17.6	11.3	13.1	3.2	1.9
25–26	*800*	19.1	10.1	12.2	3.3	*
27–28	*700*	16.7	9.4	9.7	3.4	*
29–30	*800*	10.6	7.9	6.0	2.0	11.9
Region						
Northeast	*900*	20.6	11.3	12.8	3.1	0.4
Midwest	*1,200*	18.7	9.8	14.7	4.3	7.4
South	*1,500*	14.6	7.0	12.0	4.0	3.3
West	*1,100*	24.0	16.4	15.1	4.2	4.0
Population Density [5]						
Farm/Country	*400*	17.2	6.9	13.5	4.2	1.5
Small Town	*1,200*	20.0	10.2	15.0	5.0	8.3
Medium City	*1,200*	18.0	9.9	13.7	4.0	0.7
Large City	*1,100*	18.6	11.0	12.3	2.8	6.8
Very Large City	*800*	20.0	14.6	13.0	3.9	0.5

(Table continued on next page.)

FOOTNOTES FOR TABLE 4-4

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

[1]Use of any illicit drug includes any use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders.

[2]This drug was asked about in three of the six questionnaire forms. Total *N* is approximately 2,400.

[3]This drug was asked about in one of the six questionnaire forms. Total *N* is approximately 800.

[4]This drug was asked about in five of the six questionnaire forms. Total *N* is approximately 3,900.

[5]A small town is defined as having fewer than 50,000 inhabitants; a medium city as 50,000–100,000; a large city as 100,000–500,000; and a very large city as having over 500,000. Within each level of population density, suburban and urban respondents are combined.

[6]This drug was asked about in four of the six questionnaire forms. Total *N* is approximately 3,100.

[7]This drug was asked about in two of the six questionnaire forms. Total *N* is approximately 1,600.

[8]Only drug use that was not under a doctor's orders is included here.

[9]Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

TABLE 4-5
Thirty-Day Prevalence of Daily Use [1] of Various Types of Drugs by Subgroups among Respondents of Modal Ages 19–30, 2020

(Entries are percentages.)

	Approximate Weighted N	Marijuana Daily	Alcohol Daily	Alcohol: 5+ Drinks in a Row in Last 2 Weeks	Alcohol: 10+ Drinks in a Row in Last 2 Weeks [3]	Alcohol: 15+ Drinks in a Row in Last 2 Weeks [4]	Cigarettes Daily	Cigarettes: 1/2 Pack+ per Day	Smokeless Tobacco [4]
Total	*4,700*	9.8	5.3	28.0	12.3	2.8	5.3	2.8	0.8
Gender									
Men	*1,900*	11.8	7.7	34.3	16.6	5.2	5.3	3.2	1.9
Women	*2,800*	8.2	3.8	23.7	9.1	1.1	5.3	2.6	0.2
Modal Age:									
19–20	*800*	7.7	1.3	17.2	9.5	2.4	3.4	1.0	4.4
21–22	*800*	11.9	3.1	31.4	15.1	4.0	3.7	1.2	0.0
23–24	*800*	10.8	4.6	30.6	11.9	3.0	5.2	2.8	0.4
25–26	*800*	9.9	7.8	31.5	15.5	2.5	6.0	3.1	0.0
27–28	*700*	11.0	6.9	30.5	12.0	2.0	6.6	4.6	0.0
29–30	*800*	7.5	8.2	27.2	10.6	3.2	6.8	4.0	0.0
Region									
Northeast	*900*	10.1	5.1	27.9	10.1	0.0	4.3	2.7	0.0
Midwest	*1,200*	8.9	4.9	31.1	13.5	4.9	6.3	2.8	0.5
South	*1,500*	8.5	5.6	26.9	12.5	3.7	6.0	3.5	0.2
West	*1,100*	12.4	5.5	26.5	12.3	1.1	3.3	1.4	2.1
Population Density [2]									
Farm/Country	*400*	9.0	4.5	26.0	9.5	4.4	9.6	6.5	1.5
Small Town	*1,200*	8.7	4.1	25.7	11.5	4.5	6.2	3.4	2.7
Medium City	*1,200*	9.3	5.6	26.8	12.8	4.0	5.1	2.5	0.0
Large City	*1,100*	10.1	5.8	29.5	12.8	0.6	3.6	1.6	0.0
Very Large City	*800*	12.0	6.5	32.1	12.9	0.8	3.6	1.2	0.5

Source. The Monitoring the Future study, the University of Michigan.

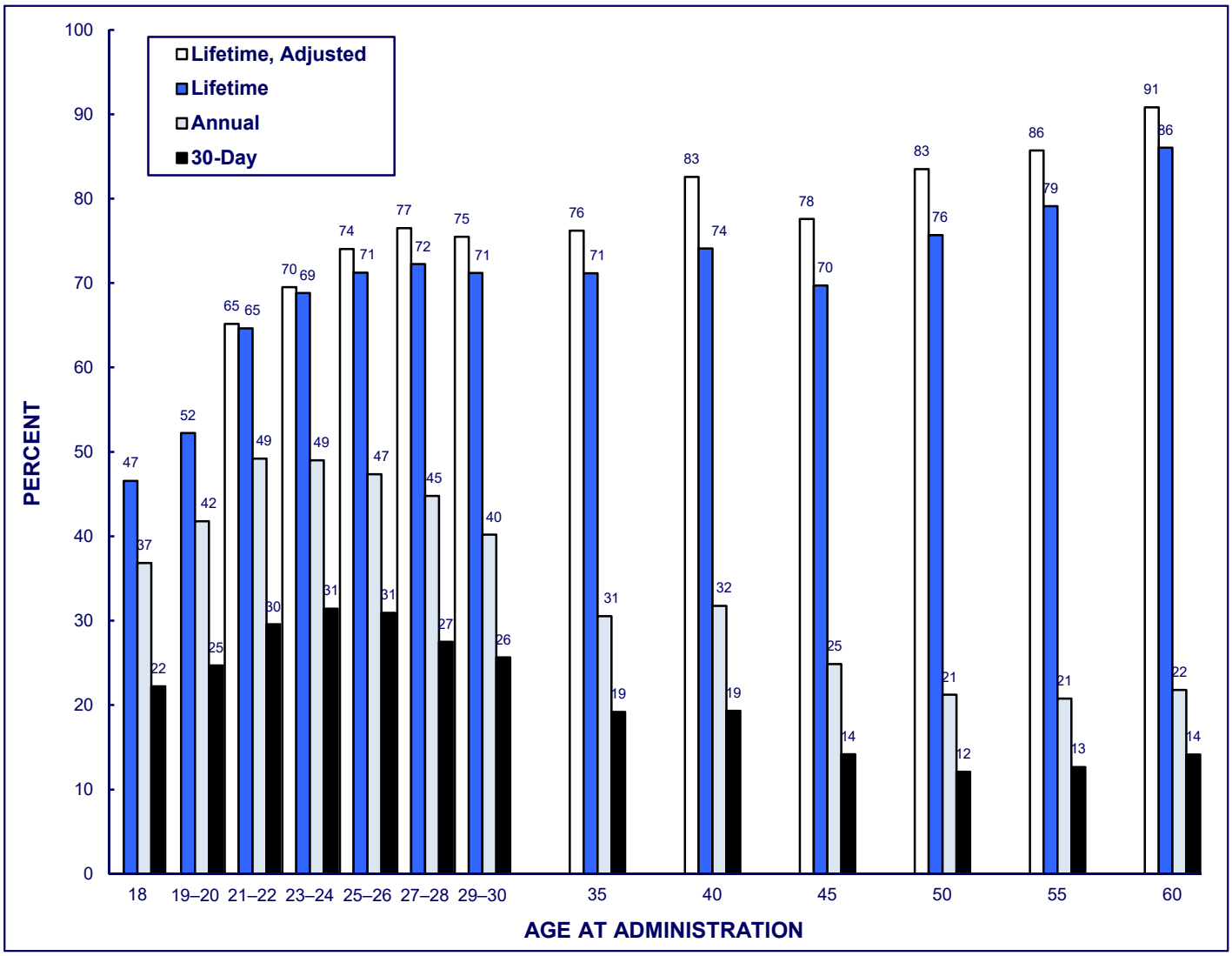
[1]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes, measured as actual daily use, and 5+ drinks, measured as having five or more drinks in a row in the last two weeks.

[2]A small town is defined as having fewer than 50,000 inhabitants; a medium city as 50,000–100,000; a large city as 100,000–500,000; and a very large city as having over 500,000. Within each level of population density, suburban and urban respondents are combined.

[3]This drug was asked about in five of the six questionnaire forms. Total *N* is approximately 3,900.

[4]This drug was asked about in one of the six questionnaire forms. Total *N* is approximately 800.

FIGURE 4-1
ANY ILLICIT DRUG[1]
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020

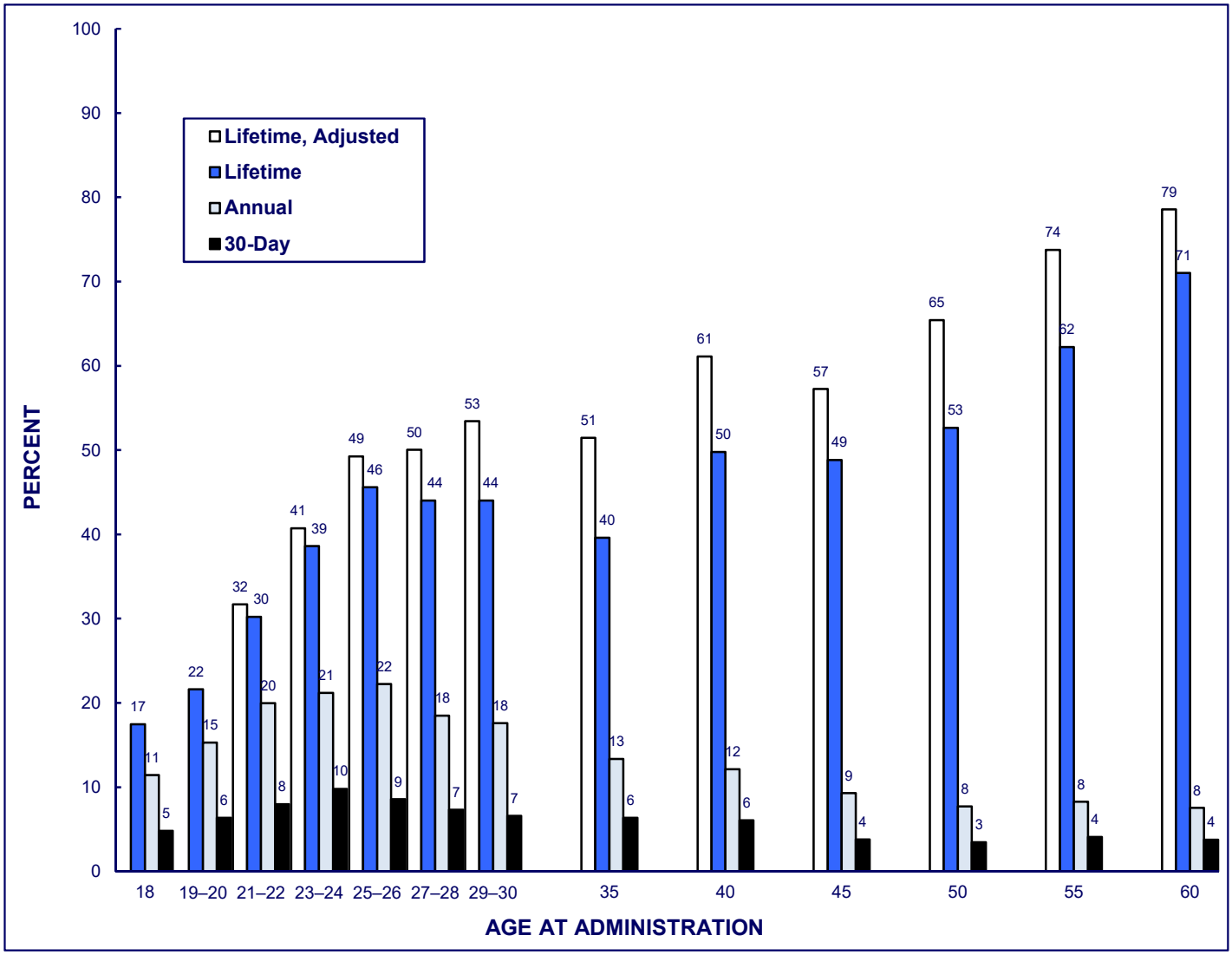


Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]The questions on hallucinogen use are not included in the age 55 or age 60 questionnaires. Therefore, the data presented here include hallucinogens for ages 18 to 50, but not for ages 55 and 60.

FIGURE 4-2
ANY ILLICIT DRUG OTHER THAN MARIJUANA[1]
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020

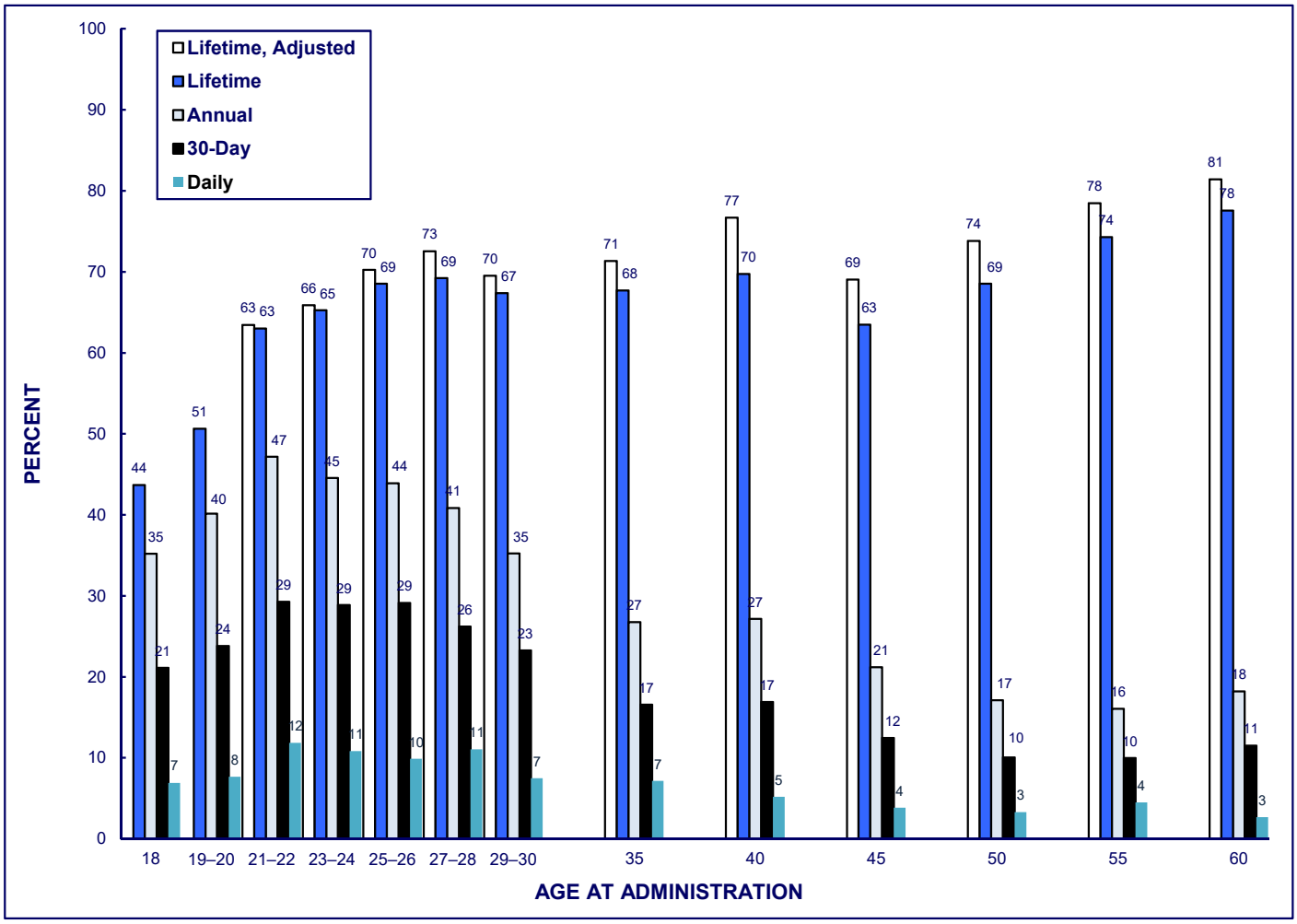


Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]The questions on hallucinogen use are not included in the age 55 or age 60 questionnaires. Therefore, the data presented here include hallucinogens for ages 18 to 50, but not for ages 55 and 60.

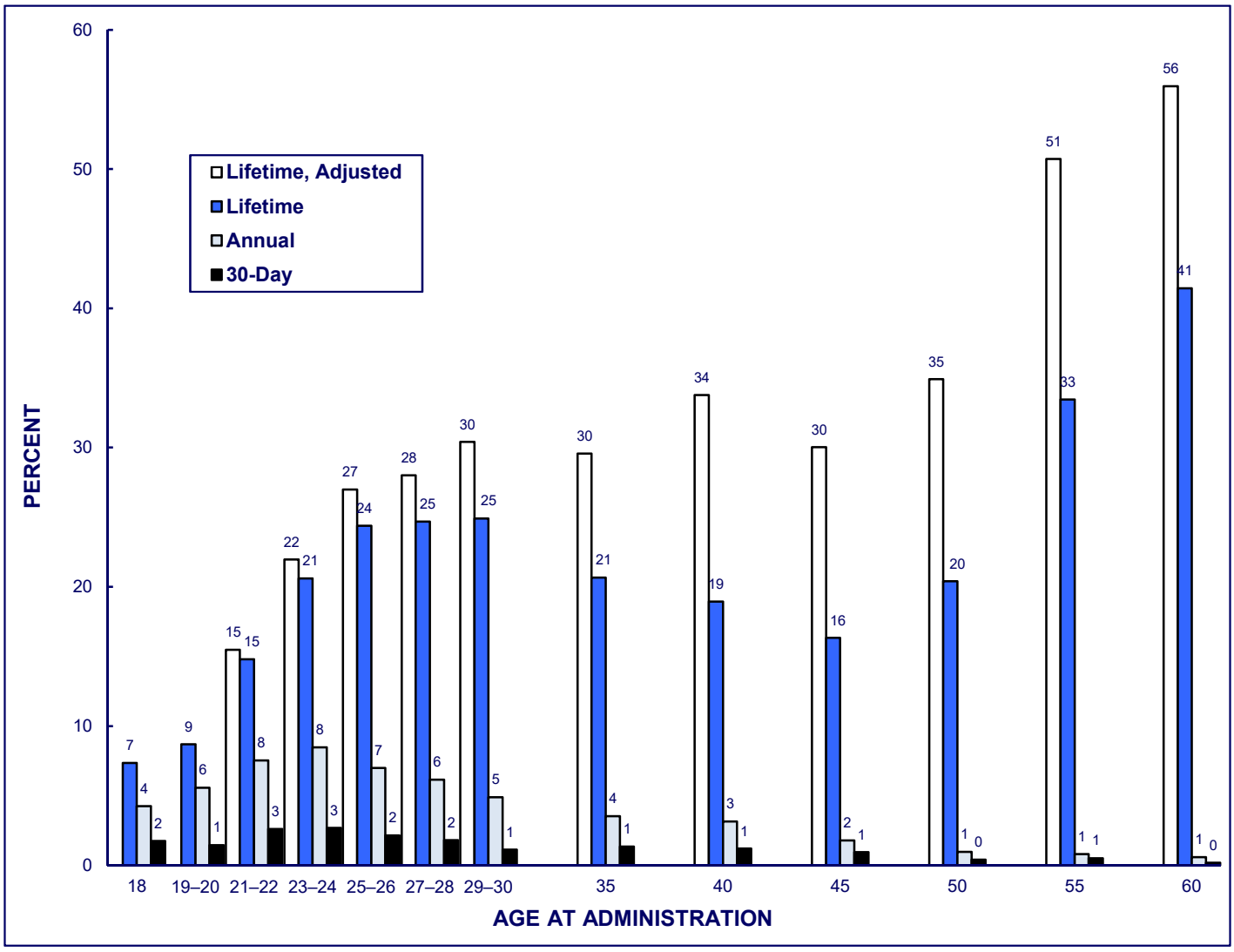
FIGURE 4-3
MARIJUANA
Lifetime, Annual, 30-Day, and Daily Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding some bars with the same number may have uneven height.

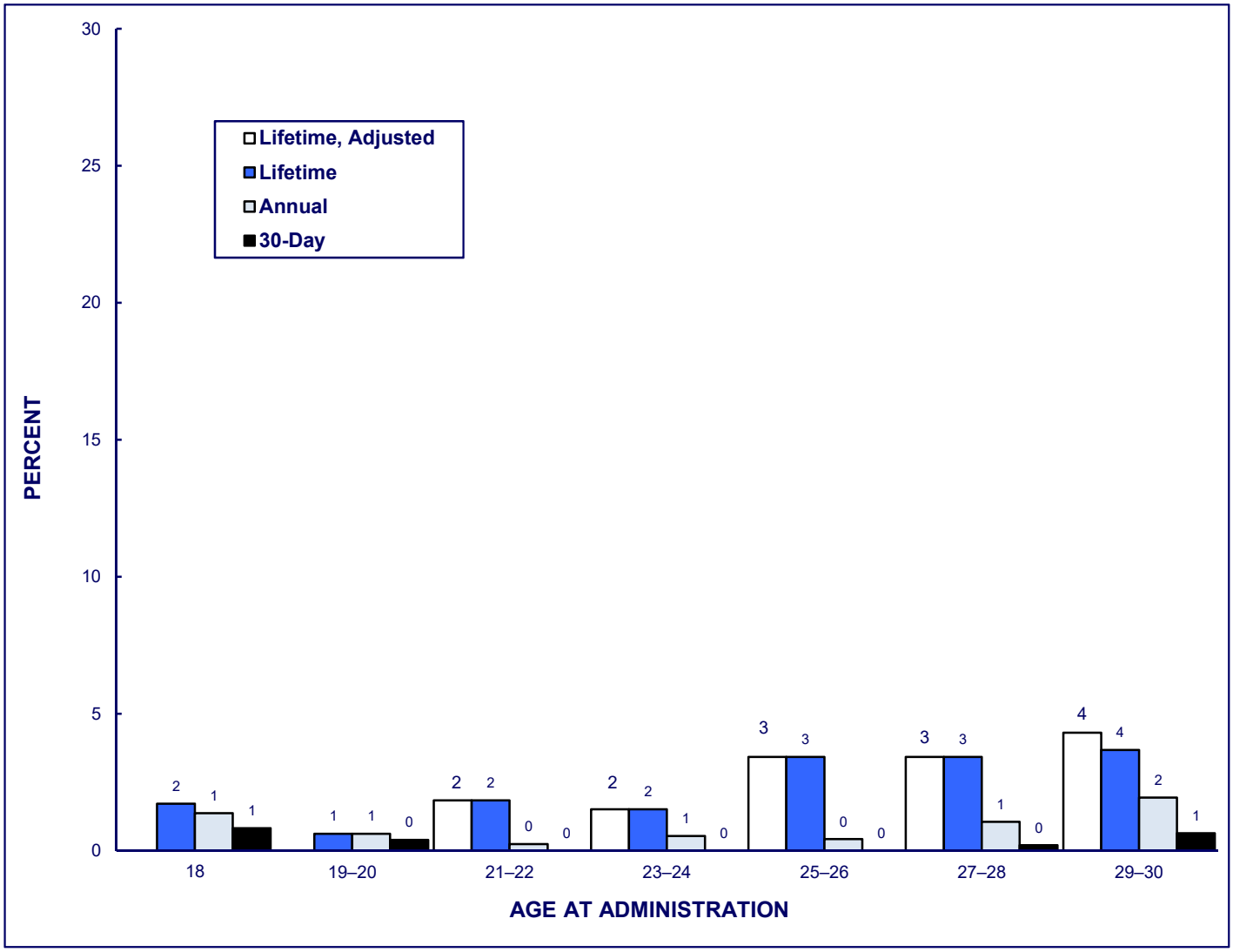
FIGURE 4-4
AMPHETAMINES
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

FIGURE 4-5
METHAMPHETAMINE
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [1] by Age Group, 2020

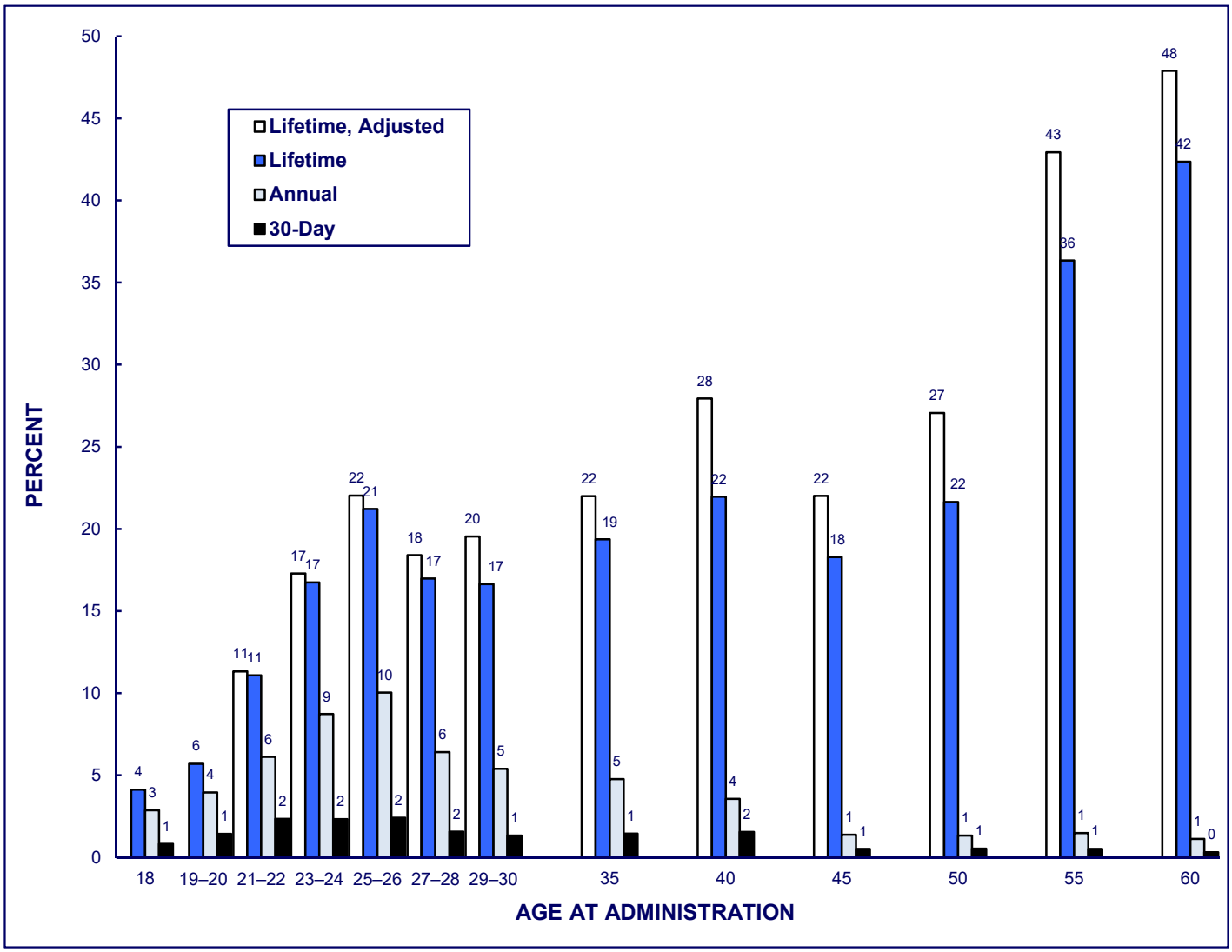


Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]Questions about the use of methamphetamines were not included in the questionnaires for 35- to 60-year-olds.

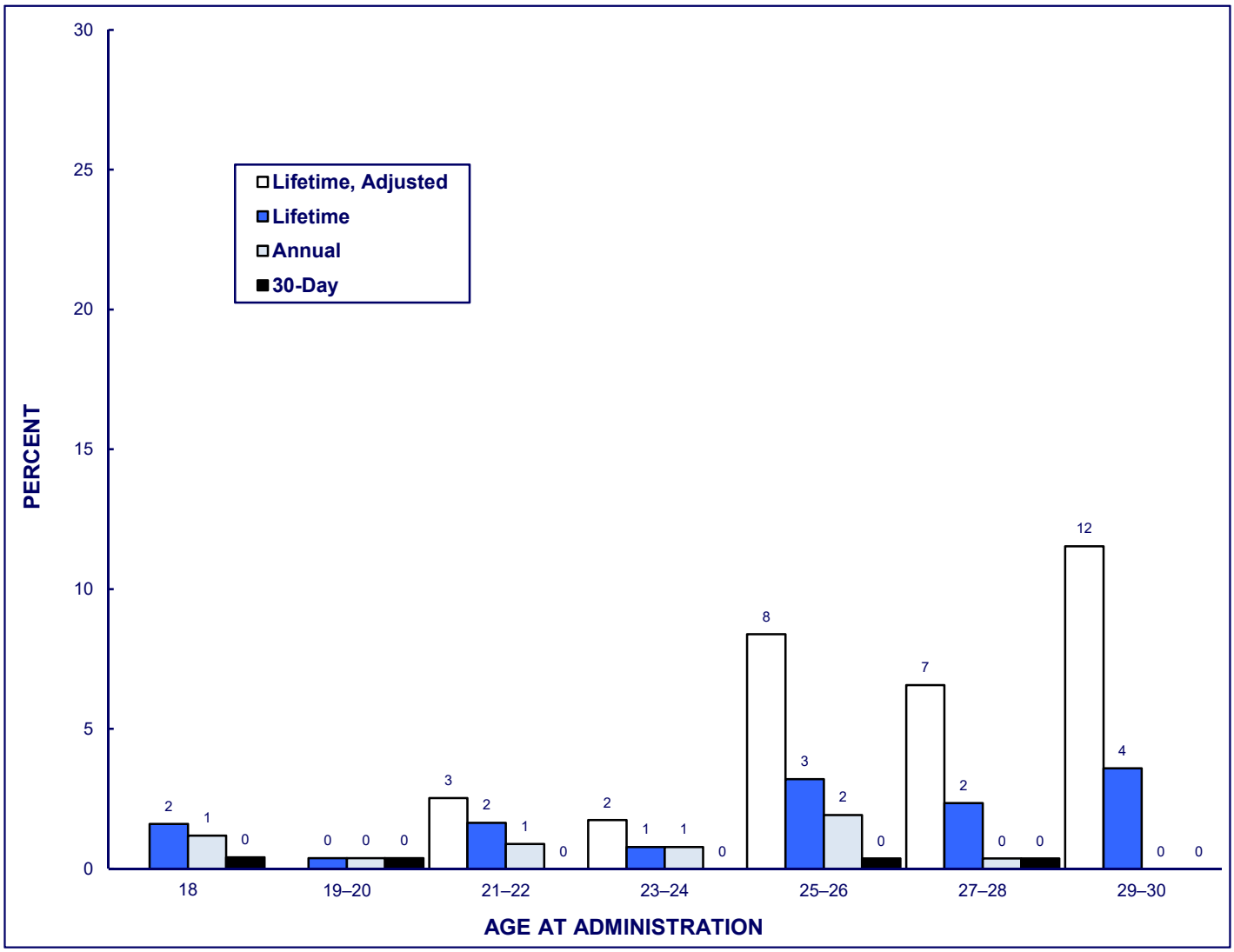
FIGURE 4-6
COCAINE
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding some bars with the same number may have uneven height.

FIGURE 4-7
CRACK COCAINE
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [1] by Age Group, 2020

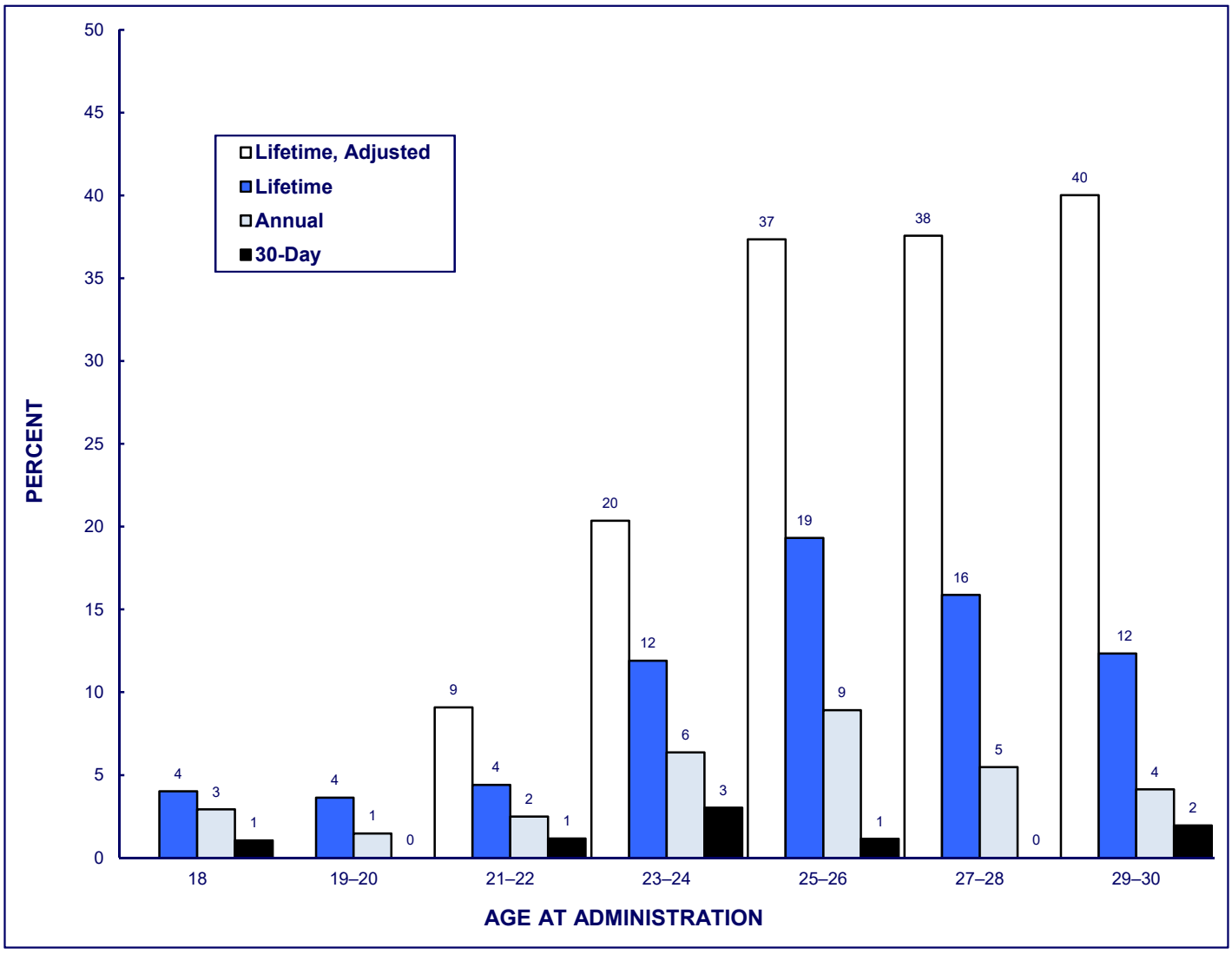


Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]Questions about the use of crack were not included in the questionnaires for 35- to 60-year-olds.

FIGURE 4-8
OTHER COCAINE
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [1] by Age Group, 2020

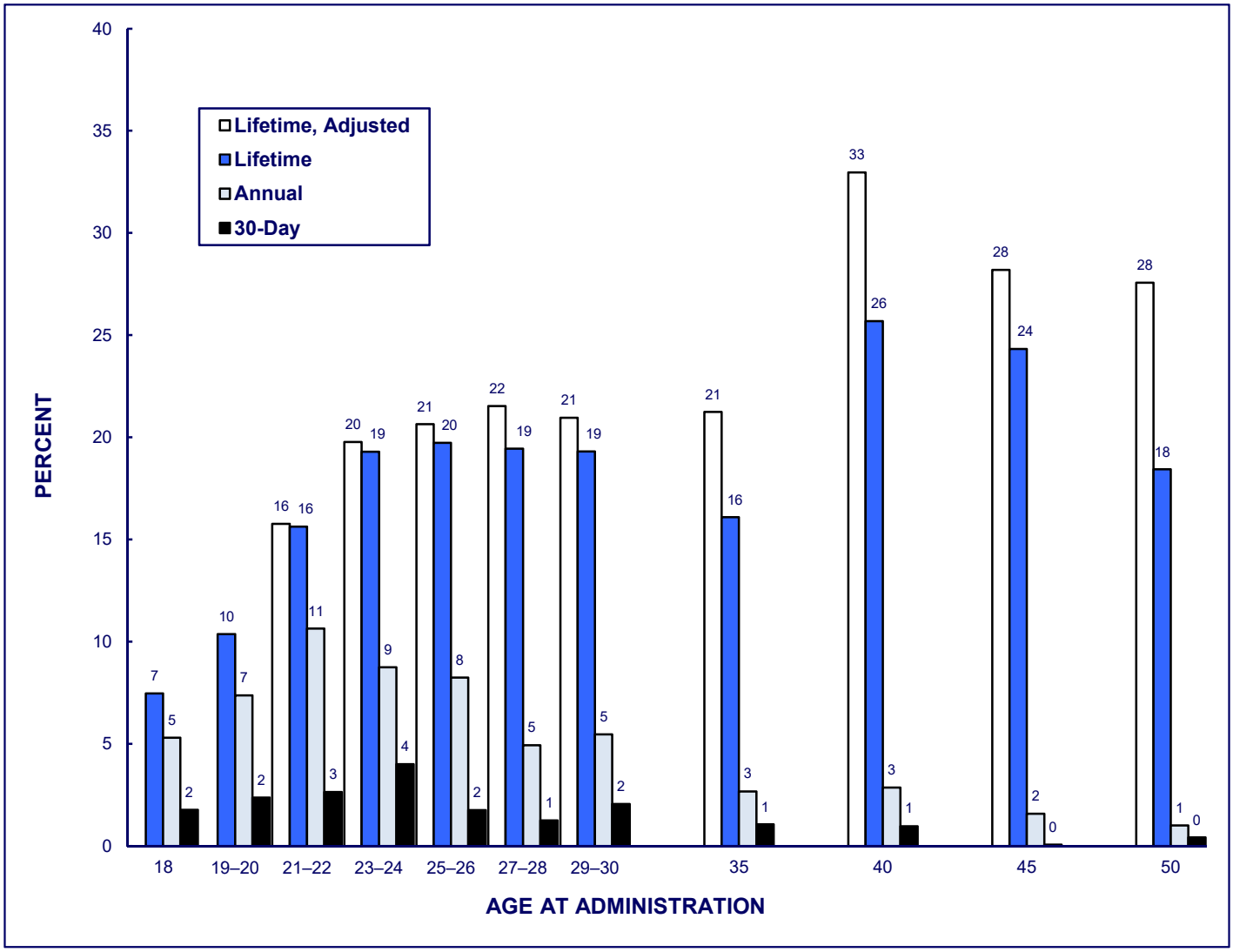


Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]Questions about the use of other cocaine were not included in the questionnaires for 35- to 60-year-olds.

FIGURE 4-9
HALLUCINOGENS [1]
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 50[2] by Age Group, 2020



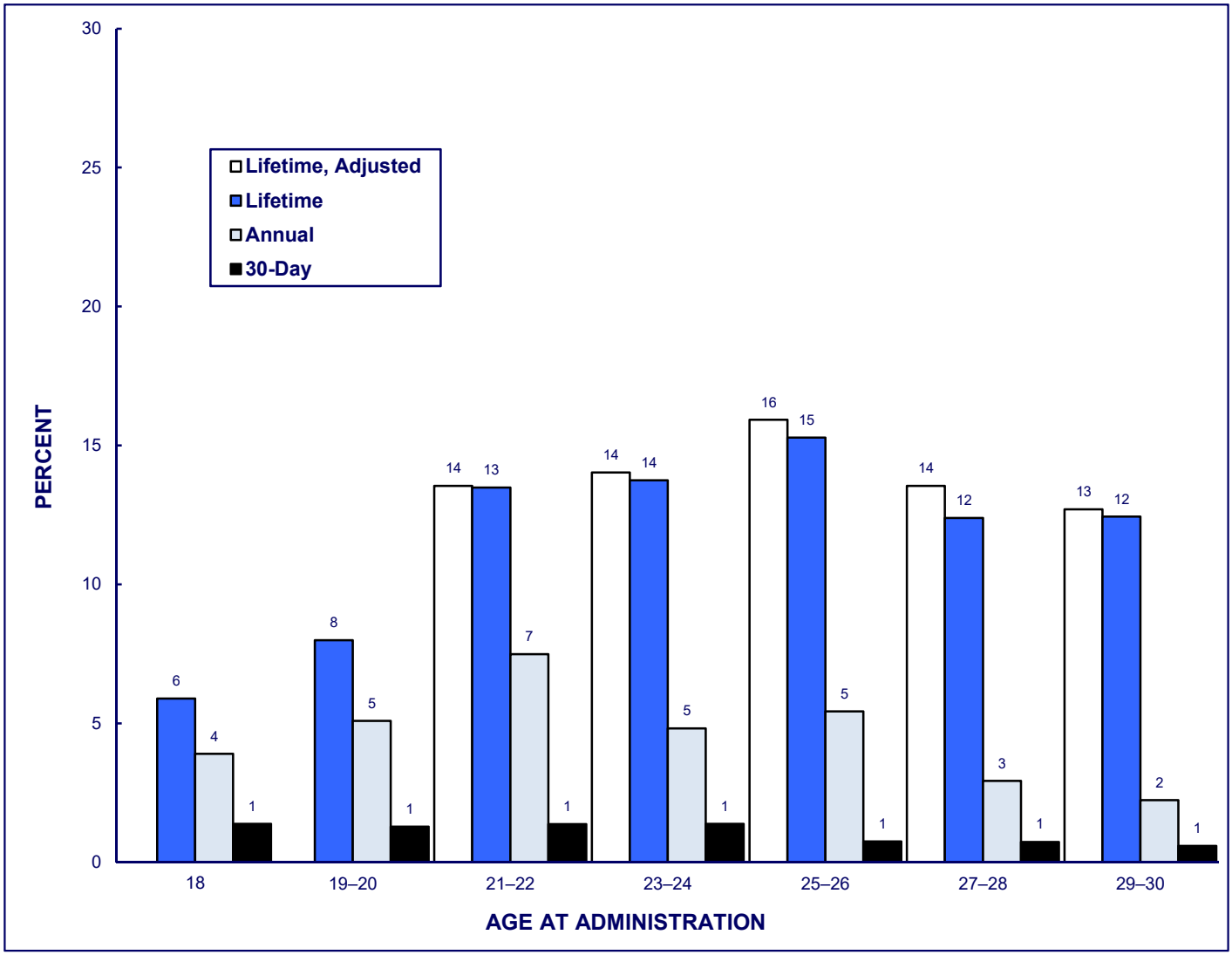
Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]Unadjusted for the possible underreporting of PCP.

[2]Questions about the use of hallucinogens were not included in the questionnaires for 55- and 60-year-olds.

FIGURE 4-10
LSD
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [1] by Age Group, 2020



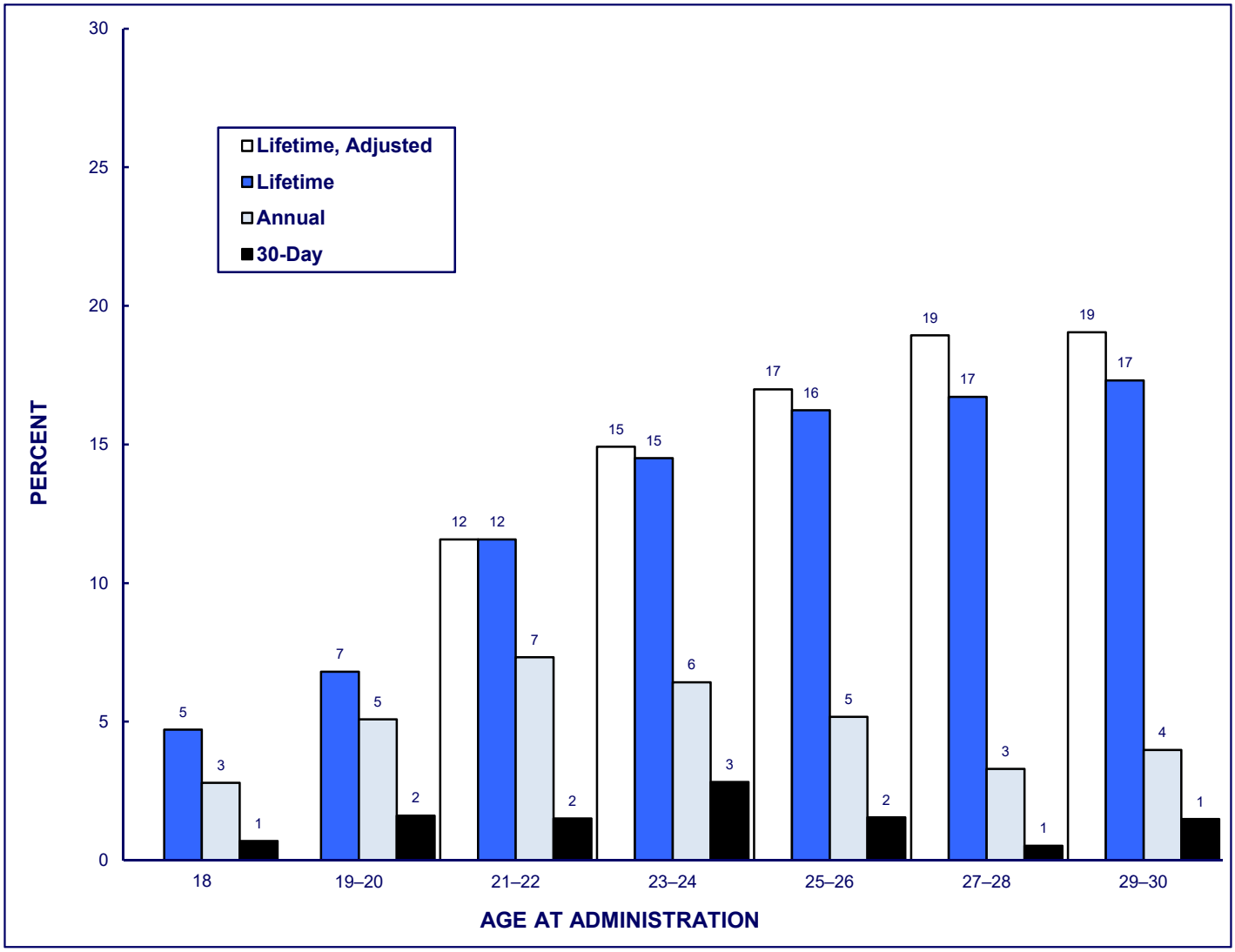
Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

Due to rounding, some bars with the same number may have uneven height.

[1]Questions about the use of LSD were not included in the questionnaires for 35- to 60-year-olds.

FIGURE 4-11
HALLUCINOGENS OTHER THAN LSD [1]
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [2] by Age Group, 2020



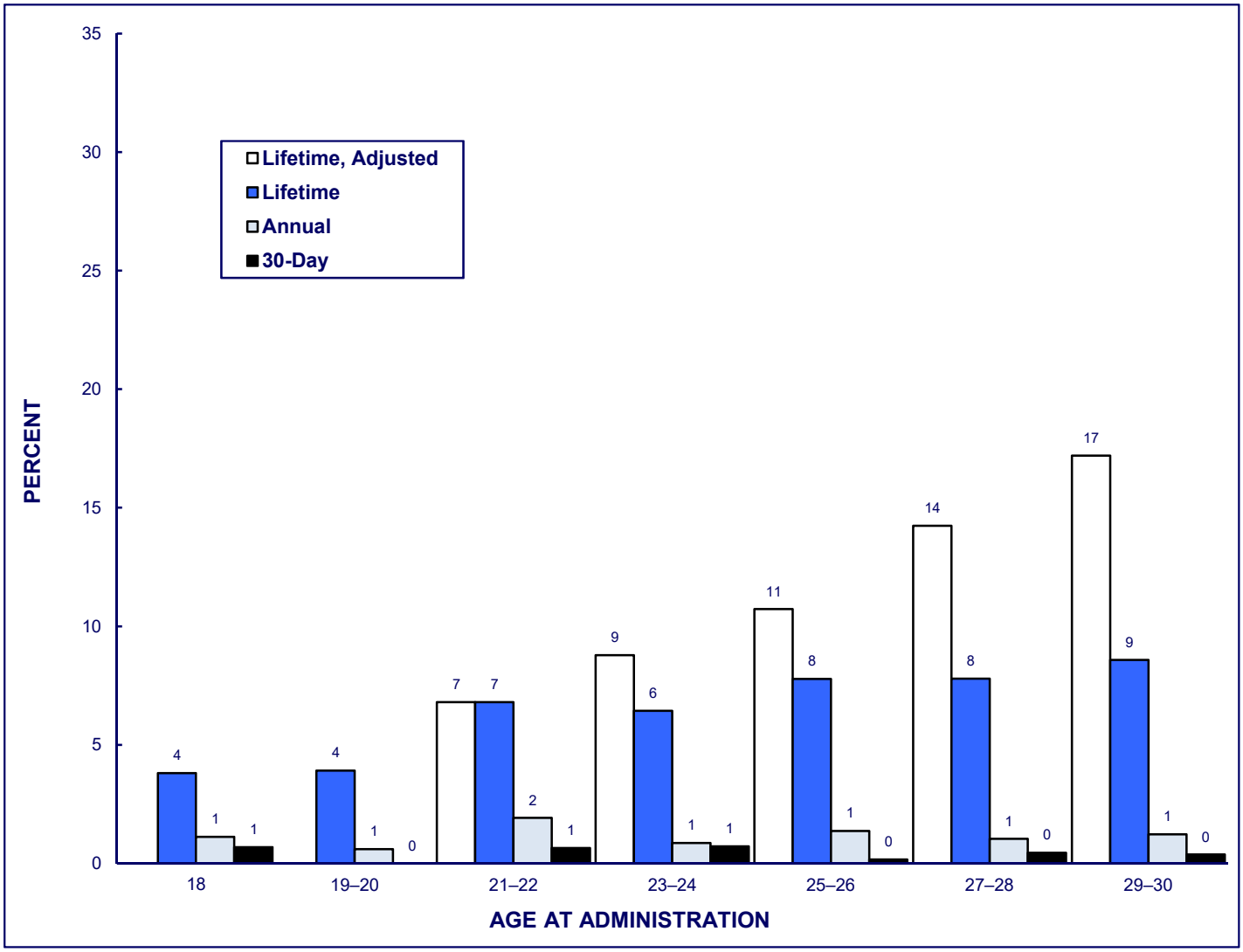
Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]Unadjusted for the possible underreporting of PCP.

[2]Questions about the use of hallucinogens other than LSD were not included in the questionnaires for 35- to 60-year-olds.

FIGURE 4-12
INHALANTS [1]
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [2] by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

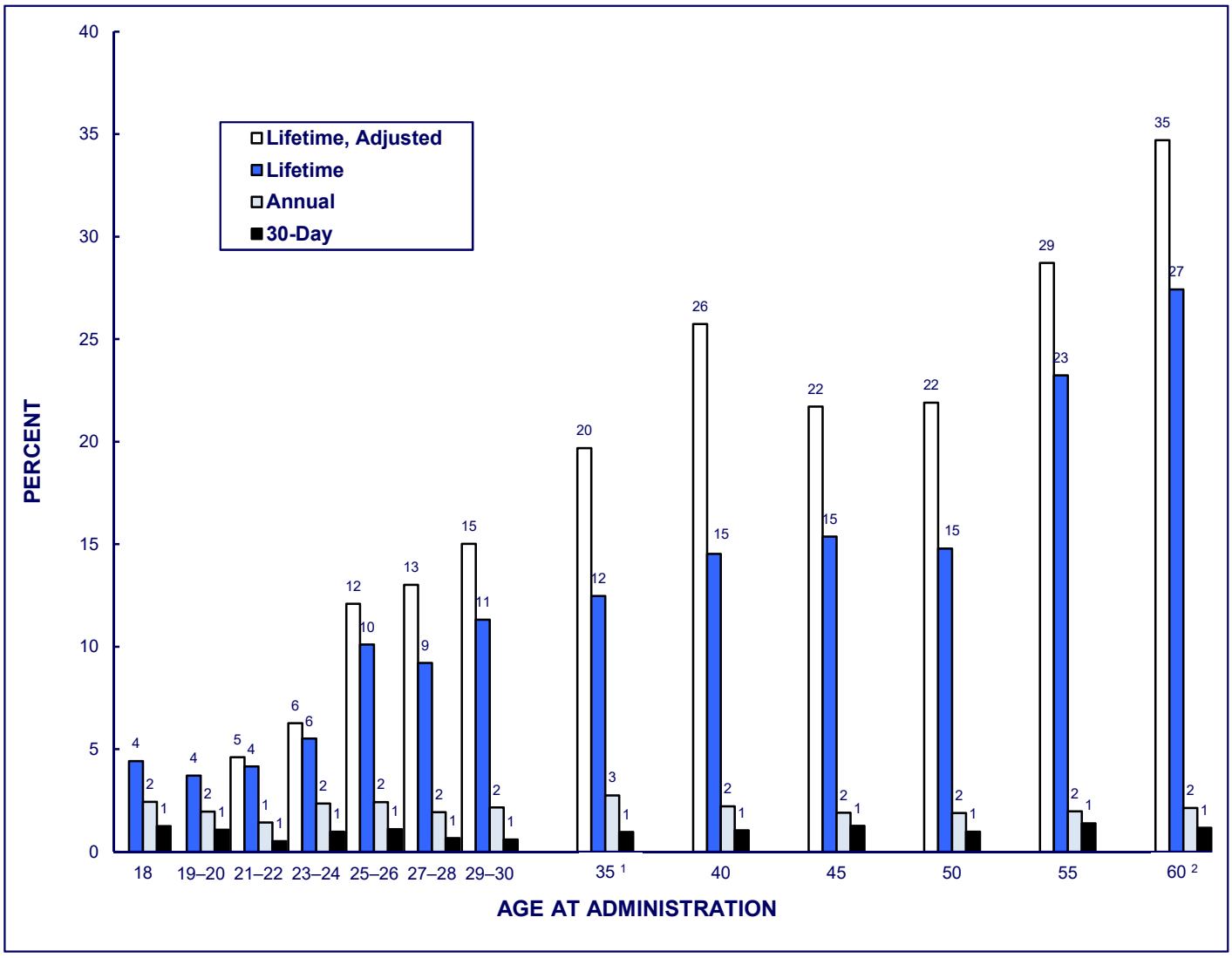
Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

Due to rounding some, bars with the same number may have uneven height.

[1]Unadjusted for the possible underreporting of amyl and butyl nitrites.

[2]Questions about the use of inhalants were not included in the questionnaires for 35- to 60-year-olds.

FIGURE 4-13
SEDATIVES (BARBITURATES)
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

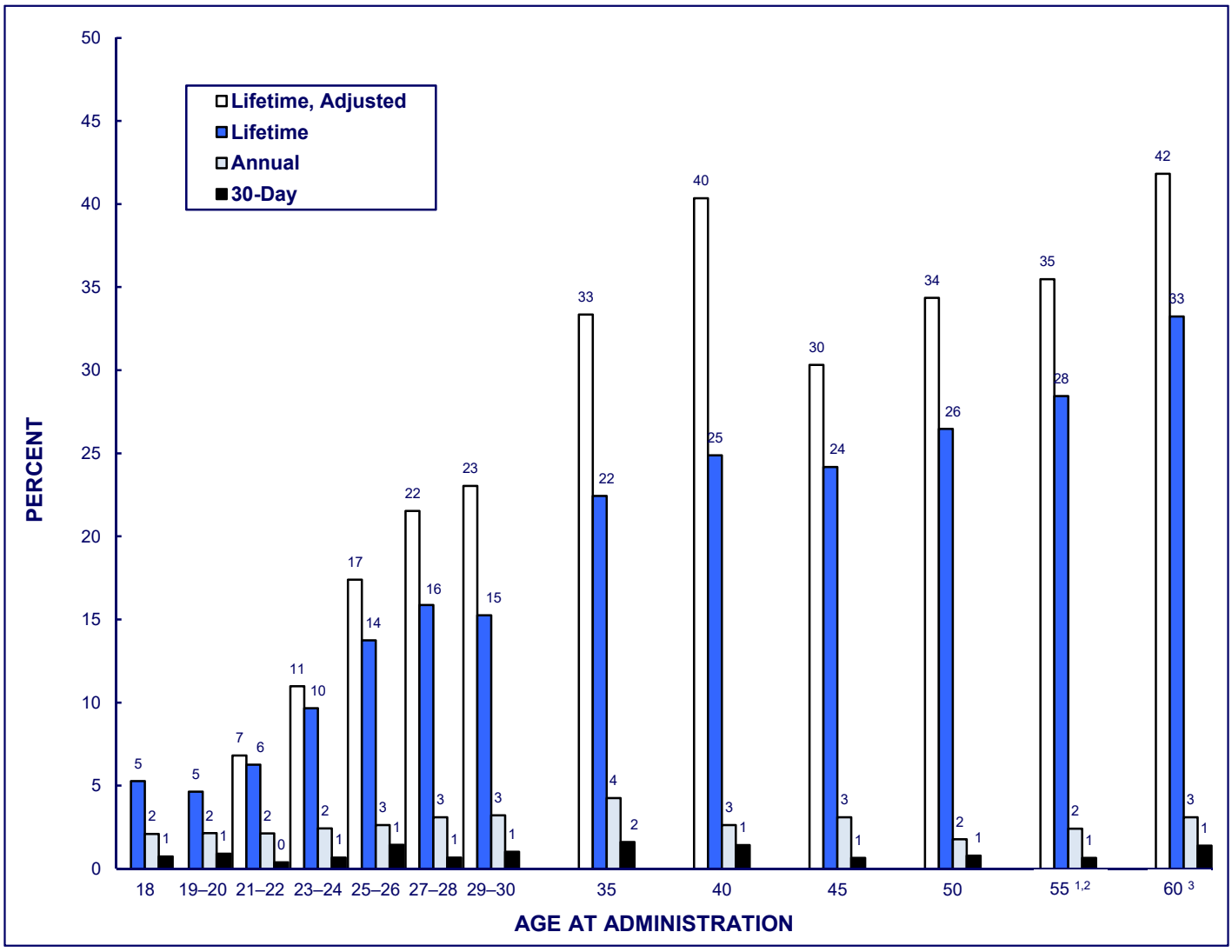
Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

Due to rounding, some bars with the same number may have uneven height.

[1]For the estimate of Adjusted Lifetime Sedatives (Barbiturates) in 2020, there was a significant difference ($p<.01$) among those age 35 between the typical mail condition (15.9%) and the new web-push condition (24.0%) of survey administration.

[2]For the estimate of Annual Sedatives (Barbiturates) in 2020, there was a significant difference ($p<.05$) among those age 60 between the typical mail condition (1.3%) and the new web-push condition (3.3%) of survey administration.

FIGURE 4-14
NARCOTICS OTHER THAN HEROIN
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

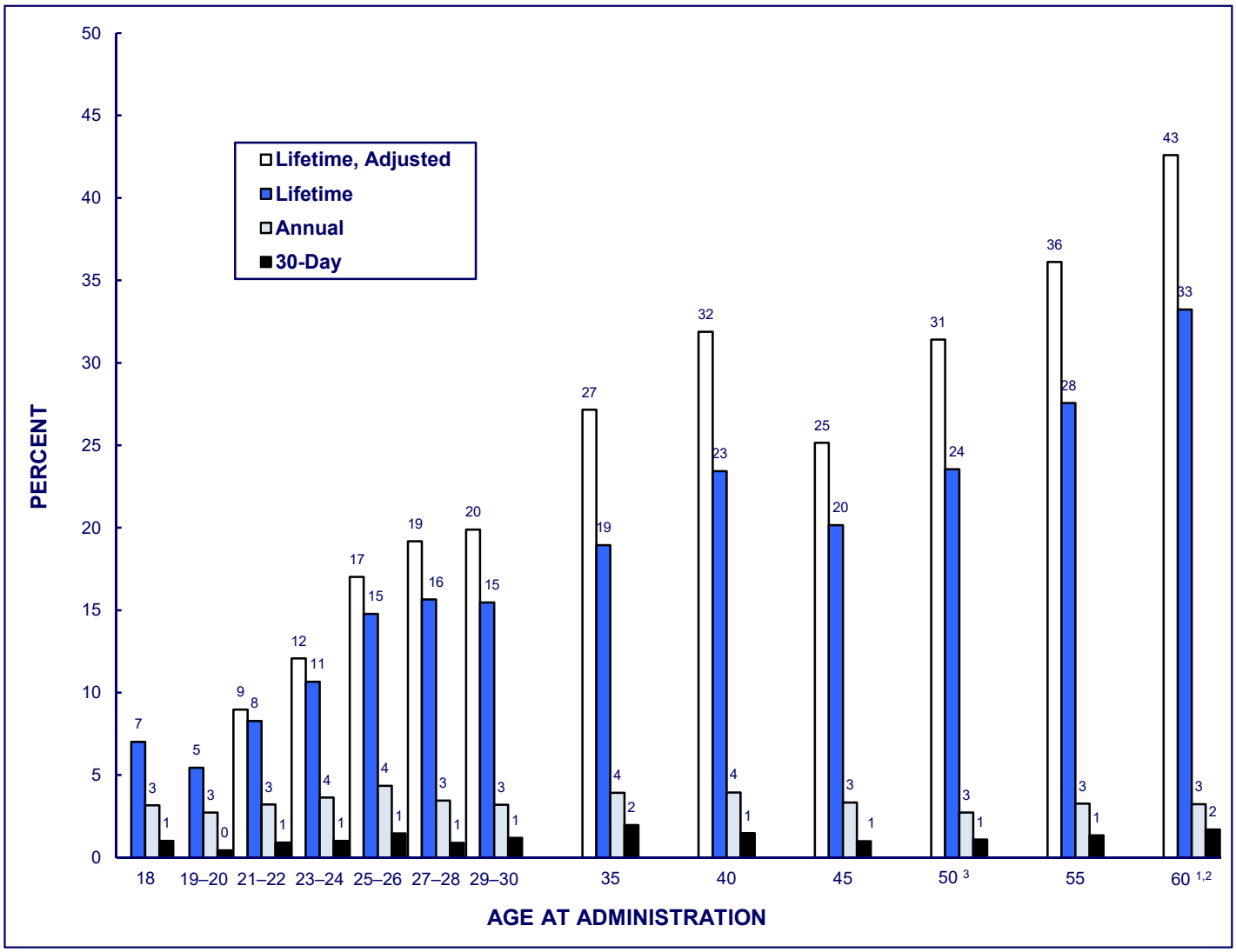
Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]For the estimate of Adjusted Lifetime Narcotics other than Heroin in 2020, there was a significant difference ($p<.01$) among those age 55 between the typical mail condition (39.2%) and the new web-push condition (30.1%) of survey administration.

[2]For the estimate of Lifetime Narcotics other than Heroin in 2020, there was a significant difference ($p<.05$) among those age 55 between the typical mail condition (31.5%) and the new web-push condition (24.0%) of survey administration.

[3]For the estimate of Lifetime Narcotics other than Heroin in 2020, there was a significant difference ($p<.05$) among those age 60 between the typical mail condition (36.4%) and the new web-push condition (29.1%) of survey administration.

FIGURE 4-15
TRANQUILIZERS
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

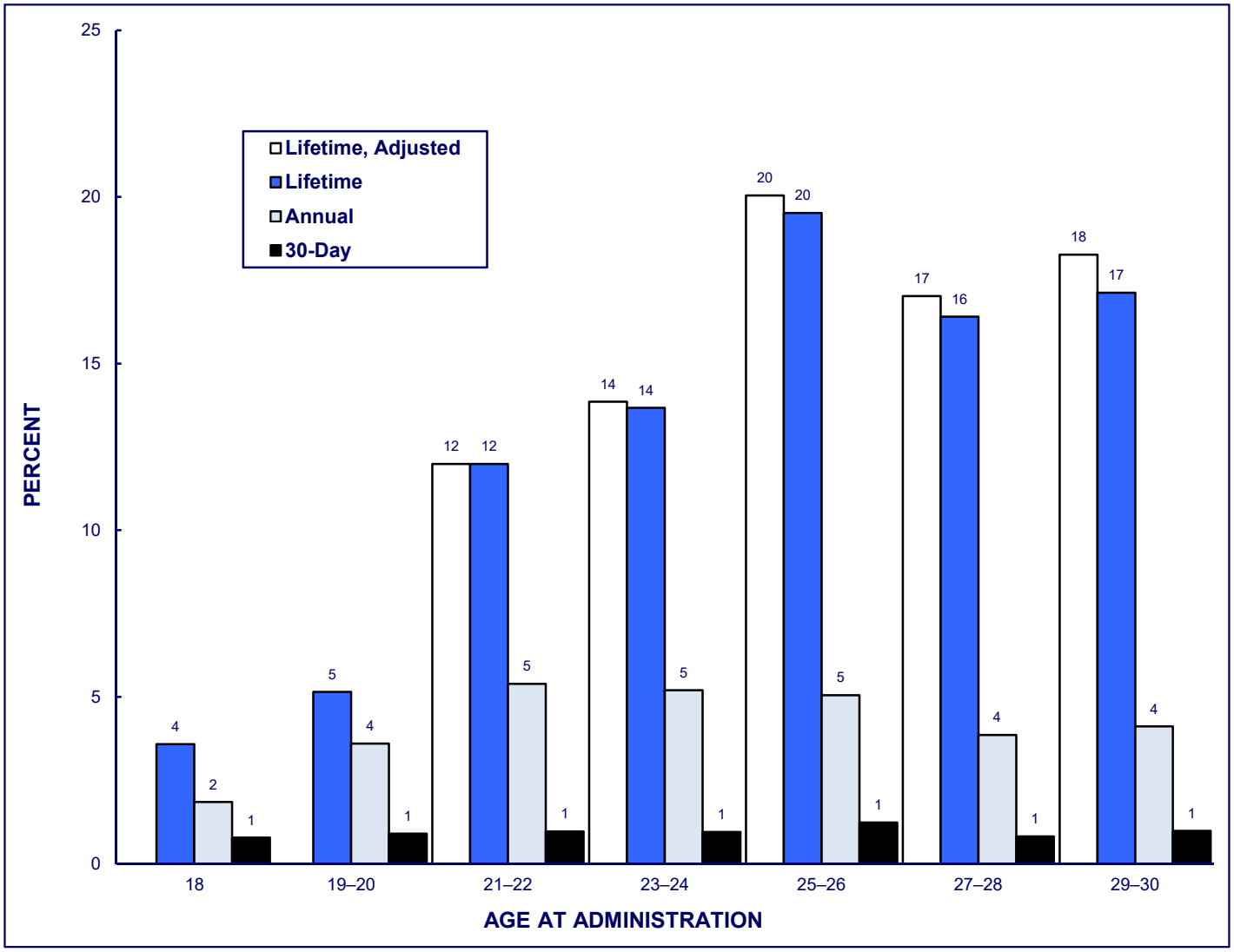
Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]For the estimate of Adjusted Lifetime Tranquilizers in 2020, there was a significant difference (p<.01) among those age 60 between the typical mail condition (46.8%) and the new web-push condition (36.7%) of survey administration.

[2]For the estimate of Lifetime Tranquilizers in 2020, there was a significant difference (p<.05) among those age 60 between the typical mail condition (36.6%) and the new web-push condition (28.6%) of survey administration.

[3]For the estimate of30-Day Tranquilizers in 2020, there was a significant difference (p<.05) among those age 50 between the typical mail condition (1.7%) and the new web-push condition (0.2%) of survey administration.

FIGURE 4-16
MDMA (Ecstasy, Molly)
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 30 [1] by Age Group, 2020



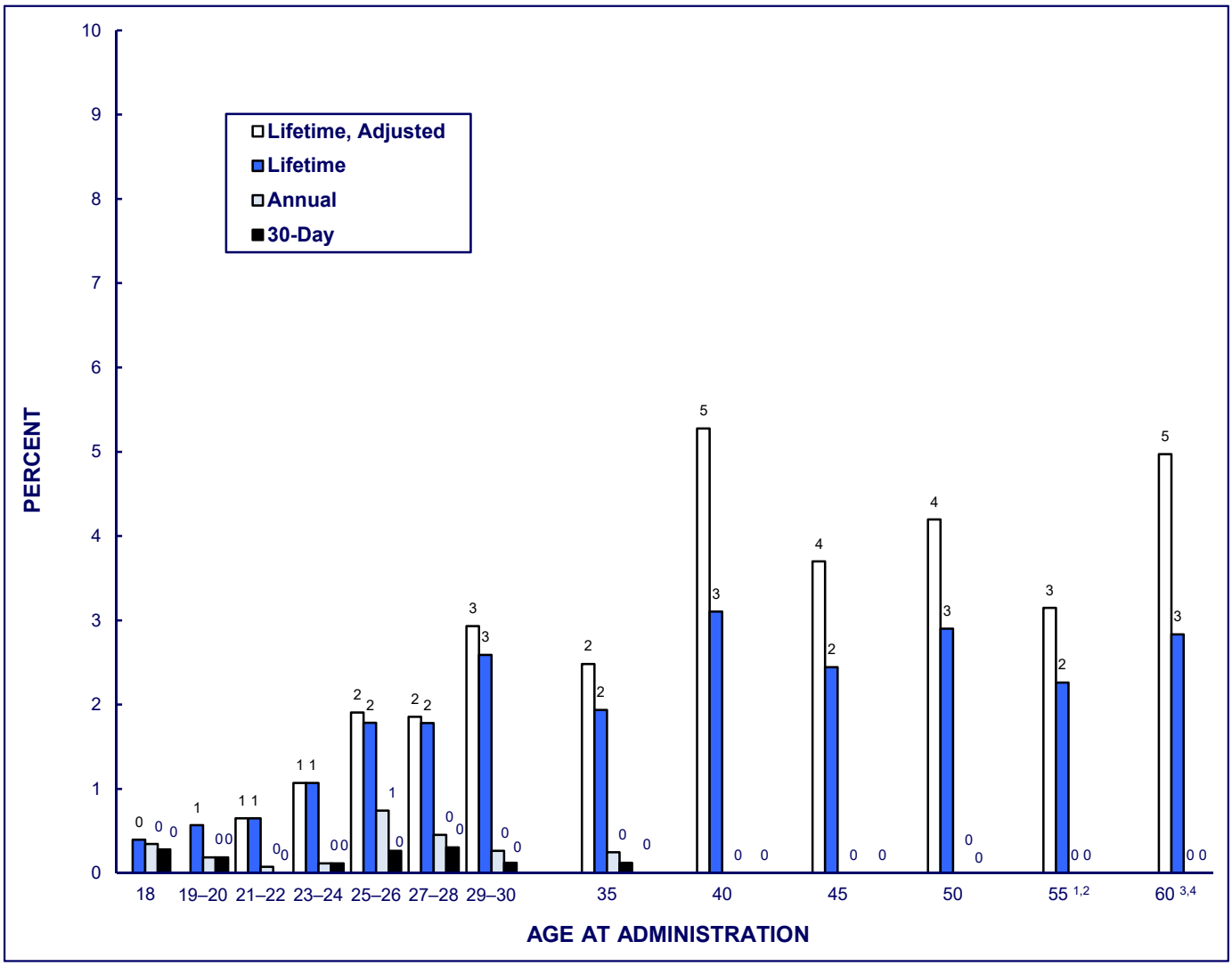
Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

Due to rounding, some bars with the same number may have uneven height.

[1]Questions about the use of MDMA (ecstasy, Molly) were not included in the questionnaires for 35- to 60-year-olds.

FIGURE 4-17
HEROIN
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

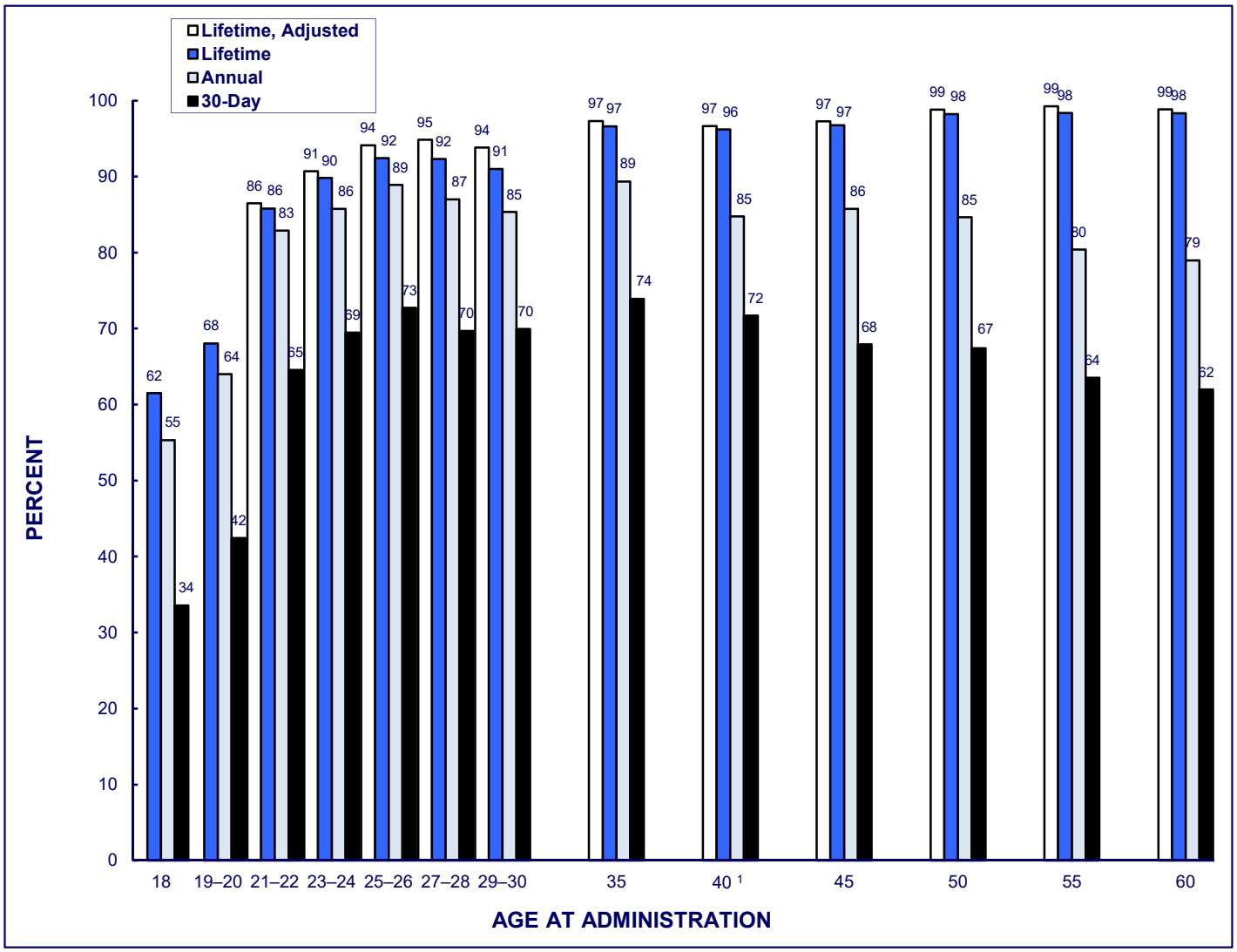
[1]For the estimate of Adjusted Lifetime Heroin in 2020, there was a significant difference ($p<.05$) among those age 55 between the typical mail condition (4.5%) and the new web-push condition (1.3%) of survey administration.

[2]For the estimate of Lifetime Heroin in 2020, there was a significant difference ($p<.01$) among those age 55 between the typical mail condition (3.5%) and the new web-push condition (0.6%) of survey administration.

[3]For the estimate of Adjusted Lifetime Heroin in 2020, there was a significant difference ($p<.01$) among those age 60 between the typical mail condition (6.7%) and the new web-push condition (2.7%) of survey administration.

[4]For the estimate of Lifetime Heroin in 2020, there was a significant difference ($p<.01$) among those age 60 between the typical mail condition (4.4%) and the new web-push condition (0.7%) of survey administration.

FIGURE 4-18a
ALCOHOL
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020

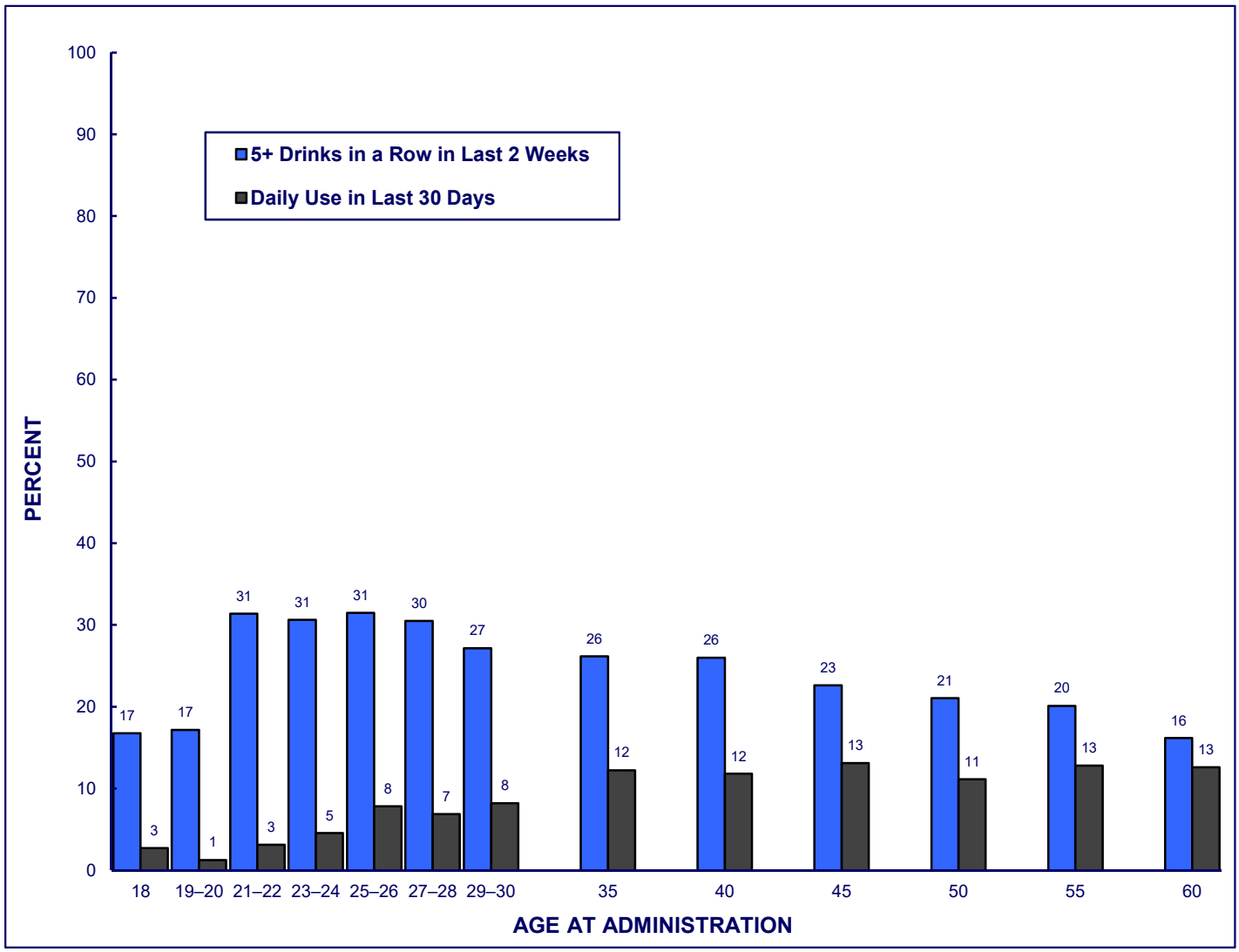


Source. The Monitoring the Future study, the University of Michigan.

Notes. Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.
Due to rounding, some bars with the same number may have uneven height.

[1]For the estimate of 30-Day Alcohol in 2020, there was a significant difference ($p<.05$) among those age 40 between the typical mail condition (68.2%) and the new web-push condition (75.9%) of survey administration.

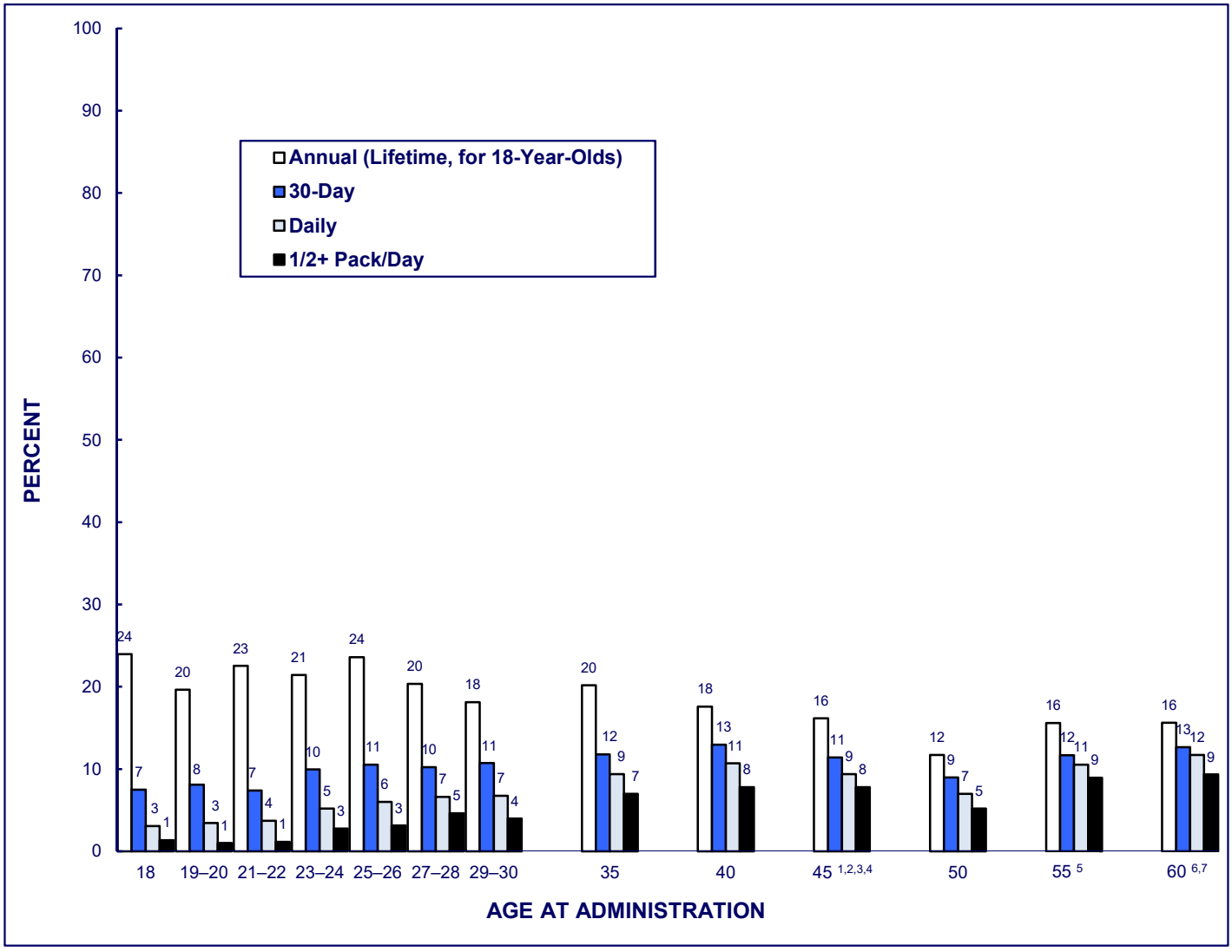
FIGURE 4-18b
ALCOHOL
2-Week Prevalence of 5 or More Drinks in a Row and 30-Day Prevalence of Daily Use by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Due to rounding some bars with the same number may have uneven height.

FIGURE 4-19
CIGARETTES
Annual, 30-Day, Daily, and Half-Pack-a-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



FOOTNOTES FOR FIGURE 4-19

Source. The Monitoring the Future study, the University of Michigan.

Notes. Due to rounding, some bars with the same number may have uneven height.

[1]For the estimate of Annual Cigarettes in 2020, there was a significant difference (p<.05) among those age 45 between the typical mail condition (18.6%) and the new web-push condition (13.1%) of survey administration.

[2]For the estimate of 30-Day Cigarettes in 2020, there was a significant difference (p<.05) among those age 45 between the typical mail condition (13.8%) and the new web-push condition (8.5%) of survey administration.

[3]For the estimate of Daily Cigarettes in 2020, there was a significant difference (p<.01) among those age 45 between the typical mail condition (12.4%) and the new web-push condition (5.6%) of survey administration.

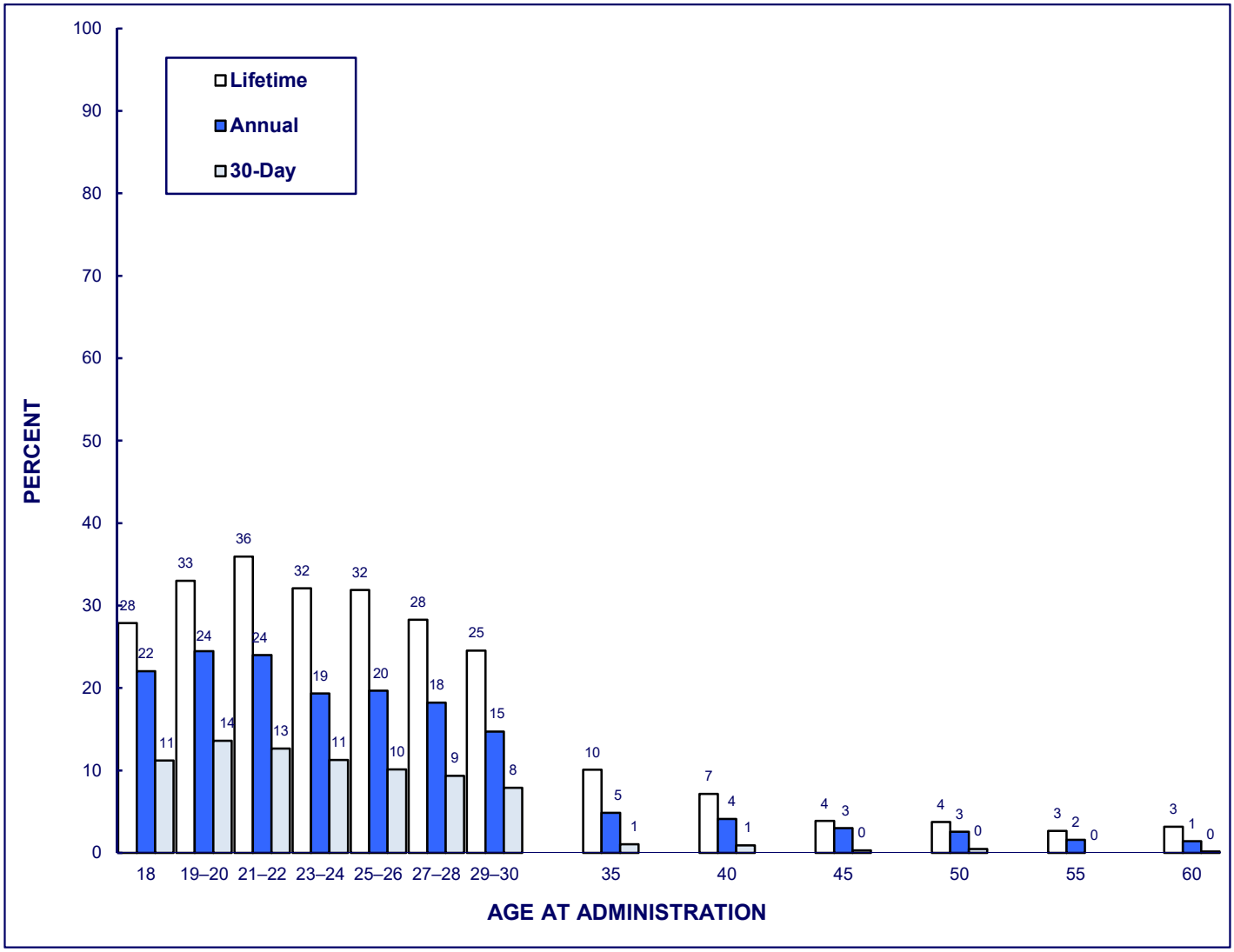
[4]For the estimate of Smoking Half Pack or More per Day in 2020, there was a significant difference (p<.01) among those age 45 between the typical mail condition (10.3%) and the new web-push condition (4.7%) of survey administration.

[5]For the estimate of Annual Cigarettes in 2020, there was a significant difference (p<.05) among those age 55 between the typical mail condition (18.3%) and the new web-push condition (11.8%) of survey administration.

[6]For the estimate of 30-Day Cigarettes in 2020, there was a significant difference (p<.01) among those age 60 between the typical mail condition (15.1%) and the new web-push condition (9.1%) of survey administration.

[7]For the estimate of Daily Cigarettes in 2020, there was a significant difference (p<.01) among those age 60 between the typical mail condition (14.3%) and the new web-push condition (8.0%) of survey administration.

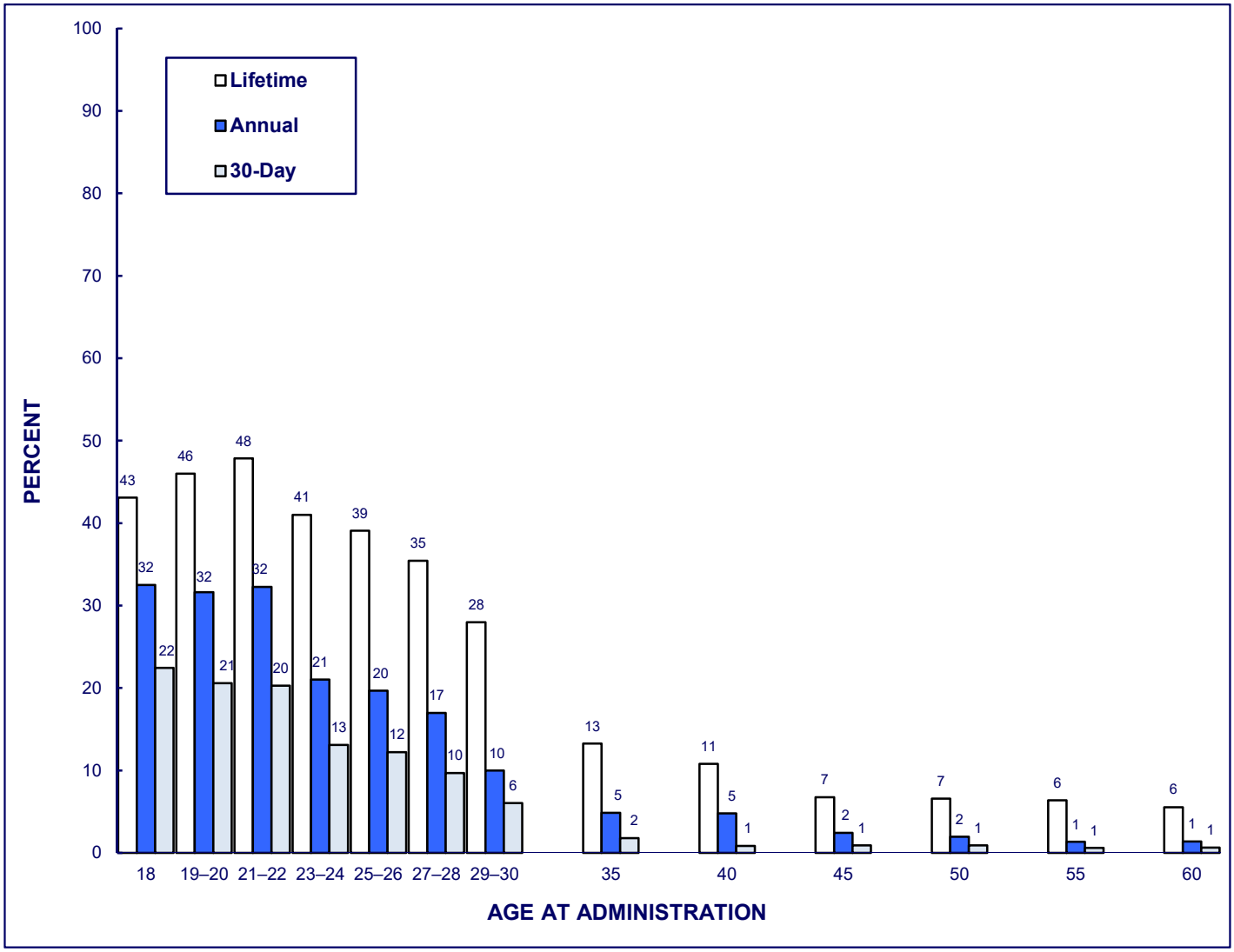
FIGURE 4-20
VAPING MARIJUANA
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Due to rounding, some bars with the same number may have uneven height.

FIGURE 4-21
VAPING NICOTINE
Lifetime, Annual, and 30-Day Prevalence among Respondents of Modal Ages 18 through 60 by Age Group, 2020



Source. The Monitoring the Future study, the University of Michigan.

Notes. Due to rounding, some bars with the same number may have uneven height.

Chapter 5

TRENDS IN DRUG USE IN EARLY AND MIDDLE ADULTHOOD

In this chapter we examine historical trends through 2020 in substance use for various age bands from early to later adulthood, ages 19 through 60**.** We use MTF panel data from graduating high school seniors spanning more than four decades. As discussed in Chapter 3, we use these panel data as multi-cohort cross-sections to examine historical variation in same aged adults from ages 19 through 60. That is, in addition to using such panel data to study stability and change in the same individuals over time, following the new and continuing cohorts over time allows for the important consideration of year-to-year variation among same-aged adults to describe short and longer-term historical trends.

As we note throughout this volume, data were collected from panel respondents between March 30, 2020, and November 30, 2020, covering the first eight months of the nationwide shutdown due to the pandemic. As summarized in Chapter 3, panel data collection was not affected much by the pandemic. Some of the trends noted below appear to reflect pandemic effects, especially when trends shifted direction between 2019 and 2020 (e.g., when trends had been level through 2019 for several years, and then decreased in 2020).

Figures 5-1 through 5-21 present separate trend lines for two-year age strata through age 30,[1] that is, respondents who are one to two years beyond high school, three to four years beyond high school, and so on. These two-year age strata are used to reduce the random fluctuations that would be seen with one-year strata due to smaller sample size.[2] Each data point through age 30 in these figures is based on approximately 680 to 900 weighted cases drawn from two adjacent high school classes[3]; actual (unweighted) numbers of cases are somewhat higher than those shown in the tables. Figures 5-1 through 5-19c also present trend data from respondents at modal ages 35, 40, 45, 50, 55, and 60 based on follow-up data collected at those ages. Beginning at age 35, the age strata are constituted in a slightly different way, in that the two half-samples from a *single* graduating class (which up through age 30 had been surveyed in alternating years) are now *both* surveyed in the same year. In 2020, the 35 year olds are graduates from the high school class of 2003 (weighted N = 707), the 40 year olds from the high school class of 1998 (weighted N = 683), the 45 year olds from the high school class of 1993 (weighted N = 752), the 50 year olds are graduates from the high school class of 1988 (weighted N = 870), the 55 year olds are graduates from the high school class of 1983 (weighted N = 790), and the 60 year olds are graduates from the high school class of

[1] MTF collected age 31 and 32 data from 1990 through 2001, then stopped collecting data from this age group to put resources instead into longer term data collections at 5 year intervals after age 30. Thus, starting in 2002, we collected data from young adults biennially through age 30, and from middle adults every five years starting at age 35. We no longer present trends on the age 31-32 year band; for such trends, please see the previous editions of this volume. Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2017). *Monitoring the Future national survey results on drug use, 1975-2016: Volume II, college students and adults ages 19-55.* Ann Arbor: Institute for Social Research, The University of Michigan.

[2] Strictly speaking, these two-year strata are not age strata, because they are based on all respondents in the given year from two adjacent high school classes, and they do not take into account the any differences in individual respondents' ages within each graduating class; however, they are close approximations to age strata, and we characterize them by the modal age of the respondents as ages 19 to 20, 21 to 22, and so on.

[3] For example, in the 2020 data, the 19-20 year old stratum is composed of participating respondents from the high school graduating classes of 2019 and 2018, respectively; the 21-22 year old stratum contains data from the classes of 2017 and 2016, respectively; and so on.

1978 (weighted *N* = 890). The unweighted actual *N*s are somewhat higher. Modal age 55 was first added to the survey in 2013, providing five-year trends in 2018; modal age 60 was first added to the survey in 2018, so we include 2018, 2019, and 2020 estimates in the figures. The figures also include trend data for 18 year olds for comparison purposes. The page following the figure for each drug contains a table of values for each point in the trend lines separately for the various age strata.

Tables 5-1 through 5-5 are derived from the same data but presented in tabular form for 19-30 year olds *combined* – who we call "young adults." Data are given for each year in which they are available for that full age band (i.e., from 1988 onward).[4] The percentage point *changes* between 2019 and 2020 are listed in the second to last column, along with an indication about the statistical significance of this one-year change. We also include percentage point changes over the past five years (2015-2020) in the last column, and indicate whether the five-year change is significant. Respondents ages 35-60 are omitted from the tables. However, the full data for those respondents are contained in Figures 5-1 through 5-21.

It is important to note the reported age differences at any particular point in time often reflect both cohort effects and secular trends. For example, in the early 1990s, we began to document large and important increases among secondary school students in the use of several substances, particularly marijuana and cigarettes. The increases continued among 12th graders through 1997, as discussed in *Volume I*. One of the important issues addressed in this chapter is whether such increases occurred only among adolescents or whether those higher-using graduating classes have carried their higher levels of drug use with them as they moved into young adulthood. In other words, are they exhibiting lasting differences across class cohorts, known as cohort effects? These would be indicated by the inflection points in the cross-time trends (turning either up or down) coming sequentially across the age strata as cohorts age with a time lag between adjacent strata. We note these likely cohort effects in this chapter.

As we discuss in Chapter 4, for both the 2018 and 2019 data collections of 19-30 year olds, we randomly assigned half to receive typical mail surveys and half to a web-push condition (in which they were encouraged to complete a web-based survey, with mail surveys available upon request and for non-respondents). In 2020, the web-push condition became the standard for all 19-30 year olds. For past trends covering 2018 and 2019, it was important to examine possible survey condition differences. As we noted in Chapters 4 and 5 in the 2018 and 2019 editions of this volume, when discussing 2018 and 2019 prevalence estimates for young adults, very few prevalence estimates varied significantly between the two conditions; thus the data from the two conditions were combined in those chapters and exceptions (i.e., when estimates between the two conditions differed significantly) were noted. In this current chapter on trends, we continued to combine the estimates from the two conditions in both 2018 and 2019, and we note the very few significant differences between conditions in footnotes in Tables 5-1 through 5-5. Also, in addition to conducting significance tests of one-year trends (2019-2020) in the full young adult sample in

[4] In previous editions of this Volume through 2019, we included ages 19-28 combined as reflecting young adulthood, beginning in 1986 and covering the first decade after high school. This year, we moved to covering ages 19-30, which is consistent with other treatments of the young adult age group in this Volume (e.g., in Chapter 4, where we cover 2020 prevalence of this age group). Thus, new for this year is that 19-30 year olds are included each year from 1988 through 2020 in Tables 5-1 through 5-5. There may be some minor inconsistencies in some estimates included in this volume (with young adulthood combined covering ages 19-30) compared to previous editions of this volume (with young adulthood combined covering ages 19-28).

this chapter, we provide supplemental tests of the one-year trends, comparing the web-push sample in 2019 to the full (all web-push) sample in 2020; these supplemental findings are listed as footnotes in Tables 5-1 through 5-5 and as footnotes in the text when appropriate (i.e., only when given trend is discussed and only when there were significant differences between total and web-push only samples). The most common outcome when considering these potential differences was consistency in significant tests between total and web-push samples; when there was a significant difference, in all cases, it was a difference of magnitude, not direction.

For data collections among 35-60 year olds in 2020, we began the transition from our typical mail-based surveys to web-based surveys. To test for survey mode differences, we randomly assigned half of each age group to the typical mail survey condition and half to the new web-push condition (as described in Chapter 3). We found few significant differences ($p<.05$) in estimates of prevalence of drug use between the two conditions (i.e., a total of seven, about 4% of the comparisons); thus, we combined data from the two conditions in a weighted average in this chapter. We note exceptions when estimates differed significantly between conditions in the figures.

RECENT TRENDS IN DRUG USE AMONG YOUNG ADULTS AGES 19-30

In this section we focus on recent trends over the past year and past five years in substance use among young adults ages 19 to 30 combined (shown in Tables 5-1 through 5-5) and selectively by young adult age groups (Figures 5-1 through 5-21). Longer term trends for individual age groups of young adults and older adults are summarized in the next section.

- In 2020 the percent of young adults ages 19 to 30 indicating use of ***any illicit drug*** (including marijuana)[5] in the prior 12 months continued to increase – up by a nonsignificant 1.3 percentage points over 2019 prevalence to reach 45%. This is up from the most recent low of 32% in 2006 (Table 5-2). As shown in the last column in Table 5-2, this prevalence increased a significant 8.0 percentage points over the past five years, that is, since 2015. Correspondingly, 30-day use of any illicit drug was level in 2020 (28%), which is an increase of 6.4 percentage points over the past five years (since 2015) (Table 5-3). These increases primarily have been due to the increases in marijuana use.

- ***Marijuana*** use showed a one-year significant 2.0 percentage point rise[6] in annual prevalence to 42% in 2020 for 19-30 year olds, up from 28% in 2006 – the most recent low point. Annual use for 19-30 year olds combined in 2020 is an all-time high since the study began tracking this age group in 1986 (Table 5-2). The five-year change in annual marijuana use was a significant increase of 9.8 percentage points for 19-30 year olds.

  Thirty-day use of marijuana increased slightly over 2019 by 0.5 percentage points to 27% in 2020, also an all-time high for the study; the five-year trend was an increase of a significant 7.8 percentage points (Table 5-3). *Thus, in 2020, annual and 30-day marijuana use among young adults aged 19-30 were at the highest levels in the 35 years that MTF has been monitoring their use.* (This highlights one of the unique design features of MTF,

[5] See Chapter 3 for discussion of legal status of marijuana and our terminology.
[6] When comparing the 2019 web-push only and 2020 (all web-push) samples, this increase was a nonsignificant 2.5 percentage points.

as discussed in Chapter 3; we strive to maintain consistency in measures and procedures, thus allowing for such long-term historical comparisons.)

As shown in Figure 5-3a (in the table after the figure), the percentage point increases in annual prevalence over the past five years (2015-2020) have been greater for those aged 21-30 than for younger respondents. In particular, annual use increased across the five years by 1.6 percentage points for 19-20 year olds and 10-14 percentage points for those aged 21-30; 2020 prevalence was 40% for 19-20 year olds, 47% for 21-22 year olds, 41-45% for 23-28 year olds, and 35% for 29-30 year olds.

Although the trends for the 35-55 year olds are considered in the next section, it is worth noting here that their annual and 30-day marijuana use also increased in recent years through 2020. For example, between 2015 and 2020, annual use rose 5.7, 12.5, 7.9, 4.3, and 3.2 percentage points, respectively, for 35, 40, 45, 50, and 55 year olds; 2020 prevalence was 27%, 27%, 21%, 17%, and 16%, respectively. Thus, it is likely that the recent increases in marijuana across all age bands of adults 19-55 reflect both secular trends as well as cohort and/or age effects (i.e., it increased for all age-bands, but the increases have been greater for young adults aged 21-30).

- ***Daily or near daily marijuana*** use (defined as use of marijuana on 20 or more occasions in the past 30 days) increased among young adults a significant 0.5 percentage points between 2019 and 2020 to 9.8%, *also the highest level ever observed in this young adult population since tracking their use began 35 years ago.* It is about four times higher than the level in 1992 (2.3%), the low point since 1986 (Table 5-4). Daily marijuana increased a significant 3.3 percentage points over the past five years. *Thus, as of 2020, almost one-in-ten young adults aged 19-30 is a daily or near daily marijuana user.*

- With regard to marijuana use, there has been a recent cross-over in terms of age differences, with those in their early 20s showing higher prevalence than 12th graders of annual use (since 2016), 30-day use (since 2015), and daily marijuana use (since 2014); the gaps have grown larger in the past few years, and now all groups 19-30 show higher annual, 30-day, and daily prevalence than 12th graders (except that in 2020, 12th graders and 29-30 year olds had the same annual prevalence at 35%). In previous years, up until this cross-over, 12th graders had higher or similar prevalence levels. A similar pattern is found for annual prevalence of the index of any illicit drug other than marijuana (Figure 5-2).

- New questions about ***vaping marijuana*** were added to two of six forms of the young adult surveys in 2017 and 2018, to four forms in 2019, and to all six forms in 2020 (they were added to the age 35-60 surveys beginning in 2019). *Annual* prevalence of vaping marijuana was 11% in 2017, 15% in 2018, 22% in 2019, and 20% in 2020 among 19-30 year olds overall, showing significant annual increases through 2019, and a nonsignificant 1.5 percentage point decline in 2020 (Table 5-2).

  Thirty-day prevalence of vaping marijuana was 6.1% in 2017, 8.6% in 2018, 13% in 2019, and 11% in 2020 among 19-30 year olds overall, showing a significant one-year increase in 2018 and 2019, and a significant 2.2 percentage point decrease in 2020 (Table 5-3). For

the individual young adult age groups, trends are shown in Figure 5-20. From 2017 to 2019, 30-day prevalence increased from 6.0% to 14% for ages 19-20, 6.1% to 15% for ages 21-22, 8.4% to 11% for ages 23-24, 4.6% to 11% for ages 25-26, 7.4% to 12% for ages 27-28, and 4.1% to 14% for ages 29-30. Thus, 30-day prevalence of vaping marijuana increased significantly between 2017 and 2019 for young adults, with increases in all age strata (Table 5-3, Figure 5-20). However, in 2020, it decreased significantly for 19-30 year olds overall as indicated above, and decreased or remained the same for each young adult age group: it decreased 0-2.1 percentage points for 19-26 year olds (to 10-14% in 2020), 2.7 percentage points for 27-28 year olds (to 9.4% in 2020), and 6.4 percentage points for 29-30 year olds (to 7.9% in 2020). Although trends among 35-60 year olds are discussed in the next section it is worth noting here that 30-day vaping of marijuana decreased from 2.4-6.8% in 2019 to 0-1.1% in 2020, suggesting a secular trend.

- Annual use of ***synthetic marijuana*** remained essentially unchanged in 2020 at 1.2% (Table 5-2). This is down appreciably from the 6.5% annual prevalence observed in 2011, when use of this drug was first measured (most of the decline occurred through 2014 and has been level since). This decline parallels a sharp decline in synthetic marijuana use among secondary school students.[7]

- Annual use of ***any illicit drug other than marijuana*** (hallucinogens, cocaine, heroin, other narcotics, and amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders) was level among young adults between 2019 and 2020 (19%), and over the last five years (Table 5-2). As summarized below, the five-year level trend in this index of any illicit drug other than marijuana is due to a mix of significant five-year declines in a few drugs (***narcotics other than heroin,*** and ***tranquilizers)***, significant five-year increases in some (***hallucinogens, LSD, hallucinogens other than LSD,*** and ***cocaine***), and no change in others (***amphetamines, sedatives (barbiturates),*** and ***heroin***). (Table 5-2.)

- Annual prevalence of ***hallucinogens, hallucinogens other than LSD***, and ***LSD*** among young adults increased significantly between 2019 and 2020 (to 7.6%, 5.2%, and 4.7%, respectively), and the same was true for the five-year (2015-2020) trends (increasing 2.3 to 3.6 percentage points) (Table 5-2).

- The annual prevalence of ***cocaine*** (any type including crack and cocaine powder) among young adults (Table 5-2) remained level between 2019 and 2020 (6.8%), and showed a five-year (2015-2020) significant 1.5 percentage point increase. It has been trending upward since reaching an all-time low of 3.8% in 2013 (Table 5-2). Annual use of ***crack***, has remained very low the past five years (ranging between 0.3% and 0.7%) among young adults, indicating that this drug is now all but forgotten – among young adult high school graduates, at least.

[7] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

- Several specific illicit drugs showed recent declines. Most notably, annual nonmedical use[8] of ***narcotics other than heroin*** by young adults showed a leveling in 2020 (2.6%), as well as a significant five-year decline of 2.7 percentage points. Its peak was 8.9% in 2006 (Table 5-2). Correspondingly, annual use of ***Vicodin*** showed a significant five-year decline of 2.0 percentage points to 1.8% in 2020; its peak was 9.2% in 2009. ***OxyContin*** appears to have leveled at very low prevalence over the past five years (2.2% in 2020). Narcotics constitute an important class of substances, accounting for many overdose deaths,[9] so the fact that use is continuing to decline among young adults is a very favorable development for the nation's health.

- The annual nonmedical use of ***amphetamines*** declined a nonsignificant 0.8 percentage points over the past five years from 7.4% in 2015 to 6.6% in 2020 (the one-year change was also not significant). In addition, it has been fairly level across the past decade (ranging between 6.5% and 7.6%) (Table 5-2). Likewise, the annual nonmedical use of ***Adderall*** was level in 2020 (7.6%) and has shown some uneven but nonsignificant change over the past five years (ranging between 6.8% and 8.7%).[10] Annual nonmedical use of ***Ritalin*** leveled in recent years at 1.0% to 1.8% between 2015 and 2020.

- Annual prevalence levels of nonmedical use of both ***sedatives (barbiturates)*** and ***tranquilizers*** have been declining somewhat in recent years among young adults, both now at all-time lows for the past two decades. Both declined over the past five years (2015-2020), with annual use of sedatives (barbiturates) declining a nonsignificant 0.6 percentage points to 2.0%, and annual use of tranquilizers declining a significant 1.8 percentage points to 3.4% in 2020; the one-year changes for both were not significant (Table 5-2).

- Annual use of ***MDMA*** (***ecstasy*** and more recently ***Molly***) increased somewhat between 2019 and 2020 (a nonsignificant 0.9 percentage points to 4.5% in 2020); the five-year trend was level. Molly was added as an example in 2014 (Table 5-2).

- Annual ***alcohol*** use among young adults has been fairly level in recent years (with a few exceptions noted below), but 30-day use showed declines in 2020. Annual prevalence both of any use and of ***been drunk*** was level over the past year and past five years (82% and 61%, respectively, in 2020) (Table 5-2). The *30-day prevalence* of alcohol use decreased a significant 3.5 percentage points between 2019 and 2020 (to 65%), and a significant 3.4 percentage points over the past five years. Similarly, the 30-day prevalence of having been drunk decreased a significant 5.0 percentage points between 2019 and 2020 (to 31%), and a significant 3.1 percentage points over the past five years (Table 5-3). Thus, for 30-day use and been drunk, most all of the decline over the past five years was between 2019 and 2020.

[8] These questions are asked on the surveys with respect to use "not under a doctor's orders." Throughout this volume, we use the term "nonmedical use" to reflect use not under a doctor's orders.
[9] National Institute on Drug Abuse (2019). *Overdose death rates.* Accessed July 30, 2019.
[10] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. Among all age groups, the annual prevalence of Adderall was similar to the annual prevalence of amphetamines, reflecting that Adderall is a commonly used amphetamine. When annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamine, this is likely a matter of random sample variation due to relatively small sample sizes for Adderall combined with the relatively low prevalence estimates of both.

The annual use of ***alcoholic beverages mixed with energy drinks*** declined significantly in the past year[11] and past five years (to 26% in 2020), with most all of the five-year decline being between 2019 and 2020 (Table 5-2). The annual use of ***flavored alcoholic beverages***, however, showed a significant 13 percentage point increase over the past five years from 55% in 2015 to 68% in 2020 (the one-year 9.4 percentage point increase was also significant) (Table 5-2). Likewise, the 30-day use of flavored alcoholic beverages increased a nonsignificant 4.4 percentage points between 2019 and 2020 (to 36%), and a significant 13 percentage points over the past five years (Table 5-3).

Binge drinking – having five or more drinks at least once in the prior two weeks – was level from 2015 to 2019 (31-32%), and then showed significant one-year and five-year declines (by 3.8 and 3.3 percentage points, respectively) in 2020 (to 28%). The recent high for such use was in 2008 at 37%; it then declined through 2015 (31%), remained level through 2019, and then declined in 2020 to a new all-time low of 28% (Table 5-4).

Starting in 2005, we included a set of questions concerning ***high-intensity drinking*** (also known as ***extreme binge drinking***). The questions asked respondents about the frequency in the past two weeks of having 10 or more drinks in a row (included on one of six questionnaire forms through 2014, on two forms 2015-2018, and five forms in 2019 and 2020), and also of having 15 or more drinks in a row (included on just one of six questionnaire forms throughout). The prevalence of having ***10 or more drinks*** one or more times in the past two weeks increased a nonsignificant 0.5 percentage points in 2020,[12] reaching 12.4%; the five-year increase of 2.0 percentage points also was not significant, and over the past five years it has ranged from 9.6% to 12.4%. The prevalence of having ***15 or more drinks*** showed a nonsignificant one-year increase of 1.0 percentage points to 2.9% in 2020, and was level over the past five years (ranging from 1.8% to 3.4%) (Table 5-4).

Overall, regarding the recent trends for various measures of alcohol use among 19-30 year olds, it would appear that the significant declines in 30-day use, being drunk, and 2-week binge drinking reflect possible pandemic effects. For all three of these measures, prevalence was level between 2015 and 2019, and then it declined between 2019 and 2020, perhaps reflecting limited peer socializing time during the pandemic (as indicated above, data were collected from March 30, 2020, just after the national shutdown, through November 30, 2020).

- ***Cigarette smoking*** among young adults significantly declined over the past five years (2015-2020), a continuation of longer-term declines and reaching historic lows in 2020. Between 2015 and 2020, *annual prevalence* declined a significant 4.3 percentage points to 21% in 2020 (Table 5-2), *30-day prevalence* declined a significant 7.0 percentage points to 9.5% in 2020 (Table 5-3), *daily smoking* declined a significant 4.6 percentage points to 5.3% in 2020 (Table 5-4), and *smoking half-pack-a-day* or more declined a significant 3.2 percentage points to 2.8% in 2020 (Table 5-4); all of the one-year trends were declines,

[11] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was a nonsignificant 5.7 percentage points.
[12] When comparing the 2019 web-push only and 2020 (all web-push) samples, this increase was a significant 4.5 percentage points.

significantly so for 30-day and daily smoking.[13] *On all of these measures of smoking, the 2020 levels were at historic lows.* This pattern of significant decline follows appreciable declines to historic lows among high school seniors and is consistent with a cohort effect working its way up the age spectrum (Figures 5-19a, b, and c).

- New questions about vaping nicotine were added to two of six forms of the young adult surveys in 2017 and 2018, to four forms in 2019, and to all forms in 2020 (they were added to the age 35-60 surveys beginning in 2019). *Annual* prevalence of ***vaping nicotine*** was 13% in 2017, 17% in 2018, 24% in 2019, and 22% in 2020 among 19-30 year olds, showing a significant one-year increase in both 2018 and 2019 but a halt to the increases in 2020 (Table 5-2).

  Thirty-day prevalence of ***vaping nicotine*** was 6.2% in 2017, 9.9% in 2018, 14% in 2019, and 14% in 2020 among 19-30 year olds, showing significant one-year increases in 2018 and 2019 (Table 5-3). For the young adult age groups, trends are shown in Figure 5-21. Between 2017 and 2019, 30-day prevalence increased from 7.4% to 22% for ages 19-20, from 6.0% to 19% for ages 21-22, from 8.3% to 15% for ages 23-24, from 3.6% to 11% for ages 25-26, from 7.2% to 9.3% for ages 27-28, and from 4.8% to 9.4% for ages 29-30. Thus, between 2017 and 2019, 30-day vaping nicotine increased significantly among young adults aged 19-30, with the increase being largest among 19-22 year olds (more than tripling between 2017 and 2019); 30-day prevalence was highest among 19-22 year olds at 19-22% in 2019 (Table 5-3, Figure 5-21). However, between 2019 and 2020, change was uneven: it increased 0.4 to 1.5 percentage points among 19-20, 25-26, and 27-28 year olds and decreased 1.5 to 3.4 percentage points among 21-22, 23-24, and 29-30 year olds. Although trends among 35-60 year olds are discussed in the next section it is worth noting here that 30-day nicotine vaping decreased in 2020 for each age group to one-third to one-fourth of the given 2019 level, ranging from 0.6% to 1.8% in 2020. The extensive decreases and minimal increases across the 19-60 age groups between 2019 and 2020 suggest a secular decline (period effect) in nicotine vaping.

Selective Summary of Recent Trends among Young Adults

In summary of the recent trends among young adults age 19-30, ***marijuana*** use increased to all-time highs in 2020, which is true for annual use, 30-day use, and daily use; the five-year increases from 2015 to 2020 for all three levels of marijuana use were significant. As of 2020, over four-in-ten young adults (42%) used marijuana at least once in the past 12 months, over one-in-four (27%) used it at least once in the past 30 days, and nearly one-in-ten (9.8%) was a daily or near-daily marijuana user in the past 30 days.

Concerning the index of ***illicit drugs other than marijuana***, annual use has been relatively steady the last few years, with the five-year trend (2015-2020) being nonsignificant (19% in 2020). The five-year leveling in the annual prevalence of this index of any illicit drug other than marijuana was due to a mix of changes among individual drugs that make up this index. There were significant five-year increases in annual prevalence of ***hallucinogens*** overall, of ***hallucinogens***

[13] When comparing the 2019 web-push only and 2020 (all web-push) samples, the decrease for ½ pack a day or more was a significant 1.3 percentage points.

other than LSD, and of ***LSD*** (to 7.6%, 5.2%, and 4.7% in 2020, respectively), as well as of ***cocaine*** (to 6.8% in 2020). There were significant five-year declines in nonmedical annual prevalence of ***narcotics other than heroin*** (to 2.6% in 2020) and of ***tranquilizers*** (to 3.4% in 2020). And there were no significant 5-year changes in annual prevalence of ***amphetamines*** (6.6% in 20) or of ***sedatives (barbiturates)*** (2.0% in 2020). In addition, annual prevalence of ***MDMA (ecstasy***, ***Molly)*** (which is not included in the index of illicit drugs) was level over the past five years (4.5% in 2020).

Most indices of ***alcohol*** use among young adults have been level in recent years through 2019. However, between 2019 and 2020, there were significant declines in 30-day ***alcohol use*** and in having ***been drunk***, and in two-week ***binge drinking***, dropping by 3.5, 5.0, and 3.8 percentage points respectively to 65%, 31%, and 28%; the five-year declines were also significant, but most all of the five-year declines occurred between 2019 and 2020, suggesting a possible pandemic effect in terms of reduced social time (as indicated above, data were collected from March 30, 2020, just after the national shutdown, through November 30, 2020). In contrast, there was a significant five-year increase in 30-day prevalence of ***flavored alcoholic beverages***, reaching 36% in 2020 (the one-year increase was not significant).

Cigarette use continued to decline to all time-lows in 2020. The five-year declines were significant for annual prevalence (to 21% in 2020), 30-day prevalence (to 9.5% in 2020), daily prevalence (to 5.3% in 2020), and half-pack a day prevalence (to 2.8% in 2020).

Finally, annual and 30-day prevalence of ***vaping marijuana*** and of ***vaping nicotine*** increased significantly from 2017 through 2019 for 19-30 year olds. In 2020, however, vaping marijuana declined: annual prevalence declined a nonsignificant 1.5 percentage points to 20%, and 30-day prevalence declined a significant 2.2 percentage points to 11%. Similarly, annual prevalence of vaping nicotine declined a nonsignificant 1.7 percentage points in 2020 to 22%, and 30-day prevalence was level at 14% in 2020. Thus, it appears that the rapid increase in vaping marijuana and vaping nicotine came to a halt in 2020, at least for the time being.

LONGER-TERM TRENDS IN EARLY AND MIDDLE ADULTHOOD

In this section we consider longer-term trends among 19-30 year olds overall (Tables 5-1 through 5-4), as well as among all age groups (19-60) individually (Figures 5-1 through 5-21), giving attention to how trends have varied by age and by cohort.

- Longer-term declines among young adults in the annual prevalence of several drugs appeared to end in 1992 or 1993 (Table 5-2, Figure 5-1). Among the 19-30 year olds overall, this was true for the use of ***any illicit drug***, ***marijuana***, ***any illicit drug other than marijuana***, ***hallucinogens***, ***narcotics other than heroin***, ***crack***, ***amphetamines***, ***sedatives*** (***barbiturates***), and ***tranquilizers***. In 1994, annual prevalence for most drugs remained steady. ***Cocaine other than crack*** reached its low point in 1994 after a period of substantial decline that began in the late 1980s. In 1995 there again were modest increases (a percentage point or less) in the annual prevalence of almost all of the drug classes in Table 5-2, some of which were statistically significant.

- Thus, it was clear that by 1992 or 1993 the downward secular trend (i.e., period effect) running back to the early 1980s and observable in all of these age strata (as well as among adolescents) had ended. What happened after that, however, is more of a cohort effect, reflecting an interaction between age and period such that only adolescents showed an increase in illicit drug use initially, and they then carried those new (higher) levels of drug use with them as they entered older age bands. Figure 5-1 shows the effects of generational replacement on the use of ***any illicit drug***, as the teens of the early 1990s reached their 20s. While all age groups generally moved in parallel through about 1992, the youngest age bands were the first to show signs of increase in their overall level of illicit drug use. The 18 year olds shifted up first, followed by the 19-20 year olds in 1994, the 21-22 year olds in 1996, the 23-26 year olds in 1999, the 29-30 year olds in 2004, and the 35 year olds in 2008. The 40, 45, 50 and 55 year olds did not show much systematic increase in any illicit drug use through about 2014.

  Then, from 2007 to 2013, use among 12th graders and several of the youngest young adult age bands increased, and a number of the older age bands followed suit in subsequent years including increases among 35 year olds starting in 2013, among 40 year olds starting in 2015, and among 45 year olds in 2017, once again suggesting a cohort effect (see Figure 5-1).

  To summarize, in the earlier decline phase of the drug epidemic, annual prevalence of use of ***any illicit drug*** moved in parallel for all age strata, as illustrated in Figure 5-1; this pattern reflects a secular trend, because a similar change is observed simultaneously across different age levels. After 1992 – in what we have called the "relapse phase" of the popular drug epidemic that began in the 1960s – a quite different pattern emerged: 8th graders increased their drug use first, followed by 10th and 12th graders[14]; then the next-oldest age group increased use, but with a little delay; the next-oldest then increased use, but with a longer delay; and so on. This pattern reflects a classic cohort effect, in which different age groups are not all moving in parallel; rather, different age groups show increases when the cohorts (i.e., high school classes) having heavier use at an earlier stage in development reach the relevant age level. In addition, note that the slopes of the age bands are successively less steep in the older age groups, suggesting that some of the cohort effect may be dissipating with maturation, quite likely indicating an age effect. But we think it unlikely that only cohort effects are occurring (in addition to the long-established age effects); period effects also likely play a role.

- Use of ***marijuana*** shows an almost identical pattern to the illicit drug use index – not surprising given the fact that marijuana, by far the most prevalent of the illicit drugs, tends to drive the index (Figure 5-3a). After a long and steady decline from the late 1970s to the early 1990s, annual marijuana use leveled for a while among young adults before beginning a gradual increase. Virtually all of this increase was attributable to the two youngest age bands (18 and 19 to 20) until 1996, when the 21-22 year olds began to show a rise. The older age bands then tended to show increases fairly sequentially, with 29-30- and 35 year olds showing significant increases in 2008. The 18 year olds' use of marijuana in the prior

[14] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

12 months declined after 1997 and, later, several of the succeeding age bands through age 26 began to show declines in a pattern that again suggests lasting cohort differences. Since about 2006, however, use rose not only among the 18 year olds (through about 2011, leveling since then) but also among all age bands through 2020, including uneven increases for 35 to 45 year olds (and for 50 and 55 year olds since 2008 and 2013, respectively, when data became available), thus indicating a secular trend affecting adults. This strongly suggests an impact on use by culture-wide events to which all of the age bands are exposed and by which they all were affected during this historical period. Changing attitudes toward marijuana use, perhaps driven in part by the legalization of medical use in many states and more recently by legalization of recreational use for adults in some states, likely have played an important role in this secular trend.

- A similar pattern emerged for current ***daily marijuana*** use (Figure 5-3c). In the mid- to late 1990s, daily marijuana use among 35 and 40 year olds was as high as or higher than use among some younger age groups, suggesting a lasting cohort effect on this behavior, because the cohorts comprising those older age strata grew up in a period of particularly high adolescent marijuana use. However, in more recent years through the mid-2000s, the 35, 40, and 45 year olds were similar to respondents ages 27 to 30, who had among the lowest levels of daily use in adolescence. An important finding shown in Figure 5-3c is that, although the various age groups had been moving in parallel for many years at fairly similar levels of prevalence, the trends diverged considerably in the 1990s in a staggered fashion, such that the 18-30 year olds came to have distinctly higher levels of daily marijuana use than the older age groups, again reflecting stable cohort differences and perhaps some new age effects emerging in the middle-to-late adult ages (this is discussed further below when considering the strong cohort effects in cigarette use). In 2010 the upturn in daily marijuana use that had been occurring at younger ages (best seen in the table accompanying Figure 5-3c) reached the age-35 stratum, with a significant increase from their 2009 prevalence rate putting the age 35 group back in company with the younger adults through 2015. Since about 2010, the increase has been greater for those in the mid- to late-20s through age 40, and these age groups had higher levels of daily use in 2020 than they did in 2010, reaching levels well above those observed in the early to mid-1990s (Figure 5-3c and associated table).

- The index of using ***any illicit drug other than marijuana*** has shown a similar transition in the pattern of change. Period effects seemed to predominate in the 1980s until about 1992 as all age groups moved in parallel, but a cohort-related pattern of change emerged thereafter (Figure 5-2). And, while the rise in annual use leveled by 1997 among 18 year olds, it began rising in 1999 among 19-20 year olds, in 2000 among 21-22 year olds, in 2002 among 23-24 year olds, in 2005 among 29-30 year olds, and so on. The primary difference from the picture for marijuana is that the increases were not as sharp in the 1990s for most of the age groups. (Compare Figure 5-2 with Figure 5-1 to see the difference.) Between about 2000 and 2008, annual use remained fairly steady or dropped some for 12th graders and 19-22 year olds, and increased for the other age groups, particularly the 23-30 year olds. Since about 2008 the levels of use of any illicit drug other than marijuana showed some decline for 12th graders and 19-20 year olds, and somewhat uneven changes for the other age groups, typically resulting in little net change in the past decade. In the past few

years, there has been a widening gap among 21-30 year olds and the other age groups (including older adults).

- Regarding differences in trends by age groups, we note that several drug classes exhibited a faster decline in use among the older age groups than among 12th graders during the earlier period of decline in the 1980s (see Figures 5-1 through 5-19c). These included ***any illicit drug***, ***any illicit drug other than marijuana***, ***amphetamines***, ***hallucinogens*** (until 1987), ***LSD*** (through 1989), and ***methaqualone***, but *not* ***marijuana*** or ***cocaine***. In fact, a crossover was evident for some drugs when 12th graders were compared to young adults. In earlier years 12th graders had lower usage levels, but for some years after 1993 they tended to have higher levels than young adults for use of ***any illicit drug***, ***marijuana***, ***hallucinogens***, ***LSD*** specifically, ***crack cocaine***, ***tranquilizers***, and ***crystal methamphetamine*** (***ice***). However, as summarized above regarding recent trends in marijuana use, there has been another crossover for most of these drugs, with 12th graders again having lower annual prevalence than those in their early to mid-20s.

- With regard to ***inhalants***, the large separation of trend lines for the younger age groups in Figure 5-4 shows that, across many cohorts, annual use has dropped consistently and sharply with age, particularly in the first few years after high school. In fact, of all the populations covered by MTF, the 8th graders (not shown in Figure 5-4) have had the highest rate of use, indicating that the decline in use with age starts at least as early as 8th or 9th grade.[15] Like cocaine, inhalants have shown a strong age effect, but unlike cocaine, use of inhalants declines rather than increases with age and the age effect generally has been sustained throughout the life of the study.

  Figure 5-4 also shows that, until the mid-1990s, there was a long-term gradual increase in annual inhalant use (unadjusted for underreporting of nitrite inhalants), one which was greatest among 12th graders, next greatest among 19-20 year olds, and next greatest among 21-22 year olds. Respondents more than six years past high school, who historically have had a negligible rate of use, did not exhibit the increases in use seen among the younger respondents, which began at least as early as 1977 among 12th graders and in 1983 among 19-20 year olds. There was some subsequent increase among 21-22 year olds and, later still, an increase among 23-24 year olds. After 1995, this long-term trend, reflecting a cohort effect, began to reverse in the two youngest age strata (coincident with an anti-inhalant media campaign by the Partnership for a Drug-Free America) as well as among several other age strata, suggesting a period effect due to some culture-wide influence, such as a media campaign. Subsequently, further declines among several age strata are suggestive of a cohort effect. Those in their mid- to late-20s have generally shown very low levels of inhalant use throughout the course of the study (this question is not asked of the age 35 and above groups for this reason).

- In the late 1980s and again in the first half of the 1990s, ***LSD*** use also increased among those in their teens and early 20s much more than among the older strata, as Figure 5-6 illustrates. Over the interval 1985 to 1996, there was a gradual but considerable increase in

[15] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

annual LSD use among respondents ages 18 to 24, which was sharpest among 12th graders and 19-20 year olds. The increase did not seem to radiate up the age spectrum beyond age 26. A turnaround began among 12th graders after 1995 and then among the older age groups in a somewhat staggered fashion, again indicative of a cohort effect. Declines through 2003 were greatest among 18-24 year olds, who had attained the highest prevalence of LSD use. Use declined considerably from 2001 to 2003 in all age bands (including 8th and 10th graders), and then leveled through 2007 at historically low rates, suggesting that an important secular trend may have set in, which was quite possibly related to decreased availability of the drug. Since 2007 there has been evidence of a very gradual increase in use in all age groups 18-30, particularly among those ages 18 to 28; in the past few years, use also has increased unevenly among the 29-30 year olds. Among 35 year olds, use has been near-zero (this question is not asked for those age 40 and older). As discussed above, the five-year trend in annual prevalence of LSD among 19-30 year olds has been a significant increase of 2.3 percentage points, reaching an all-time high (since 1988) of 4.7% in 2020; the recent upticks among 21-26 years are particularly notable.

- The use of ***hallucinogens other than LSD*** showed a similar and fairly parallel decline in use among all age bands through the 1980s, indicating a secular trend (Figure 5-7). During the relapse phase for many drugs during the 1990s, there was a substantial increase in use among the younger age bands, but not among those ages 27 or older. The increases in the older age bands did not appear for some time, again indicating a cohort effect at work. From about 2003 through 2019, the prevalence of use of hallucinogens other than LSD has continued to decline gradually among 18-20 year olds, declined gradually and then leveled among 21-24 year olds, and increased unevenly for 25-30 year olds; this resulted in a considerable convergence in use among the various age strata. As discussed above, the annual prevalence of hallucinogens other than LSD increased for all young adults in 2020, with a five-year significant increase of 2.4 percentage points to 5.2% in 2020, an all-time high (since 1988); the recent increases have been greatest for 21-26 year olds.

- The annual prevalence for ***MDMA*** use (***ecstasy*** and more recently ***Molly***) among those aged 19 to 30 was at about 1.2% in 1989 and 1990 (Table 5-2 and Figure 5-8). After 1991 it dropped to around 0.8% for several years before rising significantly in 1995. MDMA use then rose sharply in all of the young adult age strata, most notably in the younger age bands (19 through 26) through 2001. Use among 12th graders, which was not measured until 1996, was by then the highest of any of the age groups at 4.6% annual prevalence. Twelfth graders' use declined by a full percentage point through 1998 before jumping significantly – by two full percentage points – in 1999. (Use by 10th graders also jumped significantly in 1999.[16]) Thus it appears that young people from their mid-teens to mid-20s "discovered" MDMA after some years of low and relatively level use. In 2000 the sharp increase in use continued for ages 18 through 26 – with highs of over 10% among 19-22 year olds. By 2001 the increase had slowed and even begun to reverse among those aged 23 to 26. We attributed the deceleration in 2001 to a fairly sharp increase in *perceived risk* of MDMA use in that year, and based on that, we predicted a turnaround in use in 2002. In 2002, and again in 2003, perceived risk increased sharply and, as Figure 5-8 illustrates, all age bands

[16] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

showed a reversal with a sharp decrease in use through 2004. Clearly, the decrease has been sharpest in the younger age bands, perhaps because a cohort effect is at work in the upper ages, helping to offset a downward secular trend. From about 2005 through 2014 there was some rebound and uneven change in MDMA use in all age bands through age 30 (older respondents are not asked about this drug), and the increase was staggered, suggesting that another cohort effect was underway. Between 2015 and 2020, there has been some uneven change in annual MDMA use for most of the age groups, resulting in little net change over the past five-years (as summarized above).

- ***Cocaine*** (Figure 5-9) gives quite a dramatic picture of change. Unlike most other drugs, annual use of cocaine has generally tended to rise with age after high school, usually peaking three to four years past graduation from the mid-1970s through the mid-1990s. This was a classic example of an age effect. Despite the large age differences in absolute prevalence during that period, all age strata moved in a fairly parallel way through 1991, indicating that a secular trend was taking place in addition to the age effect. All age strata began a sharp and sustained decline in use after 1986 – again reflecting a period effect. The two youngest strata (12^{th} graders and 19-20 year olds) leveled by 1992, whereas use continued a decelerating decline for a few years beyond that in the older age groups, signaling the continuation of a cohort effect that began earlier. Then, from 1994 to 1999, annual prevalence of cocaine use rose some for 18-26 year olds on a somewhat staggered basis, with those aged 27-35 still decreasing a bit more over that same period. This, to some degree, reversed the age differences that were so prominent in the 1970s and 1980s.

  Cohort-related change appears to have predominated in the 1990s, quite possibly as the result of "generational forgetting" of the cocaine-related casualties so evident in the early to mid-1980s. In other words, those in the older cohorts retained that learning experience, but those in the newer cohorts never had it. The fact that from 1994 to 1996 the 35 year olds had higher lifetime prevalence levels of cocaine use than some of the younger age groups also suggests some lasting cohort-related differences established during the peak years of the cocaine epidemic. From about 2005 or 2006 through 2013 there was a gradual decline in cocaine use in all age bands, but particularly among the younger ages who had earlier attained higher prevalence levels. Between 2013 and 2014, however, there was a significant increase in cocaine use among young adults ages 19 to 30 combined (but not for 12^{th} graders and those over age 30), and the five-year increase between 2015 and 2020 for 19-30 year olds was also significant as noted above. Between 2015 and 2020 use increased unevenly for those aged 21-30 (reaching 5.4-10% in 2020), and either leveled or declined for most other age groups (Figure 5-9). This recent continued increase, at least for those in their early- to late-20s, suggests a possible resurgence in cocaine use since the relapse that started in the early 1990s.

  Crack use was added to the 12^{th} graders' questionnaires in 1986 and to the follow-up questionnaires in 1987. The decline in annual crack use, which began right after the introduction of these questions, ended in 1991 among 12^{th} graders, and by 1994 it had ended among young adults (Figure 5-10 and Table 5-2). Among 19-30 year olds, the annual prevalence rate held at about 1%, which was down from the peak levels of just over 3% in 1986 through 1988. As was true for a number of other drugs, crack use began to rise after

1993 among 12th graders, at the beginning of the relapse phase in the epidemic, but not in the older age strata until years later, when increases were observed in a somewhat staggered pattern going up the age scale. Again, a cohort effect due to generational replacement seems to have been occurring. Since 1994, 18 year olds have had the highest-reported prevalence of use, though they have shown considerable decline since 1999. Among all young adults ages 19-30, crack use had its lowest prevalence in 2016 through 2020 (0.7% or lower, compared with 3.2% in 1986).

- Use of ***heroin*** increased appreciably in 1995 among 12th graders and young adults ages 19 to 24, but not among the older age bands (Figure 5-11). It remained at this higher plateau in these younger age bands through 2000 or 2001, before falling off some, particularly among 12th graders. Among young adults aged 19-30 as a group, annual use had previously been quite stable from at least as far back as 1986 through 1994 at 0.2% (Table 5-2), and it stabilized again at a higher level of 0.4% from 1995 through 2007; it then was 0.5-0.6% through 2013 and 0.2-0.5% through 2020.

- Among 19-30 year olds, the nonmedical use of ***narcotics other than heroin*** leveled after 1991, following a long period of slow, fairly steady decline (Figure 5-12 and Table 5-2). After 1992 twelfth graders showed an appreciable increase in use, which continued for more than a decade into 2004, while 19-20 year olds showed some increase after 1994, 21-22 year olds after 1996, 23-24 year olds after 1997, and the older age groups after 2000. Thus, cohort-related change appears to have been occurring during the 1990s and beyond for this class of drugs as well, following a long period of secular trends. In 2002, the question text was changed on three of the six questionnaire forms to update the list of examples of narcotic drugs other than heroin. Talwin, laudanum, and paregoric, each of which had negligible levels of use by 2001, were replaced by Vicodin, OxyContin, and Percocet. As a consequence of this revision, reported prevalence increased in 2002 as may be seen in Figure 5-12. Data presented for 2002 are from three of the six questionnaire forms with the new wording (which showed higher prevalence than the older question did). All six questionnaire forms contained the new wording beginning in 2003, so the data presented for 2003 onward are based on all forms. Although the older version of the question showed no significant changes occurring in 2002, there was a significant increase in narcotics use observed in 2003 (based on the new question in both 2002 and 2003). Among 19-30 year olds, annual prevalence reached a peak level of 8.9% in 2006; it has since fallen considerably to 2.6% in 2020 (as discussed above, five-year declines were significant). Some turnaround was observed among 19-22 year olds after 2004 in the use of this important class of drugs, but use continued to rise in some of the older age bands through 2007 to 2009, likely reflecting a cohort effect. Use of these drugs remained relatively high in all age groups studied here through about 2009 and 2010, and has since declined considerably for all age groups 18-35, dropping by at least half through 2020, at or near lowest levels over the past decade (to 2.1-2.6% for 18-26 year olds, and 3.1-4.2% for 27-35 year olds in 2020). Among 40-50 year olds, annual use has fallen somewhat over the past decade from 4.0-5.0% in 2010 to 1.8-3.1% in 2020; annual use among 55 and 60 year olds has been low and fairly level since we included these ages in the study (ranging from 1.8% to 3.1%). Overall, in the past few years, use of this important class of drugs has decreased for most age groups, and especially so in the younger age groups.

- The annual prevalence for ***Vicodin*** and ***OxyContin***, first measured in 2002 (separately from the general question about narcotics other than heroin), was appreciable (8.0% and 1.7%, respectively) for 19-30 year olds (Table 5-2). Increases were observed for these two drugs in subsequent years, followed by more recent declines. Among 19-30 year olds, the annual prevalence of ***OxyContin*** use rose from 1.7% in 2002 to an all-time high of 4.6% in 2009, and it has since declined fairly steadily to 2.2% in 2020 (as noted above, the five-year trend was level). ***Vicodin*** use (Table 5-2) initially rose by less, but started from a higher base, with annual prevalence increasing slightly among 19-30 year olds, from 8.0% in 2002 to 9.2% in 2009, followed by a fairly steady decline to 1.8% by 2020 (as summarized above, the five-year decline was significant). Thus, since 2009 the annual prevalence of both OxyContin and Vicodin among young adults has declined by over half. Given the widespread concern about these narcotic drugs, which are among those most cited in overdose deaths, this downturn is very good news.

- In the late 1970s, the annual nonmedical use of ***amphetamines*** rose some with age beyond high school, but after a long period of secular decline in use from 1981 to the early 1990s, this relationship had reversed (see Figure 5-13). The declines were greatest in the older strata and least among 12th graders, even though use decreased substantially in all groups. As was true for many illicit drugs, amphetamine use began to rise among 12th graders after 1992, and eventually among the 19-24 year olds; but there was only a small increase among 25-30 year old respondents. In other words, another cohort-related pattern of change was beginning to emerge in the 1990s for amphetamines, and the increase in use has really only developed since 2006 among the 25-30 year olds as can be seen in Figure 5-13. While amphetamine use declined a fair amount among 12th graders between 2002 and 2009 (from 11.1% to 6.6%), there was less proportional decline among 18-20 year olds and really no decline among the 21-55 year old age strata. After 2009 there was some resurgence in use through about 2014 and 2015, particularly among the younger age groups in 12th grade and college age. It may well be that the use of amphetamines for studying was what caused this resurgence. In the past five years, as discussed above, annual use declined nonsignificantly for 19-30 year olds to 6.6% in 2020; the decline was especially apparent for 19-22 year olds (to 5.6-7.5% in 2020), with little change for 23-30 year olds (4.9-8.5% in 2020) and for 35-55 year olds (0.8-3.5% in 2020). Thus, while there have been some important declines in recent years for 18-22 year olds, the older age groups have shown relatively little change. For several earlier years, the age differences in amphetamine use through age 50 have been of considerable magnitude and mostly ordinal; however, over the past decade, it has been curvilinear, with use being highest most years among 21-22 year olds. (See the table accompanying Figure 5-13.)

- Since 1990, when it was first measured, use of ***crystal methamphetamine*** (***ice***) has remained at low levels in the young adult population (Figure 5-14). However, among 19-30 year olds combined, annual prevalence rose from 0.4% in 1992 to 1.6% by 2005 (Table 5-2). (Use had been rising among 12th graders and 19-20 year olds specifically between 2000 and 2002, reaching peak levels, but since then their use has declined to low levels.) For 19-30 year olds, use declined unevenly from 2005 through 2019, reaching 0.6% in 2019. (Given the low prevalence and to make room for questions regarding other drugs, we discontinued asking about this drug in 2020.) General ***methamphetamine*** use was first

measured in 1999; its use was stable until 2005 among 19-30 year olds, with annual prevalence fluctuating between 2.1% and 2.7%. Use has declined since then to 0.8% by 2020 (Table 5-2). (Use of these drugs is not asked of those over age 30.)

- ***Sedative*** (***barbiturate***) use (Figure 5-15) outside of medical supervision showed a long-term parallel decline in all age groups covered through the late 1970s and 1980s, leveling by about 1988. While use then remained low and quite level for most of the age bands for about five years, it began to rise by 1993 among 18 year olds, by 1995 among 19-20 year olds, by 1997 among 21-22 year olds, by 1998 among 23-24 year olds, by 2001 among 25-28 year olds, and by 2005 among 29-30 year olds. The same cohort-related pattern of change seen during the 1990s for many other drugs also exists for sedatives (barbiturates); like most other drugs, this pattern was preceded by a long period of secular change during which all age groups moved in parallel. Sedative (barbiturate) use declined steadily among 18 year olds after 2005, among 19-20 year olds after 2008, and among 21-22 year olds after 2009, suggesting another cohort effect. While use leveled off among most age groups by 2005, the 35, 40, and 45 year olds all showed increases in sedative (barbiturate) use between 2006 and 2008. However, their use leveled for several years after 2008 and showed modest uneven change through 2020 (when annual prevalence for the 35-60 year olds was 2-3%). Over the past decade (2010-2020), annual use declined or leveled for all age groups. The 12th graders have consistently had the highest annual prevalence for nonmedical sedative (barbiturate) use, though their continued decline has resulted in relatively little differences among the age groups in 2016 through 2020. In 2020, there was little variation by age, with annual prevalence ranging from 1.4% to 2.8%.

- Annual nonmedical use of ***Tranquilizers*** (Figure 5-16) followed a similar pattern to that just described for sedatives (barbiturates). One difference is that the 12th graders' annual prevalence rate has not always been the highest among the various age groups, as was the case for sedatives (barbiturates), although it was highest between 1994 and 2000, during the relapse phase of the epidemic, as a result of a greater increase in tranquilizer use among the 12th graders than in the young adult strata. Since about 2004, however, as use rose and then leveled among those in their early 20s, the 12th graders no longer stood out as having the highest rate of tranquilizer use. In fact, the 21-22 year olds or 23-24 year olds had the highest rate in 2005 through 2009; in 2011, the 25-26 year olds had the highest rate; and in 2012 the 27-28 year olds had the highest rate of use. Use then increased among the 29-30 year olds, who had the highest rate in 2015. This was another clear example of a cohort-related pattern of change. Since about 2011 and 2012, use has declined somewhat for 18-35 year olds (as summarized above, the five-year decline was significant for 19-30 year olds), and leveled for those aged 40 and older. In recent years, there has not been much differentiation in annual use across ages 18 to 60 (it ranged from 2.7% to 4.3% in 2020).

- Use of ***anabolic steroids*** has been substantially lower after high school than during 12th grade (Figure 5-17), ever since measures were first introduced in 1991 (in two follow-up questionnaire forms). The age-related differences are not consistent; prevalence among the young adult strata are all quite low and do not appear to trend in any systematic way. (In general, as covered in *Volume I,* it seems that the rise in steroid use from 1999 to 2003 among 8th and 10th graders and from 2001 to 2004 among 12th graders was largely specific

to those age groups.) Annual prevalence in 2018 were very low for respondents in all young adult strata of ages 19-30 (ranging from less than 0.1% to 1.0%). Due to the low prevalence, and to make room for questions about other substances, we stopped asking this question in 2019.

- ***Alcohol*** trends for the older age groups (Figures 5-18a–d) have been somewhat different than for the younger age groups and in some interesting ways. For *annual* and *30-day* prevalence, the declines for the two youngest age strata (12th graders and those one to two years past high school) during the 1980s were greater than for the older age groups. These differential trends were due in part to the effects of changes in minimum drinking age laws in many states – changes that would be expected to affect primarily the age groups under age 21. However, because similar (though weaker) trends were evident among 12th graders in states that maintained a constant minimum drinking age of 21, the changed laws cannot account for all the downward trends, suggesting that there was also a more general downward trend in alcohol consumption during the 1980s.[17] By 1994, the declines in 30-day prevalence had slowed or discontinued for virtually all age groups until 1997, when they began to turn downward again for 12th graders, and 1999, when they began to decline among 19-20 year olds. The long term declines in the 30-day prevalence of alcohol use have been substantial – from 72% in 1980 to 34% in 2020 among 18 year olds, and from 77% in 1981 to 42% in 2020 among 19-20 year olds. Since about 1997, as the declines continued in the under-21 groups (that is, those under the minimum legal drinking age), no such declines occurred among the 21 and older groups through 2019; in fact, there was some leveling or modest increases in use among 21-30 year olds through 2019, with a significant decline in 2020 as discussed above (to 65%). Among those 35 and older, there have been consistent increases (since MTF respondents first reached that age) through 2019, with some modest decline for most in 2020 (to 62-74% in 2020). These trends have resulted in substantial differences in 30-day drinking prevalence in 2020 between 18-20 year olds (34-42%) and 21-60 year olds (62-74%) – with much larger differences than when we first looked at teens and young adults in the 1980s. Thus the divergence between those below age 21 and those ages 21 and older has grown larger over many years. This suggests that the law change passed by Congress in 1984 requiring all states to adopt 21 as the minimal drinking age has had ever-increasing impact as years have passed, perhaps because it has led to some increase in the dangers attached to drunk driving, in peer norms against drunk driving, and in stringent enforcement on alcohol purchasing by those who were underage (deduced from substantial decreases in their reported ease of access to alcohol).[18]

- ***Binge drinking*** has continued an uneven but substantial decline for 18 and 19-20 year olds since the early 2000s through 2020, reaching the lowest levels ever in 2018 for 18 year olds (14%) and in 2020 for 19-20 year olds (17%), down from the all-time highs in 1981 of 41% and 43%, respectively (Figure 5-18d). Respondents three to four years past high school show the smallest downward trend since the early 1980s, but even this age group

[17] O'Malley, P. M., & Wagenaar, A. C. (1991). Effects of minimum drinking age laws on alcohol use, related behaviors, and traffic crash involvement among American youth: 1976–1987. *Journal of Studies on Alcohol, 52,* 478–491.
[18] Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). Monitoring the Future national survey results on drug use, 1975-2020: Overview, key findings on adolescent drug use. Ann Arbor: Institute for Social Research, The University of Michigan.

has shown declines in the past decade from 41% in 2009 to 31% in 2020. One important segment of that age stratum is composed of college students, and they have shown less decline in alcohol use over the past four decades (see Chapter 9, which also shows prevalence of and trends in ***high intensity drinking***). As discussed above, binge drinking among 19-30 year olds decreased a significant 3.8 percentage points between 2019 and 2020, reaching an all-time low of 28% (and the one-year declines were evident in each embedded age group, ranging from 2.1 to 5.2 percentage point decreases).

Across the life of the study, declines in binge drinking have been modest among those aged 23-30. Note that the binge drinking trend lines for different age groups (Figure 5-18d) are spread out on the vertical dimension, reflecting large and persisting age differentials (age effects) in this behavior. The relationship with age is curvilinear, however. In the past decade, the 21-26 year olds have consistently shown the highest levels of binge drinking (31% in 2020). Binge drinking had been gradually increasing since the early 2000s through about 2008 among 25-30 year olds, perhaps reflecting a cohort effect that emerged during the period of increasing adolescent binge drinking in the early 1990s, but this has leveled or declined some in recent years for this age group (27-32% in 2020). Among those aged 35 to 55, binge drinking has shown some uneven increases over the years, although it declined for most of these ages in 2020 (20-26% in 2020).

From the early 1980s through the mid-1990s, prevalence of ***daily drinking*** (Figure 5-18c) fell by considerable proportions in all age strata for which we have data, reflecting a secular trend and an important change in drinking patterns in the culture. Among 19-30 year olds combined, daily drinking declined from 1987 (6.6%) to 2000 (4.1%), and has since ranged between 5.6% and 3.8%; over the past five years, it was level, but it increased significantly between 2019 and 2020 by 1.1 percentage points to 5.3% (Table 5-4). Daily drinking prevalence now shows a fairly linear age trend, and has generally been highest for 55 and 60 year olds in recent years, whereas daily drinking has declined substantially among 18 year olds and 19-20 year olds over the life of the study. By 2020 there was a considerable difference among the age strata in prevalence of daily drinking, ranging from 1% among 19-20 year olds to 11-13% among 45, 50, 55, and 60 year olds. In addition to daily drinking increasing among 19-30 year olds between 2019 and 2020, it also increased among 35-60 year olds by 0.7 to 4.6 percentage points.

It is worth noting that the 35, 40, 45, 50, 55, and 60 year olds have had among the lowest prevalence of binge drinking but among the highest prevalence of daily drinking in recent years. These patterns – particularly the high level of daily drinking – likely reflect age effects as well as perhaps some enduring cohort differences (because these cohorts had considerably higher prevalence of daily drinking when they were in high school). They may also have been influenced by the widely disseminated medical findings that suggest that one or two drinks per day for males and one per day for females have some benefits

for heart health.[19,20] That may be a more salient message for those who are in their forties or above than for younger people. Whether there really are such health effects has been questioned since.[21,22]

- The prevalence levels for ***cigarette smoking*** show more complex trends than most other substances, due to the long-term presence of both cohort and age effects, plus slightly different patterns of such effects on the several different measures of smoking during the past 30 days (one or more cigarettes per month, one or more cigarettes per day, and a half pack or more of cigarettes per day).

  In the earlier years of MTF, the curves across time were of the same general shape for each age band (Figures 5-19a–c), but each of those curves tended to be displaced to the right of the immediately preceding age group, which was two years younger. The pattern is clearest in Figure 5-19c (half pack plus per day) during the late 1970s and 1980s. This pattern is very similar to the one described in *Volume I* for lifetime smoking prevalence for various grade levels *below* senior year; it is the classic pattern exhibited by a cohort effect,[23] and we believe that the persisting cohort differences likely are due to the dependence-producing characteristics of cigarette smoking.

  The declining levels of cigarette smoking observed in the 12th grade classes of 1978 through 1981 were later observable in the early-30s age band, as those same high school graduating classes grew older (Figures 5-19b and c). This was true at least through about 1991. By then there had been a considerable convergence of prevalence estimates across age groups, largely because there were few cohort differences among the senior classes who graduated from the early to mid-1980s through the early 1990s – a period of fairly level cigarette use in high school.

  In addition to these cohort differences, there are somewhat different age trends in which, as respondents grow older, the proportion smoking at all in the past 30 days declines some, while the proportion smoking a half pack per day actually increases. Put another way, many of the light smokers in high school either transition to heavier smoking or quit smoking.[24-26]

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[19] Manttari, M., Tenkanen, L., Alikoski, T., & Manninen, V. (1997). Alcohol and coronary heart disease: The roles of HDL-cholesterol and smoking. *Journal of Internal Medicine, 241*, 157–63.

[20] Savolainen, M. J., & Kesaniemi, Y. A. (1995). Effects of alcohol on lipoproteins in relation to coronary heart disease. *Current Opinions in Lipidology, 6*, 243–50.

[21] Keyes, K., & Miech, R. A. (2013). Commentary on Dawson et al. (2013): Drink to Your Health? Maybe Not. *Addiction, 108*(4), 723-724.

[22] Goulden, R. (2016). Moderate alcohol consumption is not associated with reduced all-cause mortality. *The American Journal of Medicine 129*, 180-186.

[23] O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976–1986. *American Journal of Public Health, 78*, 1315–1321.

[24] To illustrate, in the graduating class cohort of 1976, 39% were 30-day smokers in senior year, 39% by ages 19 to 20, but only 29% by ages 29-30 – a net drop of 11 percentage points over the entire interval. By way of contrast, 19% of that class was half-pack-a-day smokers in senior year, 24% by ages 19 to 20, and 22% at ages 29-30 – a net gain of five percentage points and three percentage points over the respective intervals.

[25] Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates.

[26] Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002). *The decline of substance use in young adulthood: Changes in social activities, roles, and beliefs*. Mahwah, NJ: Lawrence Erlbaum Associates

The picture was further complicated in the 1990s when it appeared that a new cohort effect emerged, with smoking among adolescents rising sharply (beginning after 1991 for 8th and 10th graders and after 1992 for 12th graders). The 19-20 year olds soon showed a rise at the beginning of the 1990s – perhaps responding to some of the same social forces as the adolescents (including the Joe Camel advertising campaign); but 21-24 year olds did not show an increase until about 1995, and 25-26 year olds until about 1996. Young adults over age 26 showed a modest increase from 1997 through 2004, but a decline in use since then; it is quite possible that an upward cohort effect was at least partially offset by a downward secular trend during this period.

After about 1999, smoking prevalence among nearly all age groups leveled or declined, suggesting that societal forces may be affecting all age groups in a similar way, giving rise to a secular trend. Large increases in the price of cigarettes were important. The tobacco settlement between the state attorneys general and the major tobacco companies likely played a critical role, because the industry had to raise prices in order to recoup their very substantial losses in the settlement. Price increases also were due at least in part to sales tax increases[27] and later federal excise taxes. In addition, there was a great deal of adverse publicity for the tobacco industry along with the introduction of the national anti-smoking campaign of the American Legacy Foundation, an increase in state and national anti-smoking advertising, the demise of the Joe Camel campaign and all billboard advertising, and the imposition of no-smoking regulations in many public and workplace settings by states and municipalities. From 2003 through 2020, 30-day, daily, and half-pack smoking have all declined among 35, 40, and 45 year olds; recent trends among 50 and 55 year olds have shown some modest declines (Figures 5-19a through 5-19c). In sum, there have been very substantial declines in smoking among all age groups. Since smoking is the leading cause of preventable death and disease in the country, these improvements are extremely important for population health and longevity.

- Apart from cigarettes, none of the other drugs included in the study showed a clear long-term pattern of enduring cohort differences in the earlier years of MTF (the 1970s and 1980s), despite wide variations in their use by different cohorts at a given age. There was one exception for ***daily marijuana*** use (long-term trends are summarized above, but we give them more detail here by way of contrast with cigarette smoking trends). A modest cohort effect was observable for daily marijuana use (Figure 5-3c) during the late 1970s and early 1980s.[28] But as subsequent classes leveled at lower prevalence of use, evidence for the cohort effect faded. The emergence in the 1990s of a new epidemic of marijuana use among teens once again yielded a strong pattern of cohort effects. As can be seen in Figure 5-3c, daily use rose sharply among 12th graders and 19-20 year olds after 1992, among 21-22 year olds after 1993 with a sharp rise occurring in 1997, among 23-24 year olds after 1998, among 25-26 year olds after 2000, among 27-28 year olds in 2003, among 29-30 year olds in 2005, among 35 and 40 year olds in 2006, and among 45 year olds in 2007. This is not unlike the pattern of change for cigarette smoking that occurred in the 1990s (Figure 5-19a). The cohort effect for daily marijuana use may be attributable, in part,

[27] Huang, J., & Chaloupka, F. J. (2012). *The impact of the 2009 federal tobacco excise tax increase on youth tobacco use.* NBER Working Paper 18026. National Bureau of Economic Research, Cambridge, MA.
[28] O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976–1986. *American Journal of Public Health, 78,* 1315–1321.

to the very strong association between that behavior and regular cigarette smoking. The net effect of all of this is that a considerable age difference has emerged in current daily marijuana use since the early 1990s, when there was practically no difference. The cohort effect resulting from the rise in use among 18 year olds in the latter half of the 1990s has been working its way up the age spectrum, and in 2010 was observable in the form of a significant increase among 35 year olds (more recent trends in daily marijuana use are discussed above).

In sum of longer-term trends in reference to cohort effects, trends up until 1992 in illicit drug use were highly parallel across 12th graders and young adult age groups, indicating a secular trend. (Cigarettes and alcohol showed a different pattern.) Since 1992, however, there has been considerable divergence in the trends for different age bands on a number of drugs as use among adolescents rose sharply, followed by subsequent rises among 19-20 year olds, 21-22 year olds, and so on. This divergence indicated a new cohort effect, quite possibly reflecting a generational forgetting[29] of the dangers of drugs by the cohorts who reached senior year in the early to mid-1990s. Data discussed in Chapter 6, "Attitudes and Beliefs about Drugs among Young Adults," provide additional evidence for this interpretation.

TRENDS FOR DEMOGRAPHIC SUBGROUPS OF YOUNG ADULTS

In this section, we examine trends among 19-30 year olds by three different subgroupings: gender, (using four-year age bands), region (by Midwest, Northeast, South, and West for 19-30 year olds combined), and population density (from very large city to farm/country for 19-30 year olds combined). (Subgroup data are not presented for the ages above 30.) In previous versions of this volume's chapter and the associated occasional papers,[30,31] we considered regional subgroup differences for 19-28 year olds combined (rather than ages 19-30 combined as we do here) and population density by age bands (rather than by ages 19-30 combined as we do here). All tables and figures in this year's chapter have been updated retroactively to include ages 29 and 30 for the regional subgroup considerations and to include ages 19-30 combined for the population density considerations. These various subgroup data are not presented in tables or figures in this volume because of the substantial amount of space they would require. However, for the reader interested in more detail, they are available in a separate MTF Occasional paper. Subgroup data on young adults through 2020 are available in *MTF Occasional Paper 96*. That document contains both tabular and graphic presentations of the data, with charts that are easy to read and help illustrate the synopsis of trends through 2020 for young adults presented below.

Gender Differences in Trends

- Note that subgroup data for young adult women and men are available for 19-22 year olds since 1980, 23-26 year olds since 1984, and 27-30 year olds since 1988. Over the long

[29] Johnston, L. D. (1991). Toward a theory of drug epidemics. In L. Donohew, H. E. Sypher, & W. J. Bukoski (Eds.), Persuasive communication and drug abuse prevention (pp. 93-131). Hillsdale, NJ: Lawrence Erlbaum.
[30] Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume II, college students and adults ages 19-60.* Ann Arbor: Institute for Social Research, The University of Michigan.
[31] Johnston, L. D., Schulenberg, J. E., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2020). *Demographic subgroup trends among young adults in the use of various licit and illicit drugs, 1988-2019* (Monitoring the Future Occasional Paper No. 95). Ann Arbor, MI: Institute for Social Research, University of Michigan.

term, gender differences narrowed for some drugs among young adults in each of these three age bands (19-22, 23-26, 27-30), primarily when a steeper decline in use among men (who generally had higher rates of use) occurred in the 1980s. The overall picture, though, is one of parallel trends, with use among men remaining consistently and moderately higher for most drugs, including the indexes of annual use of ***any illicit drug*** and of ***any illicit drug other than marijuana***,[32] although in the past few years, trends in the former have converged for men and women (see Table 5-5, which lists prevalence for 19-30 year olds separately by gender, for example, and Figures 1 and 4 in *Occasional Paper 96*). In general, the gender gap for 19-22 year olds annual prevalence of any illicit drug has been somewhat narrower than in the other age bands across the years through 2020 (but note that the trends for the three age bands are not always plotted on the same scale in the figures).

- The downward trend in ***marijuana*** use among 19-22 year olds between 1980 and 1989 was also a bit sharper among men than women, narrowing the gap between the two groups. Annual prevalence fell by 22 percentage points (to 34%) among men, compared to a drop of 14 percentage points (to 31%) among women, leaving a difference of three percentage points (Figure 7 in *Occasional Paper 96*). From 1995 through 2019, the gender gap was between 4 and 12 percentage points most years in all three age groups – that is, for 19-22 year olds, 23-26 year olds, and 27-30 year olds. However, men and women converged since 2016 for the 19-22 year olds, and since 2019 for the 23-26 year olds. Otherwise, in general, across the years the trends have been parallel for men and women in each age group. In the past five years (2015-2020), annual use has increased especially for older young adults. It increased 3 percentage points for men to 43% and 7 percentage points for women to 44% among 19-22 year olds; among 23-26 year olds, it increased 6 percentage points for men to 44% and 15 percentage points for women to 45%; and among 27-30 year olds, it increased 14 percentage points to 41% for men and 13 percentage points for women to 36%. The 2020 annual prevalence for men and women in each age group were at or near historic highs since the late 1980s. Similar trends and gender differences or similarities were evident in 30-day prevalence of marijuana (see Figure 8 in Occasional Paper 96).

- New questions about ***vaping marijuana*** were added to two of six forms of the young adult surveys in 2017 and 2018, to four forms in 2019, and to all six forms in 2020. In each year, *annual* and *30-day* prevalence was higher for men than for women, and both increased substantially through 2019 for men and women, with some leveling or decrease evident in 2020. *Annual* prevalence of vaping marijuana for 19-30 year old men and women was 16% and 9%, respectively, in 2017, 17% and 14% in 2018, 26% and 16% in 2019, and 23% and 18% in 2020. Thus, between 2017 and 2019, it increased 10 percentage points for men and 7 percentage points for women, and decreased 3 percentage points for men and increased 2 percentage points for women in 2020.

  For *30-day* prevalence among 19-30 year olds combined, vaping marijuana was 9% for men and 4% for women in 2017, 10% and 7% in 2018, 16% and 11% in 2019, and 12% and 10% in 2020, showing increases of 7 percentage points for both men and women

[32] See Chapter 3 for discussion of legal status of marijuana and our terminology.

between 2017 and 2019, and 4 and 1 percentage point decreases for men and women, respectively, in 2020. Regarding men and women in the three young adult age groups, 30-day prevalence was similar within gender across the age groups in 2017 (7.9-9.3% for men, 3.6-4.8% for women) (Figure 110 in *Occasional Paper 96*). In 2018, the two younger age groups were similar (11-13% for men, 8.5-8.8% for women), each showing one-year increases, but 30-day use did not change much in 2018 among age 27-30 men (7.6%) or women (5.0%). In 2019, 30-day vaping marijuana increased for both men and women among 19-22 year olds (to 16% and 14%, respectively), remained fairly level among 23-26 year old men and women (15% and 9.2%), and increased significantly among 27-30 year old men and women (18% and 10%). In 2020, it decreased somewhat for men and women among 19-22 year olds (to 15% and 12%), decreased somewhat for men and increased slightly for women among 23-26 year olds (to 12% and 10%), and decreased significantly for men and decreased somewhat for women among 27-30 year olds (to 10% and 7.7%). Thus, across the three age groups of young adults, 30-day marijuana vaping increased between 2017 and 2019 by 6.2 to 8.4 percentage points for men and by 4.4 to 8.9 percentage points for women; in 2020 it decreased 0.8 to 7.6 percentage points for men, and decreased 1.8 to 2.5 percentage points for 19-22 and 27-30 year old women and increased 0.8 percentage points for 23-26 year old women. Throughout, the 30-day prevalence of vaping marijuana has been somewhat higher for men than for women in all three age groups.

- Across the years ***daily marijuana*** use has been consistently higher among men than women in all three age groups. Between 1980 and 1993, daily marijuana use for the 19–22 age group fell from 12.9% to 2.9% among men, and 6.1% to 1.7% among women, narrowing the rather large gap that existed in the early 1980s (Figure 9 in *Occasional Paper 96*). As overall use rose after 1993, the gap widened again. Among 23-26 year olds, as daily use first began to increase in 1998 and 1999, the gap between the genders began to widen. In the oldest age group (ages 27–30), the difference had been fairly constant, with daily marijuana use among men generally being about two percentage points higher than among women through 2005. As use rose between 2006 through 2020, the gender gap within the age groups widened somewhat to between three and four percentage points for most years. Consistent with what is true for other marijuana use trends, *daily marijuana use in 2020 was at or near historic highs for both men and women across the three young adult age groups*, at 12% and 7.5% respectively for 19-22 year olds, 12% and 9.3% for 23-26 year olds, and 11% and 7.9% for 27-30 year olds.

- In all three age bands, use of ***synthetic marijuana*** by men has tended to be higher than use by women. In 2011, when use was first measured, it was highest among the 19-22 year olds with men higher than women; it has fallen sharply since 2011 for both genders in all age groups and the gap between them has closed considerably (Figure 14 in *Occasional Paper 96*). Annual prevalence in 2020 for the 19-22 age group was 1.3% for men and 2.2% for women. The two older age bands started out with considerably lower rates in 2011, but also have shown some uneven decline since then for men and women to 1-2% for men and 0-1% for women in 2020.

- For ***LSD***, men have consistently had higher rates of use than women (Figure 22 in *Occasional Paper 96*). Among 19-22 year olds, the male–female differences tended to

diminish as use declined (from 1980 to 1985 and again from 1999 to 2004) and expand as use increased (1986–1995). Since 2011, the gender gap has widened again as use has increased somewhat, with men having about twice the level of women; annual prevalence in 2020 for men and women were at or near the highest levels since 1995 for men and 2001 for women, at 9.0% and 4.4%, respectively (for men, use increased a significant 3.9 percentage points in 2020). In the two older age bands, use has been lower and there has been less change in use; gender differences had been relatively consistent (with men higher) since data have been available, beginning in 1984 for 23-26 year olds and in 1988 for 27-30 year olds. After 1999 and 2001 for the two older groups, respectively, overall LSD use dropped, substantially narrowing the gender differences. Men began to show these declines first, and both genders moved to almost no use of LSD between 2003 and 2009. Beginning in 2009 among the 23-26 year olds, use increased unevenly for men through 2017, widening the gender gap, with women showing some increase through 2016; in 2018 and 2019, men showed uneven change (to 4.9% in 2019) and women were level (2.3% in 2019); and in 2020, men increased 1.3 percentage points (to 6.1) and women increased a significant 2.2 percentage points (to 4.4%). Similarly, the gender gap among 27-30 year olds in annual use of LSD began to widen again after 2012 as use increased more for men than women through 2018; between 2018 and 2020, it decreased unevenly for men and women (to 3.8% and 1.7% in 2020, respectively).

- Use of ***hallucinogens other than LSD*** taken as a group has consistently been considerably higher among men in all three age strata with the difference growing larger when use increased some in the late 1990s and early 2000s (Figure 25, *Occasional Paper 96*). The differences have been greatest in the youngest of the three age strata and least in the oldest one. Use and gender differences were relatively level for several years through 2016. Since 2016, men and women in each age group showed uneven increases through 2020. Between 2019 and 2020, it increased significantly for women in each age group (to 4.8%, 5.0%, and 3.5%, respectively) and increased modestly for men in the two younger age groups (to 8.1% and 7.0%, respectively); it decreased slightly for age 27-30 men (to 3.8%).

- ***MDMA (ecstasy*** and more recently ***Molly***) exhibited little or no gender difference in any of the three age bands before use began to grow in the late 1990s (Figure 28 in *Occasional Paper 96*). Between then and 2009, there was little gender difference in MDMA use among 19-22 year olds. From 2009 through 2016, use rose some for men, slightly widening the gender differences; but in the past four years, use declined and leveled among men reducing the gender difference (5.1% for men, 4.2% for women in 2020). In the oldest age group, a gender difference opened up after 1997, with men fairly consistently having higher rates of use among 27-30 year olds, though the gap closed completely after 2016. From about 2009 to 2016, use among 23-26 year olds rose unevenly for both genders with little consistent difference between men and women. Among 23-26 year olds between 2016 and 2020, annual use increased unevenly for men (to 6.2% in 2020) and leveled for women (at 4.4% in 2020). Among 27-30 year olds between 2016 and 2020, annual use decreased unevenly for men (to 3.8% in 2020) and increased for women (to 4.1% in 2020).

- The annual prevalence of ***salvia*** use (Figure 31 in *Occasional Paper 96*) was much higher among men in the 19-22 year olds when first measured in 2009, and somewhat higher among men in the two older age groups . However, use by men has dropped dramatically in the years since, such that use has become negligible in recent years (0.5-1.1% for men, and 0.0-1.0% for women in 2020).

- Men have had higher rates of ***cocaine*** use than women since MTF began. During the period of sharp decline from the peak levels in annual cocaine prevalence (1986–1993), use dropped more among men than women, narrowing the gender differences that existed (Figure 34 in *Occasional Paper 96*). In the 19-22 year old age band, by 1993 annual prevalence for men had declined by 16 percentage points (to 4.5%) versus 13 percentage points among women (to 2.8%). In the 23-26 year old age band, there was also a narrowing of the gender difference between 1986 and 1993, with annual prevalence down 19 percentage points among men (to 6.9%) and 13 percentage points among women (to 4.2%). Use in the 27-30 year old group also dropped faster among men between 1988 (when data were first available) and 1997 – down 13 percentage points versus 7 among women. In sum, during the period of sharp decline in overall cocaine use, the gender differences – which had been fairly large – narrowed considerably in all three of these age bands. During the resurgence in cocaine use of the 1990s and into the early 2000s, which occurred on a somewhat staggered basis over the years, the gap between genders expanded only slightly. In the past decade, annual use has increased somewhat especially among the two older age groups, with gender differences remaining fairly consistent over time within each age group; as indicated above, annual use increased significantly during the past five years (2015-2020) for young adults overall. Over the past five years, among the 19-22 year olds, annual use was fairly level for men (6.2% in 2020) and for women (4.2% in 2020); among 23-26 year olds, it increased for both men (to 13% in 2020) and women (to 7.3% in 2020); among 27-30 year olds, use increased somewhat for men (to 7.0%) and women (to 5.2%).

- ***Crack*** followed a similar pattern during the earlier period of decline, though the proportional difference between the two genders had been consistently higher than for cocaine overall in the first decade of measurement (Figure 37 in *Occasional Paper 96*). With crack, though, there was some gender convergence (between 1992 and 1998) among 19-22 year olds, as use among men declined slightly and use among women rose gradually; the genders converged somewhat for the two older groups in the late 1990s. After 1999, there was no consistent change for some years in differences between men and women. In all three age bands, men consistently had slightly higher crack usage rates, at least until a greater decline among men in recent years has nearly eliminated the gender differences and brought all of the annual prevalence levels at or below 1% (with the exception of a nonsignificant increase for 23-26 year old men to 2.6% in 2020).

- There have been modest gender differences in ***heroin*** use (Figure 40 in *Occasional Paper 96*) for all of the three age groups of young adults in recent years, with men generally having higher rates of use than women. There was very little gender difference when the project first reported results for young adults in the 1980s, and differences emerged only when heroin prevalence rose in the last half of the 1990s during the relapse phase of the

drug epidemic. As of 2020, annual prevalence ranged between 0.0% and 0.8% across both genders in the three age groups.

- Among 19-22 year olds, both genders showed some decline in their use of ***narcotics other than heroin*** not under a doctor's orders (nonmedical use)[33] between 1980 and 1991, with a near elimination of previous gender differences (men had been higher) (Figure 43 in *Occasional Paper 96*). Beginning in 1994, use by men began to rise in this age group, while use by women began to rise a year later. Some gender differences developed as use increased, with use by men being higher; after 2006, as use declined steadily, there was a smaller difference especially in the last four years, with annual prevalence in 2020 at 1.7% for men and 2.3% for women. The picture for 23-26 year olds is very similar except that the increase in use occurred a few years later (in 1997 and 1998). The gender difference (men higher) had been eliminated by 1988, but re-emerged after 1995 as use increased more among men. Since 2010, use has declined for both genders, with a consistent gender difference of about 2 percentage points until 2019 and 2020 when men and women converged (2.9% and 2.3% in 2020, respectively). Among 27-30 year olds, there has been a smaller gender difference and the least increase in use in the early 2000s (compared to the other two age groups). Still, use increased for both genders after 1999, leveled in the mid-2000s, and decreased through 2020 (to 3.3% for men, 3.0% for women), with uneven gender differences the past several years. By 2020 men and women have converged in each of the three age groups in their annual prevalence of using narcotics other than heroin, eliminating longstanding gender differences.

- Since 2002, the first year in which the survey gathered data on nonmedical use of ***OxyContin***, its use has generally been higher among men than women for all three age bands except in the past few years (Figure 46 in *Occasional Paper 96*). Both genders showed some increase in use between 2002 and 2009 or 2010, followed by some falloff since then in the two younger age bands. In the past few years, there have not been consistent gender differences in any of the age groups. In 2020, use was 2.9%[34] or lower for men and women in all age groups.

- Nonmedical use of ***Vicodin***, first measured in 2002, also has been higher among men in most years, except in recent years when prevalence across genders has converged. There was a somewhat larger increase in use among men in all age bands initially, but the men began to trend down earlier than the women, reducing the gap in use such that in 2015-2020 the gender difference was nearly eliminated in all three age bands; in 2020, use ranged from 1.2% to 3.2% for both genders in all age groups (Figure 49 in *Occasional Paper 96*).

[33] These and other prescription drug use questions are asked on the surveys with respect to use "not under a doctor's orders." Throughout this volume, we use the term "nonmedical use" to reflect use not under a doctor's orders. Unless otherwise indicated, our considerations of prescription drug use in this Volume concern nonmedical use.

[34] The prevalence of OxyContin, a subclass of narcotics other than heroin, is asked on three of the six questionnaire forms, whereas the prevalence of narcotics other than heroin is asked on all six forms. In 2020, annual prevalence of both was very low. Among 19-26 year olds, the annual prevalence of OxyContin was similar to the annual prevalence of narcotics other than heroin, reflecting that OxyContin is a commonly used narcotic. When annual prevalence of OxyContin slightly exceeds the annual prevalence of narcotics other than heroin (for 19-22 year old men), this is likely a matter of random sample variation due to relatively small sample sizes for OxyContin combined with the very low prevalence estimates of both.

- In general, there have been no appreciable gender differences in ***amphetamine*** use for most years in any of these three young adult age bands, although there is evidence of emerging gender differences in recent years in the two older age bands. Between 1981 and 1991, annual prevalence of nonmedical amphetamine use was similar for men and women and showed substantial and parallel downward trends for both genders (Figure 52 in *Occasional Paper 96*). Among 19-22 year olds, it dropped 22 percentage points for men (to 5.2% in 1991) and 21 percentage points for women (to 4.7% in 1991). There were small increases in annual prevalence for both genders in the 19-22 year old age group after 1991, in the 23-26 year old age group after 1995, and in the 27-30 year old age band after 2000, but the genders diverged only slightly (with men higher). At about 2008, annual amphetamine use began drifting up slowly in all three age bands, with men consistently a bit higher than women. Among 19-22 year olds, use has declined for men in the past few years (to 7.8% in 2020) and for women (at 5.6% in 2020). Among the 23-26 year olds, while use has been fairly level for women in recent years (9.0 % in 2020), it has changed unevenly for men (6.8% in 2020). Among the 27-30 year olds, it has been fairly level for women (5.0% in 2020) and increased unevenly for men (6.3% in 2020).

- Nonmedical use of ***Ritalin***, a prescription stimulant used in the treatment of ADHD, was added to MTF questionnaires in 2002 (Figure 55 in *Occasional Paper 96*). Findings for the first decade show prevalence being somewhat higher for men than women, after which gender differences have tended to be small and inconsistent. Use in 2020 ranged from 1.2% to 2.6% for both genders in all age groups.

- Like Ritalin, nonmedical use of ***Adderall*** (another prescription stimulant) has generally been slightly higher among men than women since 2009, when the question was added (Figure 58 in *Occasional Paper 96*). The largest gender difference in annual use was initially among 19-22 year olds, the age band that includes most of those in college, and this difference diminished since 2015 as use dropped for men (in 2020, it was 9.5% for men and 6.7%[35] for women). Among both 23-26 and 27-30 year olds, gender differences have been inconsistent; in recent years, annual use has been level for women (7.2% and 6.7% in the two age groups, respectively, in 2020) and has shown uneven change for men (11% and 5.6%, respectively, in 2020).

- A question on ***methamphetamine*** use was introduced in 1999 (Figure 59 in *Occasional Paper 96*); by 2011, after many years of decline, annual prevalence was at or below 1% for both genders in all age groups, and has been 1.8% or less since then. Throughout, men generally showed slightly higher prevalence than women, particularly in the first years of measurement; however, in recent years, gender differences have been small or nonexistent.

- ***Crystal methamphetamine*** (also known as ***"ice"***) was added to the study's coverage in 1990 (Figure 62 in *Occasional Paper 96*). It should be noted that the estimates are less

[35] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. In 2020, annual prevalence of both was relatively low. Among all age groups, the annual prevalence of Adderall was similar to the annual prevalence of amphetamines, reflecting that Adderall is a commonly used amphetamine. When annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamine, this is likely a matter of random sample variation due to relatively small sample sizes for Adderall combined with the relatively low prevalence estimates of both.

stable for this drug due to limited sample sizes because this substance is asked about on only two of the six questionnaire forms. In the early 1990s, use was low and very similar for both genders in all three young adult age bands. In the mid-1990s the younger two age bands showed a greater increase in annual use among men, opening a gender gap. The gap then narrowed, though men on average were slightly more likely to report use of crystal methamphetamine until 2005. From 2009 through 2019 the gender differences have been smaller and inconsistent. In 2019, annual prevalence was between 0.6% and 0.7% for women in the three age groups and between 0.3% and 1.1% for men. Because of these low levels and to make room for other drug use questions, we discontinued these questions on crystal methamphetamine use in 2020.

- Questions about the use of ***"bath salts***" – stimulant designer drugs (synthetic cathinones) meant to mimic the effects of amphetamines – were first introduced in 2012, so there are as yet only limited data on trends in their use (Figure 65 in *Occasional Paper 96*). Among 19-22 year olds in 2012 there was a large gender difference in use (annual prevalence of 3.0% among men vs. 0.5% among women); however, there was virtually no gender difference in the two older age bands that year (0.7% vs. 0.6%, respectively, among 23-26 year olds and less than 0.5% for both genders among 27-30 year olds). In 2013 the large gap between the genders among the 19-22 year olds disappeared as men that age showed a significant 2.8 percentage point decline in use. This decline coincided with a dramatic 18 percentage point increase in the perceived risk of trying bath salts (for men and women combined). A similar change in perceived risk occurred among both older groups, as well, no doubt serving to hold their usage rates very low. As of 2018, annual use was below 0.5% among both men and women in all three age bands. Consequently, this question was dropped in 2019 to make room for questions about other substances.

- As the nonmedical annual prevalence of ***sedative*** (***barbiturate***) use declined through the 1980s, the modest gender differences (men were higher) were virtually eliminated in all three age bands (Figure 68 in *Occasional Paper 96*). Beginning in the early 1990s, a staggered increase in use by both genders emerged across all three age groups, with men increasing more than women, thereby again opening a small difference in the late 1990s and into the 2000s. From about 2008 through 2020, use declined and generally leveled for men and women in the three age groups, essentially eliminating gender differences. In 2020, use ranged between 1.3% and 2.9% across both genders and all age groups.

- For ***tranquilizers***, both genders showed a long, gradual decline and very similar nonmedical annual prevalence from 1980 through about 1993 in all three age bands (Figure 71 in *Occasional Paper 96*). Beginning in 1995 in the relapse phase of the drug epidemic, use increased for both genders in the 19-22 year old group, followed by an increase beginning after 1997 among 23-26 year olds and after 1999 among 27-30 year olds, again reflecting cohort effects likely driven by generational replacement. Some gender differences emerged during these periods of increase and remained during part of the subsequent decrease after 2002 and 2003 for the two younger age bands. Men generally reported somewhat higher usage rates, though the gender differences have narrowed in recent years as use has generally declined or leveled for all three age groups. In 2020, use ranged between 2.8% and 4.0% across both genders and all age groups.

- ***Inhalant*** use has generally been quite a bit higher among men than women, particularly in the younger age groups (Figure 17 in *Occasional Paper 96*). The 19-22 year old group showed a gradual upward shift from 1980 to 1988, followed by a leveling for some years for both genders. In 1997, annual inhalant use began to decline among 19-22 year old women, followed by men in 2001; however, the gender gap did not diminish much with this decline until 2005, when there was a convergence that continued for most years through 2020 (when it was 1.5% for men and 1.1% for women). Among 23-26 year olds the gender gap widened as use by men increased between 1992 and 1999, though a subsequent decline in use among men narrowed the gap, almost eliminating it by 2005; it then re-emerged between 2008 and 2012 and diminished since then (use has shown uneven change in recent years; it was 2.1% for men and 0.4% for women in 2020). Among 27-30 year olds, use has generally been slightly higher among men than women, though the prevalence of inhalant use has been very low in this age group (2.2% for men and 0.3% for women in 2020).

- Use of three "club drugs" – ***Rohypnol, GHB***, and ***ketamine*** – has tended to be more concentrated among men in all three age strata (Figures 74, 76, and 79 in *Occasional Paper 96*), but the estimates are not very stable because of the limited numbers of cases upon which they are based. By 2009, annual prevalence levels were very low for all three drugs, and gender differences were small; this has continued to be the case in most years since then. Annual ***ketamine*** prevalence has shown some uneven change in recent years for men and women; in 2020, it ranged between 0.0% and 2.7% across both genders and all age groups. ***Rohypnol*** was dropped from the study after 2009 because of the low numbers of users (between 0.0% and 0.3%), at which point no gender difference remained in any of the three age groups (in earlier years use by men had tended to exceed use by women). ***GHB*** was dropped from the study after 2015 (when prevalence was between 0.0% and 1.1% for both genders in all age groups).

- For ***alcohol***, ***30-day prevalence*** levels (Figure 82 in *Occasional Paper 96*) exhibited a gradual, parallel decline from 1981 through 1992 for both genders in the 19-22 year old age group. Thirty-day prevalence fell from 83% to 72% among men and from 75% to 62% among women by 1992. There has been a convergence since then, beginning in the late 1990s, because use by men has declined slightly while use by women increased slightly through 2008. The gender difference was virtually eliminated in this age group by 2004 and use remained quite level since then for both genders through 2017. Between 2017 and 2020, use declined unevenly for both men and women, with the 2019-2020 decline being a nonsignificant 5.5 and 4.1 percentage points, reaching 51% and 54%, respectively. In the two older age bands, there was a more modest, parallel decline for both genders, from 1985 through 1992 in the case of 23-26 year olds, and at least from 1988 (when data were first available) to 1991 or 1992 in the case of 27-30 year olds. From 1992 through 2004, use among men in the older two age bands showed fairly level rates of use; but use among women rose gradually, narrowing the gender difference among 23-26 year olds (75% vs. 74% in 2019) and among 27-30 year olds (74% vs. 71% in 2019). However, in 2020, prevalence decreased significantly for women in both age groups and declined slightly or

was level for men; in 2020 among ages 23-26, it was 73% for men and 71% for women, and among ages 27-30, it was 75% for men and 67% for women.

Gender differences in ***daily drinking*** (Figure 83 in *Occasional Paper 96*) have been somewhat consistent over the years in each of the three age groups, with men always higher than women but gender differences decreasing gradually especially in the younger age group. Among 19-22 year olds daily drinking showed a general long-term decline from about 1981 or 1982 through about 1992, with daily use falling more among men, considerably reducing but far from eliminating what had been a large gender difference. To illustrate, in 1981, 11.8% of men reported daily use versus 4.0% of women; the comparable 1992 statistics were 5.3% and 2.7%. After 1995, daily drinking began to increase among 19-22 year olds for both genders, but leveled a few years later. From 2002 to 2005 their daily use was rising among men and falling among women, increasing their differences, but since 2005 there has been a considerable convergence with daily use among men falling and use among women increasing modestly through 2014. Men showed an increase in 2016, widening the gap; but since then, use declined for men (4.0% in 2020) and remained fairly level for women (1.0% in 2020), thus narrowing the gap (which was considerably smaller than it was in 1981 [8 vs. 3 percentage points, respectively]). The gender differences have been larger and longer lasting for the two older age groups. Although the gap diminished in 2014 for the 23-26 year olds, it widened somewhat through 2020 (to 8.9% for men vs. 4.4% for women). Among the 27-30 year olds the gender difference increased from 2000 to 2015, with use rising for both genders, to a slightly greater extent among men; it has since declined somewhat for men (10.0% in 2020) and increased unevenly for women (6.0% in 2020, which was a significant 2.8 percentage point increase over 2019).

There are also long-established and large, but narrowing, gender differences in all three age groups in the prevalence of ***binge drinking*** (Figure 84 in *Occasional Paper 96*). Men in the 19-22 year old band have shown some longer-term decline, from 56% in 1981 to 45% in 1995 to 28% in 2020 (all-time low). Binge drinking by women declined less, from 33% in 1981 to 28% in 1995 before rising some to 34% in 2006, and then back to 21% in 2020 (all-time low); with the 2019-2020 decline being a significant 7.0 percentage points. Thus, the gender gap has narrowed considerably (from 24 percentage points in 1986 to 17 percentage points in 1995 to no difference by 2019, followed by a difference of 7 percentage points in 2020 due to the decrease among women). In the two older age bands (23-26 year olds and 27-30 year olds), the sizable gender differences remained mostly stable as the binge drinking rates drifted steadily upward in both genders from the early 1990s, at least until 2009 or 2010. Among 23-26 year olds, prevalence declined for men from the all-time high of 53% in 2009 to 38% in 2020, whereas it remained more level for women during this same period (34% in 2009 to 26% in 2020). Among 27-30 year olds, prevalence declined for men from an all-time high of 47% in 2010 to 36% in 2020, and has remained fairly level for women (24% in 2020). Overall, the gender differences for all three age groups have narrowed some over the longer term, particularly among the 19-22-year-olds.

- Most striking for ***cigarette smoking*** by young adults are the similarities between the genders in both absolute levels and trends. All three age groups showed a long-term decline in ***30-day smoking*** rates for both men and women (Figure 91 in *Occasional Paper 96*). For 19-22 year olds, declines occurred from 1980 through 1991 and again since 1999; for 23-26 year olds, declines occurred from the first measurement in 1984 to 1995 and again since 2001; for the 27-30 year olds, declines occurred from 1988 through 2001 and again from about 2006 to 2020. These staggered patterns again reflect a cohort effect moving up the age scale. Among those aged 19–22 years, women had slightly higher rates of 30-day smoking until 1992; but there was a crossover and since 1994 men have had a higher 30-day prevalence of smoking. Since 1998, men 23–26 years old have had a higher 30-day prevalence of smoking than women. Among those 27–30 years old, men have generally had a higher 30-day prevalence, with the gender gap increasing some in recent years. Overall, from about 2007 through 2017, gender differences widened a bit most years in all three age groups because women showed a more consistent decline than men over the years; the gap has decreased in the past few years. In 2020, prevalence reached all-time lows for 19-22 year old men and women (8.5% and 7.0%, respectively, with the 2019-2020 decline being significant for men) and 23-26 year old men and women (13% and 8.5%, respectively). Among 27-30 year olds, prevalence reached an all-time low in 2020 for men (10%, with the 2019-2020 decline being significant) and women (11%).

  Trends in ***daily smoking*** (Figure 92 in *Occasional Paper 96*) levels have been quite parallel for men and women over most of the time for which data are available, particularly in the two younger age groups. Among 19-22 year olds there was a crossover after 1993 – before that point, women had slightly higher daily smoking rates, whereas men generally did from 1994 onward, primarily because use was rising faster among men through 1999. Both genders in this age group have shown parallel declines from 1999 through 2016; use rose nonsignificantly for both men and women in 2017 (to 8.0% and 6.1%, respectively), and then continued to decline to all-time lows 2020 (4.2% and 3.2%, respectively). Among 23-26 year olds, the genders had very similar smoking rates until men started reporting higher daily smoking rates from 1996 on. Men declined less after 1998, opening up a modest gap; however, this gap has narrowed some in recent years as smoking has declined a bit more among men. However, in 2017, use increased nonsignificantly to 13% for men, and continued to decline for women to 7.1%; it then continued to decline through 2020 reaching 5.9% for men and 5.4% for women (an all-time low for both men and women). In the oldest age band, the two genders were quite close until men opened a gap in 2002, and their rate generally remained somewhat higher through 2015. Between 2016 and 2020, use declined to all-time lows for men (5.7% in 2020) and women (7.3% in 2020).

  Smoking half-pack-a-day shows similar trends to daily smoking, though the gender differences are a little larger, with men showing higher rates than women since 1993 in the youngest age band, since 1989 in the middle age band, and since 1988 in the oldest age band, when use data for this group were first available (Figure 93 in *Occasional Paper 96*). However, all three age groups have shown a convergence by 2020, with most groups reaching all-time lows; in 2020, for men and women, it was 1.6% and 0.8% respectively among 19-22 year olds, 3.9% and 2.3% respectively among 23-26 year olds, and 3.9% and 4.6% among 27-30 year olds.

- New questions about ***vaping nicotine*** were added to the young adult surveys in 2017. In each year, annual and 30-day prevalence was higher for men than for women, and both increased in use substantially between 2017 and 2019 with some decline for men and modest increase or leveling for women in 2020. *Annual prevalence* of vaping nicotine for 19-30 year old men and women was 18% and 10%, respectively, in 2017, 20% and 14% in 2018, 29% and 20% in 2019, and 26% and 21% in 2020. Thus, just between 2017 and 2019, it increased 11 percentage points for men and 10 percentage points for women, and then declined 3 percentage points for men and increased 1 percentage point for women in 2020.

  Thirty-day prevalence of vaping nicotine for 19-30 year olds combined was 9% and 4% in 2017 for men and women respectively, 13% and 8% in 2018, 19% and 11% in 2019, and 16% and 12% in 2020, showing an increase of 10 percentage points for men and 7 percentage points for women between 2017 and 2019, followed by a 3 percentage point decrease for men and 1 percentage point increase for women in 2020. By age groups, 30-day vaping nicotine increased most between 2017 and 2019 for 19-22 year old men and women (Figure 113 in *Occasional Paper 96*): across the age groups of 19-22, 23-26, and 27-30, respectively, for men it was 11%, 18%, and 26%; for women it was 3.8%, 12%, and 17%. In 2020, 30-day nicotine vaping declined to 23% for men and increased to 19% for women. Among 23-26 year olds, 30-day prevalence across the last four years was 9.1%, 14%, 19%, and 16% for men, and 4.0%, 6.1%, 8.7%, and 11% for women; and among 27-30 year olds, it was 6.9%, 7.5%, 14%, and 10% for men, and 5.5%, 6.1%, 6.4%, and 6.4% for women.

- ***Hookah smoking*** generally has been slightly higher among men than women in all three age bands, but especially in the two older age bands; however, use has been declining and with that a convergence has taken place (Figures 98in *Occasional Paper 96*). In 2020, annual prevalence was at or near historic lows for all subgroups.

- There has been a large and fairly consistent gender difference in the use of ***small cigars***, ***dissolvable tobacco***, and ***snus,*** specifically, with men having higher prevalence levels in all three age groups – particularly in the use of snus (Figures 101, 104, and 107 in *Occasional Paper 96*).

Regional Differences in Trends

Given the focus on 19-30 year olds, trends begin in 1988 when data were first available for this age group. A question about state of residence in all follow-up questionnaires permits trend data to be calculated for the four regions of the country since then (MTF samples within these four regions initially at 12th grade, so each region is represented by these data). Regional trends have been examined for all 19-30 year olds combined to increase estimate reliability. (Each region is represented by between 800 and 2,200 weighted cases in all years. Actual case counts are somewhat higher.) By combining across all ages, we lose the ability to see the cohort effects that have occurred with many drugs, although it is unlikely that cohort effects have varied by region; instead, we are able to see whether overall trends are similar across regions. In the accompanying

Occasional Paper 96, we provide trends through 2020 by region for lifetime, annual, and 30-day prevalence, although we concentrate on annual prevalence in our synopsis here.

In general, the changes that have occurred since 1988 have been fairly consistent across regions, particularly in terms of the direction of change. The four regions of the country – Northeast, Midwest, South, and West – have generally moved in parallel.

- There were substantial drops among young adults 19-30 year olds in all four regions between 1988 (the initial measurement point) and 1991 for ***any illicit drug*** (Figure 2 in *Occasional Paper 96*). After 1991, most or all regions showed some increase and then a leveling for a number of years, followed by more recent increases through 2020. The proportions of 19-30 year olds using any illicit drug have been consistently lowest in the South and highest in the West and Northeast; but the regional differences have been fairly modest. In 2020 the West and Northeast had the highest annual prevalence at 50% and 49% respectively, and the Midwest and South were lower at 45% and 41% respectively.

- For ***marijuana*** use (Figure 10 in *Occasional Paper 96*), the South has consistently been lowest, and the Midwest consistently has been second lowest. Generally, the other two regions have been fairly close to one another in annual prevalence. However, the differences have generally not been great. The 2020 annual prevalence ranged from 36% (South) to 47% (Northeast). Regional differences in ***daily marijuana*** use have been relatively low over the years. The South has generally had the lowest levels of daily use. In 2020, daily use ranged from 8.5% (South) to 12% (West).

  New questions about ***vaping marijuana*** were added in 2017. *Annual prevalence* of vaping marijuana in 2017 was higher in the West (15%) and Northeast (14%) than the Midwest (11%) and South (8.4%) (Figure 111 in *Occasional Paper 96*). In 2018, it increased, and the same pattern of regional differences was found (23%, 18%, 12%, and 11%, respectively), and the same was true in 2019 (29%, 24%, 17%, and 19%, respectively). In 2020, annual prevalence dropped significantly for the West (to 24%) and the South (to 15%), dropped somewhat for the Northeast (to 23%), and increased for the Midwest to 21%). Thus, between 2017 and 2019, regional differences in annual prevalence of vaping marijuana remained fairly steady, with prevalence increasing 13 percentage points for the West, 8 percentage points for the Northeast, 6 percentage points for the Midwest, and 10 percentage points for the South; in 2020, it dropped for the West (4.5 percentage points), Northeast (0.8 percentage points), and South (3.9 percentage points), and increased for the Midwest (3.1 percentage points). Overall, the regional differences in annual vaping of marijuana (highest in the West and Northeast and lowest in the South) are similar to regional differences for annual prevalence of marijuana use.

  For *30-day prevalence* of vaping marijuana, this same regional pattern held across the last four years (Figure 111 in *Occasional Paper 96*). Across 2017, 2018, 2019, and 2020 respectively, it was higher in the West (10%, 15%, 17%, 16%) and Northeast (6.8%, 11%, 14%, 11%) than in the Midwest (5.5%, 6.4%, 11%, 9.8%) and the South (4.3%, 5.4%, 11%, 7.0%). Thus, across the increases and decreases, the regional differences were

maintained (with regional differences being similar to such differences for 30-day prevalence of marijuana use).

- For the use of ***any illicit drug other than marijuana*** (Figure 5 in *Occasional Paper 96*), the regional differences are not large and the regions have moved in parallel. The West stood out as highest in annual use most years, with the Northeast typically having the second highest, and the South and Midwest having the lowest. However, in the past few years, the Northeast and Midwest have been similar to each other. In 2020, use was 24% in the West, 19% in the Northeast, 18% in the Midwest, and 17% in the South.

- Data on use of ***synthetic marijuana*** have been gathered since 2011 (Figure 15 in *Occasional Paper 96*). Only annual prevalence results are reported for all young adults 1-10 years past high school combined, since only annual prevalence is asked and the number of cases is limited. These data show a considerable decline between 2011 (when annual prevalence ranged from 4.6% in the Northeast to 8.3% in the Midwest) and 2020 in all four regions. There remains little difference among the regions in annual prevalence, which ranged from 0.9% to 1.1% in 2020.

- From 1988 (when data were first available) through 1994, rates of ***inhalant*** use remained relatively stable, quite low, and about equal in all four regions among 19-30 year olds (Figure 18 in *Occasional Paper 96*). Annual use then rose in the Northeast in 1995 and 1996 and remained higher than in the other regions through 2000, before dropping back to rates comparable to the other three regions. Except for that divergence, the regions have moved very much in parallel for this class of drugs. Annual prevalence in 2020 was at low levels among all young adults, ranging between 0.7% in the West and 1.4% in the Midwest.

- From 1988 (when data were first available) through 2003, the West had the highest level of *lifetime* prevalence for ***LSD*** (Figure 23 in *Occasional Paper 96*)**.** From 1990 through 1994, the West had slightly higher *annual* prevalence levels of LSD than the other three regions among young adults. Otherwise the lifetime and annual prevalence has been quite similar in all four regions until the past few years; all showed declines in LSD use in the early 2000s. From about 2009 through 2020, Over the past decade, all four regions have shown some modest increase in annual prevalence of LSD, with the Northeast typically having slightly higher annual prevalence through 2014, and the West generally having the highest levels since then through 2020, when annual prevalence was 6.3% in the West, 5.0% in the Northeast, 4.2% in the Midwest, and 3.7% in the South (the 2020 increases were significant for the Northeast and Midwest).

- ***Salvia***, which was first measured with a single tripwire question in 2009, showed a continuous decline from 2009 through 2013 in the West (which started out highest) and the South (Figure 32 in *Occasional Paper 96*). Use began to decline in the Midwest after 2010 and in the Northeast after 2011. Use was very low in all regions by 2020 at 0.8% or lower annual prevalence, compared to 2.5% to 5.4% in the four regions in 2009.

- Questions about ***MDMA*** (***ecstasy*** and more recently ***Molly***) were added to the follow-up surveys of young adults in 1989 (Figure 29 in *Occasional Paper 96*). Through 1993, annual prevalence was highest in the West and South and a little lower in the Northeast and Midwest regions. Subsequently, use in the Northeast began to increase, exceeding levels of use found in the South and West from 1999 to 2002. The Midwest has consistently had a somewhat lower level of MDMA use than the other three regions, although it was joined by the South and later the Northeast in recent years. In 2000 all four regions showed a sharp and fairly parallel increase in MDMA use; the rise decelerated in 2001 and use began to decline thereafter in all regions. As discussed elsewhere, we believe that this decrease may have been caused by growing concern about the hazards of MDMA use; and a decline in the prevalence of "raves" may also have contributed. By 2003, little regional difference remained in annual prevalence, largely because the declines in use were most pronounced in the Northeast and West. By 2007, use was down a little more in all regions; but after 2007 MDMA use generally was increasing in the West until it leveled after 2012, before increasing again in 2016, thereby reopening regional differences that remained through 2020. In 2020 annual MDMA prevalence levels among young adults were 6.8% in the West, 4.1% in the Midwest, 3.8% in the Northeast, and 3.6% in the South.

- The considerable declines in ***cocaine*** use, observed in all regions between 1987 and 1991, were greatest in the two regions that had attained the highest levels of use by the mid-1980s – the West and Northeast (Figure 35 in *Occasional Paper 96*). These regional differences had diminished considerably by 1992 after a large overall decline in use had taken place. In 1992 the decline in annual prevalence stalled in all regions except the Northeast. A gradual further decline then occurred in all regions through 1996 (1997 for the West) before a slight rise began to occur, likely reflecting the effects of young adults forgetting of the hazards of cocaine use as a result of generational replacement. Regional variability in annual cocaine prevalence was minimal for some years after the mid-1990s, but between 2005 and 2012, use in the Midwest and South declined more than in the West and Northeast, creating some regional difference. For the past decade, use has been increasing unevenly for the West and has been fairly level for the other three regions. Annual prevalence for the young adult age band in 2020 was 10% in the West, 6.9% in the Northeast, 5.8% in the Midwest, and 5.2% in the South.

- Through about 2011, lifetime prevalence of ***crack*** use generally had been highest in the West since crack use was first measured in 1987, as was true for cocaine in general (Figure 38 in *Occasional Paper 96*). All four regions exhibited an appreciable drop in crack use between 1988 and 1991, again with the greatest declines in the West and Northeast, where prevalence had been the highest. Use then generally leveled in all regions except the South, where it continued a gradual decline through 1997. Annual prevalence levels for crack use among the regions have converged and are at very low levels, ranging from 0.0% to 1.8% in 2020.

- The regions have trended fairly similarly in their prevalence of ***amphetamine*** use by young adults (Figure 53 in *Occasional Paper 96*). The only modest exception was that use declined more in the Northeast (which started out lowest) in the period 1988 to 1992,

giving it a substantially lower rate than the other three regions; it remained lowest until 1997. The West fairly consistently had the highest rate through about 2000, although not by much. By the late 1990s, the Northeast had caught up to the Midwest and South, making the regional differences very small; there have been no consistent regional differences since 2000 (when annual prevalence ranged from 3.8% to 4.9%), with all regions showing uneven increases between 2008 to 2013-2015 before leveling. In 2020 the annual prevalence levels ranged between 5.8% in the South and 8.1% in the West.

- ***Methamphetamine*** use (Figure 60 in *Occasional Paper 96*) has been measured only since 1999 (though crystal methamphetamine, discussed next, has been in the study for a longer interval). It shows some differences in rates among the regions and some differential trending, with a gradual decline for some years in annual prevalence in the Northeast (where use generally was lowest) and a gradual increase in the West (where use had usually been highest) from 2000–2004, after which use declined in the West. Use in the other two regions remained fairly flat until 2006, when both showed some decline. Use in the West fell after 2006, leaving very little variability among regions by 2012. (*Lifetime* prevalence reached particularly high levels in the West, starting at 16% in 1999, and declining fairly steadily to 3.1% in 2020.) Annual prevalence in 2020 ranged from 0.4% in the Northeast to 1.1% in the South.

- The West consistently has had the highest rates for ***crystal methamphetamine*** (***ice***) use for a number of years, and through 2006 the regional differences were very substantial, particularly in terms of lifetime use (Figure 63 in *Occasional Paper 96*). The Northeast has generally had the lowest prevalence through this period. When data were first available on crystal methamphetamine in 1990, the West had a lifetime prevalence of 5.0% versus a range of 2.1% to 2.3% in the other three regions. By 2001, the lifetime prevalence level in the West had increased to 10%, and lifetime prevalence in the Midwest and South grew quite steadily over that interval through 2005 and 2006. This strongly suggests that crystal methamphetamine use among young adults diffused from the West primarily to the South and Midwest regions, but diffused much less to the Northeast, which has had the lowest prevalence since 1998. The annual prevalence figures tell a similar story, but also show that there was a spike in past-year use in the West from 1991 to 1995 before use there declined and then stabilized at around 2% from 1997 through 2001. Rates then rose again in the West between 2001 and 2003 and stabilized at a slightly higher level around 2.7%. Since 2006, use in the West declined, narrowing the differences among regions. In 2019, annual use of crystal methamphetamine stood between 0.0% and 0.9% across all regions. Because of these low levels and to make room for other drug use questions, we discontinued these items in 2020.

- ***Bath salts*** (synthetic stimulants sold over the counter) were first included in the study in 2012 and showed some regional variation, though all regions had an annual prevalence of use below 1.0% (Figure 66 in *Occasional Paper 96*). It has remained under 1.0% since, ranging from 0.0% in the West to 0.5% in the Midwest in 2018. Due to these low levels, and to make room for questions about other substances, questions about bath salts were removed from the surveys in 2019.

- The annual prevalence for ***sedatives*** (***barbiturates***) remained flat, and at about equivalent levels, in all four regions of the country from 1988, when first measured, through 1994 (Figure 69 in *Occasional Paper 96*). Rates then rose gradually and in parallel in all regions for a number of years until about 2004, followed by some leveling and then some decline after 2008, followed by a leveling or slight decline since 2011; regional differences have been consistently small. In 2020 annual prevalence ranged from 1.7% in the Northeast to 2.4% in the South.

- The picture for ***tranquilizers*** (Figure 72 in *Occasional Paper 96*) is similar to that for sedatives (barbiturates). Annual prevalence generally held fairly steady in all regions from 1988 through 1993, even though lifetime use was declining steadily in all regions through 1997. After 1993 there was some increase in all regions in lifetime and annual use, again with the South experiencing the most increase through 2004, after which all regions showed a leveling in use, followed by gradual uneven declines in use for the four regions since about 2007-2008 through 2020. The regional differences have been small, though they grew a bit larger during the period of increasing use in the late 1990s, primarily because the South showed a greater increase in lifetime and annual use than the other regions and had the highest prevalence through about 2008; since then, there have been few consistent regional differences. Annual prevalence in 2020 ranged from 3.0% in the Midwest to 3.7% in the South.

- Levels and trends in the *annual* prevalence of ***heroin*** use were low and quite comparable across the four regions from 1988 through 1993 (Figure 41 in *Occasional Paper 96*). Their *lifetime* usage rates then increased some through about 1997 – though modestly – with little divergence among the regions. After that the *annual* prevalence moved up gradually among all regions during the relapse phase in the overall drug epidemic. Peak rates were observed from about 2008 to 2017 with the Northeast tending to have the highest rate and the South the lowest. In just the past few years there has been more convergence with some decline, such that annual prevalence in 2020 ranged between 0.2% and 0.6% across the four regions.
- Trends in annual prevalence of the use of ***narcotics other than heroin*** without medical supervision have been quite parallel for the four regions (Figure 44 in *Occasional Paper 96*). After a period of slight decline between 1988 and 1993 in all regions, a gradual, long-term, and substantial increase occurred from the mid-1990s through 2005-2008, depending on the region, with little systematic change through 2010, at which point use began to decline gradually in all regions – a decline that continued up through 2020. The South tended to have the lowest prevalence of use from 2003 through 2013, with the other three regions being tightly grouped; from 2013 through 2020, the regions were quite similar, with each showing declines; in 2020, annual prevalence ranged from 1.9% for the Northeast to 3.1% in the West. It is noteworthy that trends in lifetime prevalence have been consistent with annual trends and with the recent lack of regional differences noted above.

- The annual prevalence of the narcotic drug ***OxyContin*** without medical supervision was highest in the Northeast and lowest in the West in 2002, when it was first measured (Figure 47 in *Occasional Paper 96*). Use rose some in all regions through about 2009, and it has

shown a decline in all regions since then. The Midwest typically had the lowest prevalence level from 2010 through 2018 though the four regions were fairly tightly grouped. Prevalence dispersed some by region in 2019 and then came together again in 2020 with levels ranging from 1.5% in the Midwest to 2.4% in the South.[36]

- Annual prevalence of use of the narcotic drug ***Vicodin*** without medical supervision showed considerable variation among the regions between 2002, when it was first measured, and 2010 (Figure 50 in *Occasional Paper 96*). The West and Midwest generally have had the highest rates, with the South the lowest and the Northeast in between. However, the West and Midwest have shown greater declines in use since 2005 and 2006, respectively, narrowing the differences; use has declined for all regions since 2010 with the South and Northeast having the lowest prevalence since 2016. Annual prevalence levels in 2020 were 0.8% in the Northeast, 1.4% in the South, 2.1% in the West, and 2.5% in the Midwest. (It should be noted that the sample sizes are more limited than usual for Vicodin and OxyContin, because questions about their use are contained on only three of the six questionnaire forms. Consequently, the trends are less smooth.)

- When two club drugs, ***GHB*** and ***ketamine***, were first measured in 2002, the Northeast stood out as having a higher rate of annual use (especially so for ketamine); but use in the Northeast dropped over the next two years, bringing that region's usage rates down to the same very low levels as the other three regions (Figures 77 and 80 in *Occasional Paper 96*). There appears to have been a little resurgence of ketamine use in each region between 2008 and 2012. In 2012 through 2018 ketamine use stood slightly higher in the Northeast than in the other regions. In 2020, there was a nonsignificant increase of 1.1 percentage points in annual use in the Northeast (to 2.2%); in the other three regions, it was 0.8-1.1% in 2020. GHB use also appeared to rise in the Northeast in 2012, but use then fell back in 2013. Because of consistent very low levels of GHB (annual use ranging from 0.0% to 0.3% in 2015), it was dropped from the surveys after 2015 to make room for items on other drugs.

- Use of ***Rohypnol,*** another so-called club drug (Figure 75 in *Occasional Paper 96*), remained very low in all four regions from 2002, when it was first measured, through 2009, not reaching 1% in any region. For this reason, and to make room for questions about other substances, questions about its use were dropped from the surveys in 2010.

- With respect to ***alcohol*** use (Figure 86 in *Occasional Paper 96*), there were modest declines in 30-day prevalence in all four regions between 1988 (when the first measurement was available for 19-30 year olds) and 1992. Prevalence among young adults then was fairly level in all regions through 2019. The West and South have consistently had lower prevalence of 30-day use than the Northeast and Midwest. In 2020,

[36] The prevalence of OxyContin, a subclass of narcotics other than heroin, is asked on three of the six questionnaire forms, whereas the prevalence of narcotics other than heroin is asked on all six forms. In 2020, annual prevalence of both was very low. In 2020 the annual prevalence of OxyContin was similar to the annual prevalence of narcotics other than heroin, reflecting that OxyContin is a commonly used narcotic. When annual prevalence of OxyContin slightly exceeds the annual prevalence of narcotics other than heroin (in the Northeast), this is likely a matter of random sample variation due to relatively small sample sizes for OxyContin combined with the very low prevalence estimates of both.

30-day use declined for each region, significantly so for the Northeast and Midwest, ranging from 62% in the West to 68% in the Northeast.

Current ***daily use*** of alcohol also showed a decline from the first (1988) data collection through about 1994 or 1995 in all regions. The proportional declines were substantial – on the order of 40–50%. After the mid-1990s there was some upward trending in daily prevalence in all regions through about 2007 to 2009, followed by some leveling and uneven change across the regions. Across the years, there have not been consistent regional differences. In 2020 the four regions had prevalence of daily alcohol use between 4.9% (Midwest) and 5.6% (South).

Binge drinking was fairly level in all regions between 1987 and the late 1990s or early 2000s (bottom panel of Figure 86 in *Occasional Paper 96*) There were then some modest increases through about 2006, followed by a leveling and even a slight decline, particularly in the West. Throughout the years, prevalence has been consistently higher in the Midwest and Northeast. Declines since 2011 have been greater for the Midwest and Northeast, with smaller declines in the West and South, narrowing the regional differences somewhat. In 2020, prevalence of binge drinking among young adults was 27% in the West, 27% in the South, 28% in the Northeast, and 31% in the Midwest; each region declined in 2020, with the decline being significant for the Midwest and West. The long-standing regional differences have been closing since about 2017.

- There have been highly consistent regional differences among young adults in ***cigarette smoking*** since data were first available in 1988 – these differences exist for monthly, daily, and half-pack-daily prevalence levels (Figure 94 in *Occasional Paper 96*). The West has consistently had the lowest rates all three measures of cigarette use across the years. The other three regions have tended to cluster fairly closely, but usually with the Midwest highest and the Northeast a little lower. However, as prevalence levels have fallen in recent years, the rates have converged, with rather little regional difference remaining in 2020. In general, all of the smoking measures have shown parallel movements across regions, suggesting that the forces accounting for changes have been nationwide in scope. (It should be remembered that, as illustrated earlier in this chapter, there are strong cohort effects in smoking that are obscured when we combine age groups across a 12-year age span, as we have done in the present analyses.)

  From all-time highs between 1997 and 2000 in prevalence of ***30-day*** and between 1988 and 1989 in prevalence of ***daily cigarette smoking***, all regions have shown fairly consistent declines through 2020, with regional differences generally remaining through 2012 (Midwest and Northeast highest and West lowest). From 2012 through 2020, the West remained the lowest (8.1% for 30-day use and 3.3% for daily use in 2020), with little difference among the other three regions (8.2-11% for 30-day use and 4.3-6.3% for daily use in 2020). These 2020 prevalence levels were at all-time lows for each region.

- New questions about ***vaping nicotine*** were added to the young adult surveys in 2017. From 2017 through 2019, *30-day prevalence* increased in each region: it increased from 7.7% to 16% for the Northeast, from 5.1% to 12% for the Midwest, from 6.4% to 15% for

the South, and from 6.1% to 14% for the West. In 2020, it decreased modestly for the Northeast (to 13%) and South (to 12%) and increased modestly for the Midwest (to 15%) and West (to 15%) (Figure 114 in *Occasional Paper 96*). Regional differences have not been large, and by 2020, 30-day prevalence of vaping nicotine was similar across the four regions (13-15%).

- Smoking using a ***hookah*** (Figure 99 in *Occasional Paper 96*) has not shown important regional differences, with annual prevalence generally declining for all regions from 2014 through 2017. In 2018, there was a significant increase in the Midwest to 15%, with use being 12% to 15% in the other three regions. Between 2018 and 2020, it declined for each region; in 2020, it ranged from 7.4% in the South to 10% in the Midwest.

- Annual use of ***small cigars*** (Figure 102 in *Occasional Paper 96*) has been highest in the Midwest since it was first asked about, in 2011, through 2020. Over the years, each region showed uneven declines through 2020 (when it was 17% for Midwest, 15% for Northeast, 12% for West, and 11% for South).

- Annual use of ***snus*** (Figure 108 in *Occasional Paper 96*) has shown some modest decreases or leveling in all regions from 2011 (when first asked) to 2020, with use typically highest in the Midwest; in 2020, annual prevalence ranged from 2.4% in the West to 6.5% in the Midwest.

- Annual use of ***dissolvable tobacco*** (Figure 105 in *Occasional Paper 96*) has generally been below 2% in all regions since 2011 (when first asked) through 2020, with little systematic ordering by region.

Population Density Differences in Trends

The analyses presented here for population density continue to consider young adults aged 19-30 combined, with data being first available in 1988. Among young adults, five levels of population density are distinguished based on the respondent's answer to the question, "During March of this year did you live mostly . . ."; answer alternatives were "in a very large city (over 500,000 people), in a large city (100,000 to 500,000), in a medium-sized city (50,000 to 100,000), in a small city or town (under 50,000), or on a farm/in the country." Data on the suburbs of cities of each size were combined with the corresponding city. Associated figures and tables in *MTF Occasional Paper 95* are cited.

- Annual use of ***any illicit drug*** among young adults generally has moved in parallel among the various community-size strata, and has been positively associated with population density. In most years, especially when prevalence began to rise in the early 1990s through 2020, use was highest in very large cities, next highest in large or medium cities, then small towns, with the farm/country stratum having the lowest prevalence (Figure 3 in *Occasional Paper 96*). In general, annual use in farm/country has been distinctly lower than in the other four strata, which have often been fairly close in annual use. However, in the past decade, there has been more fanning, with the increases being greater for very large to medium cities compared to more modest increases for small towns and farm/country: in 2010, prevalence was 23%, 30%, 34%,

32%, and 36%, respectively, for farm/country, small towns, medium cities, large cities, and very large cities; and in 2020, it was 34%, 39%, 47%, 48%, and 56%, respectively.

- Trends in the use of ***any illicit drug other than marijuana*** tell a similar story, with annual use typically highest in very large cities and lowest in farm/country communities among young adults (Figure 6 in *Occasional Paper 96*). In the late 1990s annual prevalence began to rise in all strata, and after 2001 use continued to increase but differences emerged among the strata with annual prevalence beginning to rise more for medium to very large cities in the early 2000s. In 2000, annual prevalence was 11% for farm/country to 15% for very large cities; in 2010, the corresponding levels were 14% to 20%; and in 2020, they were 15% to 27%.

- ***Marijuana*** use (Figure 11 in *Occasional Paper 96*) has moved pretty much in parallel among the various community-size strata from 1988 through 2020, especially in the four more dense strata. Among young adults annual prevalence of marijuana use has typically been ordinally related to population density, with the farm/country stratum having the lowest annual prevalence of marijuana use and the very large cities having the highest. Annual prevalence has been distinctly lower in farm/country and has changed less compared to the other strata over the years. Over the past decade, differences among the five strata increased as use increased more for large and very large cities than the other strata: in 2010, annual prevalence was 18%, 25%, 30%, 29%, and 32% among farm/country, small town, medium cities, large cities, and very large cities, respectively; in 2020, it was 30%, 38%, 41%, 44%, and 52%, respectively, reflecting a much larger increase since 2012 in the very large cities.

- The *annual* prevalence of ***vaping marijuana*** has been positively correlated with population density since we first asked these questions in 2017. In 2017 (for 19-30 year olds combined), annual prevalence ranged from 7.9% for farm/country to 19% for very large cities; in 2018, the corresponding range was from 9.4% to 23%; in 2019, it ranged from 15% to 32%; and in 2020, it ranged from 14% to 27%.

  The *30-day* prevalence of vaping marijuana showed a similar pattern, with it being positively correlated with population density, although prevalence in the middle three strata were sometimes overlapping (Figure 112 in *Occasional Paper 96*). In 2017, it ranged from 2.7% for farm/country to 9.7% for very large cities; in 2018, the corresponding levels ranged from 4.2% to 11%; in 2019, they ranged from 8.2% to 19%; and in 2020, they ranged from 6.9% to 15%. Thus, so far, vaping marijuana (both annual and 30-day prevalence) was more than twice as high among those in very large cities compared to those who live on farms or in the country each year (except for annual prevalence in 2020, which was 14% vs 27%).

- ***Daily marijuana use*** (Figure 13 in *Occasional Paper 96*) has moved largely in parallel among the five population-density strata, with few consistent differences among the strata over the years. The population-density strata all showed some decline in daily use from 1988 through about 1991, followed by substantial but

uneven increases through 2020. Differences among the strata were small through about 2000 (when prevalence ranged between 3.3% to 4.3%); and since then, differences among the strata have generally expanded (in 2020, daily use ranged between 8.7% and 12%). Despite the increases and expanding differences over the years, the rank ordering has not been consistent year to year.

- ***Synthetic marijuana***, such as "K-2" and "Spice," was added to the study in 2011 (Figure 16 in *Occasional Paper 96*). The farm-country stratum had the highest annual prevalence initially (9.6% in 2011) and large to very large cities had the lowest (4.1-4.2% in 2011), but since then the strata have converged as prevalence declined through 2014 and then leveled through 2020 at very low levels (0.6-2.1% in 2020).

- In general, there have not been large differences in ***LSD*** use among young adults as a function of community size since 1988 (Figure 24 in *Occasional Paper 96*). In 1988, the range was 1.7 to 2.4; in 2000, it was 2.6 to 3.0; and in 2020 it was 0.5 to 1.6. And until the past few years, there was little rank order consistency among the strata from year to year. However, beginning in 2016 and through 2020, annual use was ordinally associated with population density, with it being lowest in farm/country and highest in very large cities. In 2020, it was 3.2%, 3.8%, 4.2%, 5.5%, and 6.2%, respectively for farm/country, small town, medium city, large city and very large city. (The farm/country stratum had generally been lowest in the late 1980s through about 2000.)

- The use of ***hallucinogens other than LSD*** (Figure 27 in *Occasional Paper 96*) has tended to be highest in very large cities and lowest in farm/country communities across the years among young adults, although changes have been uneven over the years by population density strata and thus the rank ordering has not always been consistent. Nonetheless, use rose for each stratum from the early 1990s through the early 2000s and then showed some decline or uneven change through 2015. Between 2015 and 2020, each stratum showed a net increase. In 2020, annual prevalence was 4.1%, 4.1%, 4.7%, 6.4%, and 6.7%, respectively, for farm/country, small town, medium city, large city, and very large city; each stratum showed an increase between 2019 and 2020, significantly so for medium and large cities.

- Annual prevalence of ***salvia*** (or ***salvia divinorum)*** use was first measured in 2009 and showed decline for all strata through about 2015 to a very low level, and then was level through 2020 with few differences among the strata (Figure 33 in *Occasional Paper 96*). In 2020, annual prevalence ranged from 0.2% to 1.4% among the five strata.

- ***MDMA*** (***ecstasy*** and more recently ***Molly***) use was first measured in 1989, and since then has shown some of the largest short-term changes of any drug among young adults (Figure 30 in *Occasional Paper 96*). In general, annual prevalence has been positively associated with population density, being highest in very large cities and lowest in farm/county most years. All strata showed an increase in the early 1990s through the early 2000s, followed by some sharp declines and then leveling through

about 2010. Between 2010 and 2020, use increased for those living in large and especially in very large cities, and was fairly level for the other strata. In 2020, annual prevalence was 2.4%, 2.4%. 4.4%. 5.0%. and 8.6%, respectively, in farm/county, small town, medium city, large city, and very large city. It thus appears that *over the past several years, MDMA use has made somewhat of a comeback among young adults in the country's large and very large cities.*

- In the late 1980s, ***cocaine*** use was positively correlated with population density, with the highest use in the very large cities and the lowest use in the farm/country stratum (Figure 36 in *Occasional Paper 96*). Annual prevalence then dropped and leveled for all strata through the about 2000s; although the association with population density remained, differences among the strata were small. From the early 2000s through 2020, annual use increased unevenly for those living in large and very large cities, and was fairly level (showing little net change over the past two decades) for the other three strata, thus showing expanding differences among the strata. In 2020, annual use was 4.3%, 4.5%, 7.1%, 6.9%, and 11.3%, respectively, in farm/country, small towns, medium cities, large cities, and very large cities. It would thus appear that cocaine is making a comeback among young adults in large and very large cities.

- Annual prevalence of ***Crack*** among 19-30 year olds was highest in 1988 or 1989 in the five strata, and then declined through the early 1990s with little systematic differences among the strata (Figure 39 in *Occasional Paper 96*). Annual use has shown a long-term decline from the early 1990s through 2020 for each stratum, again with little systematic differences among them; in 2020, annual prevalence ranged from 0.0% to 2.0%.

- ***Amphetamine*** use showed virtually no differences associated with population density among young adults through about 2008, though use had been growing slowly among all strata. Some differences occurred from 2008 through 2020 as annual use increased more for those living in large and very large cities and showed little net change in the other strata; thus, over the past decade, annual use has generally been lowest in the farm/country stratum and highest in very large cities (Figure 54 in *Occasional Paper 96*). In 2020, annual use was 4.1%, 5.1%, 6.2%, 6.9%, and 11%, respectively, for farm/country, small town, medium city, large city, and very large city.

- Due to limited sample sizes, estimates of the use of ***crystal methamphetamine*** (***ice***) as a function of population density have been quite erratic across time (Figure 64 in *Occasional Paper 96*). Since 2007, annual use has been relatively low in all strata and age bands, and in 2019 very low use was found across all strata (between 0.2% and 1.1%). Because of these low levels and to make room for other drug use questions, we discontinued these items in 2020.

- The use of ***methamphetamine*** in any form has been measured only since 1999 (Figure 61 in *Occasional Paper 96*). In general, the farm/country stratum has shown the highest annual prevalence, but differences among the strata have been small

throughout. Annual use generally declined for each stratum through about 2008/2010, and has been fairly level since. In 2020, it ranged from 0.2% to 1.7%.

- ***Bath salts*** were added to the study in 2012, so trends are available only since then (Figure 67 in *Occasional Paper 96*). They showed a relatively high prevalence of annual use (1.6% annual prevalence) in 2012 in the farm/country stratum. But between 2013 and 2018, annual prevalence was quite low in all strata (ranging from 0.0% to 0.4% in 2018). Due to these low levels, and to make room for questions about other substances, questions about bath salts were removed from the surveys in 2019.

- Annual prevalence of nonmedical ***sedative*** (***barbiturate***) use has never shown much variation by population density, at least as far back as 1988, with trends for each stratum showing leveling through the late 1990s, increases through the late 2000s, and uneven declines through 2020 (when annual use was 1.3-2.8%) (Figure 70 in *Occasional Paper 96*).

- Annual nonmedical ***Tranquilizer*** use among young adults has also had little or no association with population density (Figure 73 in *Occasional Paper 96*). Like sedatives (barbiturates), annual use was fairly level for each stratum through the late 1990s, increased through about 2010, and then decreased unevenly through 2020. However, there developed some association with population density, with use being highest in very large cities and lowest in farm/country most years since about 2000. In 2020, annual prevalence was 3.3%, 2.5%. 3.2%, 3.4%, and 5.5%, respectively, in farm/country, small town, medium cities, large cities, and very large cities.

- From 1988 to 2020, annual ***heroin*** prevalence was less than 1.0% – usually much less – among young adults in all population-density strata (Figure 42 in *Occasional Paper 96*). There has been little systematic variation over the years by strata. In 2020, annual use ranged from 0.1% to 0.4%.

- The annual use of ***narcotics other than heroin*** (Figure 45 in *Occasional Paper 96*) has shown little consistent association with population density over the years. For all five strata, annual use was level through the late 1990s, then rose sharply through the mid-2000s where it leveled, and then declined steadily over the past decade through 2020 (when annual use was 2.1-3.6%). The trends by population density are similar for ***OxyContin*** and ***Vicodin***, with little consistent association with population density over the years (Figures 48 and 51 in *Occasional Paper 96*).

- The annual prevalence of ***inhalant*** use has remained low among young adults over the years with little consistent variation by population density (Figure 19 in *Occasional Paper 96*). In 2020, annual prevalence was 0.6 -1.9% in the five strata.

- Trends as a function of population density for the club drugs ***GHB*** (Figure 78 in *Occasional Paper 96*) and ***Ketamine*** (Figure 81 in *Occasional Paper 96*) show little systematic change, with little consistency in association with population density over the years.

- There have been consistent differences as a function of population density in the *annual* and *30-day* prevalence of drinking ***alcohol*** among young adults across the years, with prevalence being positively associated with population density (Figures 87 and 88 in *Occasional Paper 96*). Between 2019 and 2020, 30-day use dropped for each stratum, significantly so for small towns and very large cities; it was 55%, 60%, 64%, 69%, and 73%, respectively, in farm/country, small towns, medium cities, large cities, and very large cities. Regarding ***daily drinking***, consistent association with population density was not evident until about 2005, and since then, prevalence has typically been highest in large and very-large cities and similar in the other three strata (Figure 89 in *Occasional Paper 96*). All strata showed some increase in daily drinking between about 2001 and 2012, with the largest increases being in the large and very large cities. In 2020, daily drinking was 4.5%, 4.1%, 5.6%, 5.8%, and 6.5%, respectively, in farm/country, small town, medium cities, large cities and very large cities.

- For ***binge drinking*** among young adults (Figure 90 in *Occasional Paper 96*), prevalence has been typically lowest in farm/country over the years. There was not much difference among the other strata from 1988 through about 2001; between 2001 and 2020, a positive association with population density was apparent most years (although the three lowest strata merged in 2020). Between 2019 and 2020, binge drinking declined for all strata, significantly so for medium and very large cities; in 2020, it was 26%, 26%, 27%, 30%, and 32%, respectively, in farm/country, small towns, medium cities, large cities, and very large cities.

- ***Cigarette smoking*** has generally been negatively associated with population density among young adults, without much evidence of differential trends related to population density (Figures 95, 96, and 97 in *Occasional Paper 96*). In 2019 and 2020, 30-day, daily, and half-pack daily smoking prevalence were at historic lows for all strata. In 2020, 30-day prevalence ranged from 7.1% (large cities) to 15% (farm/country), daily prevalence ranged from 3.6% (large and very large cities) to 9.6% (farm/country), and half-pack daily ranged from 1.2% (very large cities) to 6.5% (farm/country).

- ***Vaping nicotine*** has shown some changes in variation by population density among 19-30 year olds. In 2017 (the first year it was asked), annual and 30-day prevalence did not vary much by population density, with *annual* use at 12-15% and *30-day* use at 5.8-6.4% across the strata (Figure 115 in *Occasional Paper 96*). In 2018, annual prevalence was 11% in the farm/country stratum and 16-20% in the other strata; likewise, 30-day prevalence was 5.3% in the farm/country stratum and 8.9-12% in the other strata. In 2019, there was once again little variation by strata in annual prevalence (ranging between 23% and 25%), but 30-day prevalence continued to be lower in the farm/country stratum (11%) than in the other strata (13-17%). In 2020, there was relatively little variation by strata in annual use (ranging between 20% and 23%) and in 30-day use (ranging between 12% and 15%).

- Smoking using a ***hookah*** has been measured since 2011 (Figure 100 in *Occasional Paper 96*), and its use has tended to be positively correlated with population density. Annual use has been declining since about 2014 for all strata. In 2020, annual prevalence ranged from 3.3% (farm/country) to 11% (very large city).

- Annual prevalence of ***small cigars*** was first measured in 2011 and showed little differentiation by population density or little change through 2013. From 2014 through 2020, annual use declined unevenly for all strata and tended to be higher in large and very large cities most years. In 2020, use ranged from 9.8% in medium cities to 17% in large cities (Figure 103 in *Occasional Paper 96*).

- Use of ***dissolvable tobacco*** (Figure 106 in *Occasional Paper 96*) has tended to be very low in all strata, with little consistent differences among the strata.

- Use of ***snus,*** specifically, has also tended to be quite low, but with the farm/country and/or small town strata tending to be highest (Figure 109 in *Occasional Paper 96*).

TABLE 5-1
Trends in Lifetime Prevalence of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*7,900*	*7,900*	*7,900*	*7,800*	*8,000*	*7,800*	*7,600*	*7,500*	*7,500*	*7,400*	*7,200*	*7,100*	*6,800*	*6,800*	*6,300*	*6,400*	*6,800*	*6,400*	*6,100*	*5,800*	*5,900*	*5,800*	*5,800*	*5,500*	*5,400*	*5,200*	*5,000*	*4,700*	*4,400*	*4,400*	*4,400*	*4,200*	*4,700*		
Any Illicit Drug [1]	68.4	67.5	65.4	63.7	61.7	61.1	58.9	59.3	58.0	58.1	58.4	58.6	58.5	58.6	59.1	59.9	60.3	60.4	60.2	60.4	60.5	60.5	59.6	60.2	59.8	61.3	63.2	64.5	64.2	65.4	65.5	67.9	66.7	-1.1	+2.2 s
Any Illicit Drug other than Marijuana [1]	44.7	43.5	41.8	39.3	38.4	35.9	34.7	34.7	32.9	31.9	31.3	31.1	31.4	31.8	32.8	33.8	34.6	34.6	35.4	34.6	35.5	34.2	34.4	33.8	33.7	34.9	38.8	38.3	37.6	38.7	38.3	38.5	37.4	-1.1	-0.9
Marijuana	64.9	64.3	61.6	60.6	58.5	57.8	55.7	55.5	55.2	55.2	55.5	55.8	55.5	56.0	56.7	56.9	57.4	57.0	57.1	57.5	57.2	57.3	57.1	57.4	57.5	57.9	58.2	59.8	59.9	60.9	61.4	63.5	63.9	+0.5	+4.2 sss
Inhalants [2]	12.1	12.4	12.0	12.9	13.0	13.5	12.7	14.1	14.0	13.8	14.2	14.3	13.9	12.9	12.5	12.4	11.8	10.9	11.5	9.5	10.3	9.4	8.5	7.7	7.5	7.3	7.4	6.8	6.5	5.6	6.3	7.1	6.9	-0.2	+0.1
Hallucinogens [4,25]	17.2	16.2	15.9	15.6	15.9	15.2	15.0	16.4	16.7	16.9	17.6	18.0	18.1	18.4	19.6	19.5	19.3	18.1	18.0	16.9	16.1	15.7	15.0	14.1	13.1	13.1	12.8	12.4	12.7	13.6	14.9	14.8	17.3	+2.4 ss	+4.9 sss
LSD [25,58]	13.7	12.9	13.3	13.1	13.7	13.1	13.4	14.7	15.1	15.1	15.7	16.1	16.2	16.0	15.3	14.8	13.7	12.1	11.4	10.7	9.7	8.9	8.2	7.2	6.9	6.8	6.8	7.0	8.1	8.6	10.5	10.5	12.5	+2.0 ss	+5.5 sss
Hallucinogens other than LSD [4,25]	11.1	10.2	9.3	8.8	8.5	7.8	7.4	8.3	8.2	8.7	9.5	9.5	9.7	12.0	15.2	16.0	15.4	15.5	15.5	14.7	14.0	14.2	13.4	12.9	11.9	12.0	11.6	11.2	11.1	11.6	11.9	12.4	13.8	+1.4	+2.6 sss
MDMA (Ecstasy, Molly) [26], original	—	3.1	3.3	3.0	3.6	3.6	3.5	4.6	5.2	5.1	7.0	7.0	11.1	12.2	13.5	14.3	15.1	14.5	14.7	13.6	14.1	13.2	13.5	12.2	12.3	12.1	12.0	—	—	—	—	—	—	—	—
MDMA (Ecstasy, Molly) [26], revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.8	13.6	12.7	13.1	13.4	14.1	14.1	0.0	+0.5
Cocaine	28.1	26.1	24.3	22.2	21.1	18.0	16.7	16.1	15.0	13.8	13.9	13.8	13.3	13.4	13.7	14.8	14.9	14.5	15.5	15.0	15.4	14.8	14.6	13.1	13.0	13.0	12.6	13.1	12.9	14.0	14.1	14.6	14.8	+0.1	+1.7 s
Crack [7]	6.6	6.1	5.1	4.7	5.1	4.2	4.6	4.4	4.5	4.1	4.1	4.5	4.6	4.5	4.4	4.7	4.2	4.4	4.3	3.9	4.4	3.6	3.8	3.1	2.8	2.8	2.5	2.1	2.3	2.3	2.2	1.1	2.0	+1.0	-0.1
Other Cocaine [8]	25.6	25.8	22.9	21.0	20.0	16.5	15.3	14.6	14.0	12.6	12.9	12.8	12.3	12.4	13.0	13.8	14.2	13.4	14.8	14.3	14.5	14.2	13.8	12.6	12.8	12.6	12.2	12.5	12.9	13.9	13.3	11.5	11.1	-0.4	-1.4
Heroin	1.3	1.2	0.9	1.0	1.0	0.9	0.9	1.2	1.4	1.4	1.5	1.6	1.8	1.9	1.7	1.8	1.8	1.9	2.0	1.7	2.0	1.9	2.0	1.8	1.7	1.7	1.5	1.6	1.7	1.6	1.6	1.3	1.4	+0.1	-0.2
With a Needle [9]	—	—	—	—	—	—	—	0.3	0.3	0.3	0.3	0.5	0.4	0.5	0.4	0.4	0.4	0.7	0.5	0.5	0.5	0.7	0.8	0.7	0.7	0.9	0.6	0.8	0.8	0.8	0.6	0.7	0.6	-0.1	-0.2
Without a Needle [9]	—	—	—	—	—	—	—	0.9	1.5	1.5	1.6	1.8	2.0	2.0	1.7	2.0	2.0	1.9	2.5	1.9	2.3	2.2	2.0	1.8	1.8	1.8	1.4	2.0	1.6	1.6	1.5	1.4	1.5	+0.2	-0.4
Narcotics other than Heroin [10,11,28,59]	9.7	9.7	9.4	9.3	8.7	8.0	8.0	9.4	8.8	9.4	9.2	9.4	10.1	11.3	12.8	16.2	16.7	18.0	18.8	18.7	19.7	19.1	19.6	18.7	18.5	18.2	17.6	16.5	15.4	14.9	13.9	12.6	10.9	-1.7 ss	-5.6 sss
Amphetamines, Adjusted [10,12]	28.7	25.8	24.8	22.9	21.2	19.4	17.9	18.2	16.7	15.8	15.0	14.6	15.0	14.9	14.7	15.0	15.3	15.0	15.5	15.1	14.7	14.9	16.3	16.4	17.5	18.5	19.5	19.3	19.6	19.2	19.6	20.1	19.7	-0.4	+0.4
Methamphetamine [9]	—	—	—	—	—	—	—	—	—	—	—	9.2	9.1	8.9	9.4	9.0	9.0	8.8	7.3	7.1	6.8	5.6	5.3	3.9	4.2	3.4	3.3	2.9	2.6	3.0	3.2	2.4	2.4	0.0	-0.5
Crystal Methamphetamine (Ice) [9]	—	—	2.5	2.6	2.1	2.6	2.4	2.2	3.1	2.5	3.1	3.3	3.5	3.9	4.1	4.5	4.8	4.6	4.7	4.0	3.7	3.4	3.0	3.1	3.1	3.1	2.5	2.7	2.0	2.2	1.8	1.8	—	—	—

(Table continued on next page.)

TABLE 5-1 (cont.)
Trends in Lifetime Prevalence of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*6,700*	*6,600*	*6,700*	*6,600*	*6,800*	*6,700*	*6,500*	*6,400*	*6,300*	*6,400*	*6,200*	*6,000*	*5,700*	*5,800*	*5,300*	*5,300*	*5,700*	*5,400*	*5,100*	*4,800*	*4,900*	*4,900*	*4,900*	*4,600*	*4,600*	*4,400*	*4,200*	*4,000*	*3,700*	*3,600*	*3,600*	*3,500*	*4,700*		
Sedatives (Barbiturates) [10,21,41,60]	9.6	8.4	9.1	8.4	7.9	6.7	6.6	7.5	7.2	6.9	7.1	7.3	7.8	7.7	7.8	8.3	9.1	10.2	9.7	9.9	10.7	9.8	9.0	8.0	7.4	9.6	9.7	8.9	7.7	7.3	8.3	7.8	7.3	-0.5	-1.5 ss
Methaqualone [10]	9.8	8.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [4,10]	15.7	14.5	13.7	12.6	12.0	11.0	10.3	10.8	10.3	9.4	10.1	9.8	10.8	11.8	13.4	13.5	14.3	14.8	15.2	14.6	16.1	14.7	15.3	14.1	13.9	14.2	13.6	13.8	13.1	13.4	12.6	12.1	11.7	-0.4	-2.1 ss
Alcohol [14]	94.6	94.5	94.5	94.3	93.7	92.1	91.5	91.9	91.7	91.1	91.1	90.9	91.2	90.3	90.6	89.7	89.9	89.7	89.5	88.7	89.2	88.6	88.5	88.1	87.2	87.2	87.3	87.1	87.5	86.3	86.1	85.9	86.5	+0.6	-0.7
Been Drunk [15]	—	—	—	84.1	81.9	82.4	81.1	83.0	81.7	82.6	80.8	82.3	81.7	82.3	81.8	81.9	80.6	80.8	81.5	81.2	81.4	79.7	80.3	80.1	80.4	79.1	79.8	78.3	77.6	76.3	77.8	76.6	76.8	+0.2	-1.5
Flavored Alcoholic Beverages [16,29,61]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	83.9	84.2	84.4	83.9	83.2	84.2	82.4	83.3	82.5	81.6	81.5	82.6	81.5	80.4	80.6	82.5	88.5	+6.0 ss	+5.9 ss
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping [9,27,30,42]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.1	26.1	31.7	36.3	42.3	43.2	+0.9	+14.1 sss
Vaping Marijuana [12,43,62]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15.8	21.3	27.4	31.0	+3.5 ss	—
Vaping Nicotine [12,31,44,63]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	26.4	34.8	39.6	+4.8 sss	—
Vaping Just Flavoring [12,32,45,64]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.1	20.7	20.0	26.1	+6.1 sss	—
Steroids [17]	—	1.2	1.3	1.5	1.9	1.8	1.2	1.6	1.6	1.3	1.5	2.0	1.4	1.3	1.9	1.9	1.8	1.6	1.7	1.9	1.9	2.0	1.7	1.3	1.8	1.3	1.9	1.8	1.4	1.3	1.3	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5.

TABLE 5-2
Trends in Annual Prevalence of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*7,900*	*7,900*	*7,900*	*7,800*	*8,000*	*7,800*	*7,600*	*7,500*	*7,500*	*7,400*	*7,200*	*7,100*	*6,800*	*6,800*	*6,300*	*6,400*	*6,800*	*6,400*	*6,100*	*5,800*	*5,900*	*5,800*	*5,800*	*5,500*	*5,400*	*5,200*	*5,000*	*4,700*	*4,400*	*4,400*	*4,400*	*4,200*	*4,700*		
Any Illicit Drug [1]	34.9	31.6	28.3	25.8	26.4	26.3	26.5	27.5	27.4	27.4	27.3	27.2	27.6	29.1	30.6	31.0	31.8	31.6	31.1	30.8	32.9	32.5	32.1	33.3	32.6	34.7	36.6	37.4	38.5	40.5	42.6	44.1	45.4	+1.3	+8.0 sss
Any Illicit Drug other than Marijuana [1]	20.7	17.9	15.4	13.6	13.0	11.8	12.3	12.8	12.4	13.0	12.1	12.3	12.9	13.9	15.5	17.0	17.6	18.1	17.9	17.2	18.5	17.4	17.9	17.0	16.7	17.7	21.0	18.9	19.4	19.9	19.3	19.1	19.1	+0.1	+0.3
Marijuana [65]	30.8	28.0	24.5	22.9	23.5	23.6	23.8	24.3	25.0	24.6	24.7	24.5	24.9	26.0	27.4	27.0	27.0	26.7	26.5	26.7	27.6	28.3	27.5	29.4	28.6	30.6	30.4	32.1	33.8	36.3	38.3	39.9	42.0	+2.0 s	+9.8 sss
Synthetic Marijuana [22]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	5.0	3.0	1.3	1.3	0.9	0.8	1.3	1.1	1.2	+0.1	-0.1
Inhalants [2]	1.6	1.5	1.4	1.5	1.5	1.6	1.6	2.0	1.7	1.9	1.7	1.7	1.6	1.4	1.5	1.2	1.5	1.3	1.2	0.8	1.3	0.8	1.2	0.8	1.0	0.5	1.0	0.8	0.8	0.7	0.8	1.3	1.2	-0.1	+0.4
Hallucinogens [4,25,66]	3.4	3.0	3.1	3.3	3.9	3.5	3.7	4.6	4.5	4.8	4.2	4.4	4.3	4.4	4.3	4.6	4.2	4.1	3.7	3.4	3.7	3.7	3.9	3.4	3.4	3.7	3.9	4.0	4.6	4.3	5.3	5.1	7.6	+2.5 sss	+3.6 sss
LSD [25,67]	2.6	2.1	2.5	2.7	3.3	2.9	3.0	3.8	3.6	3.5	2.8	3.2	2.9	2.7	1.7	1.0	0.8	0.8	1.1	1.0	1.3	1.4	1.3	1.6	1.4	1.8	2.0	2.4	3.0	2.9	3.7	3.5	4.7	+1.2 ss	+2.3 sss
Hallucinogens other than LSD [4,25,68]	1.6	1.5	1.3	1.3	1.5	1.5	1.6	2.0	2.2	2.6	2.4	2.4	2.7	2.8	3.6	4.3	4.0	3.9	3.4	3.2	3.2	3.1	3.4	2.9	2.8	3.1	2.9	2.9	3.1	2.8	3.3	3.2	5.2	+2.0 sss	+2.4 sss
MDMA (Ecstasy, Molly) [26], original	—	1.2	1.2	0.7	0.8	0.6	0.5	1.2	1.3	1.8	2.2	2.7	5.4	6.0	5.6	4.0	3.1	2.9	2.9	2.3	3.1	2.9	3.1	3.4	3.8	3.8	4.2	—	—	—	—	—	—	—	—
MDMA (Ecstasy, Molly) [26], revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.8	4.2	4.8	3.5	4.0	3.6	4.5	+0.9	+0.4
Salvia [23]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.2	3.0	2.3	1.3	0.8	1.0	0.5	0.7	0.5	0.6	0.5	0.7	+0.1	+0.1
Cocaine	13.2	10.5	8.1	6.0	5.5	4.4	4.3	4.3	4.3	4.7	4.7	5.0	4.7	5.1	5.6	6.3	6.5	6.5	6.3	5.8	5.8	5.3	4.6	4.5	4.0	3.8	4.9	5.4	5.7	6.2	6.7	6.4	6.8	+0.4	+1.5 ss
Crack [7]	2.9	2.3	1.5	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.3	1.1	1.2	1.0	1.0	1.2	1.2	1.0	0.9	0.9	0.7	0.5	0.6	0.5	0.3	0.4	0.4	0.6	0.6	0.5	0.3	0.7	+0.4	+0.2
Other Cocaine [8]	11.0	9.6	7.6	5.4	4.9	3.7	3.6	3.7	3.9	4.2	4.3	4.5	4.2	4.6	5.5	5.9	6.0	6.0	5.7	5.4	5.4	5.0	4.6	4.1	3.9	3.7	4.7	5.0	5.8	5.8	5.9	5.3	4.7	-0.5	-0.3
Heroin	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.2	0.3	0.3	0.5	0.3	0.3	0.5	0.6	0.4	0.4	0.5	0.6	0.4	0.5	0.4	0.4	0.3	0.2	0.3	+0.1	-0.2
With a Needle [9]	—	—	—	—	—	—	—	0.1	0.2	0.1	0.2	0.1	*	0.2	*	*	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.2	*	*	0.1	+0.1	-0.2
Without a Needle [9]	—	—	—	—	—	—	—	0.2	0.3	0.4	0.5	0.5	0.3	0.7	0.3	0.3	0.3	0.4	0.5	0.2	0.4	0.5	0.4	0.2	0.4	0.6	0.3	0.5	0.4	0.3	0.1	0.2	0.3	+0.1	-0.3
Narcotics other than Heroin [10,11]	2.5	2.6	2.2	2.2	2.2	1.9	2.2	2.7	2.7	3.1	3.0	3.3	3.6	4.5	5.7	7.9	8.4	8.5	8.9	8.3	8.8	8.4	8.7	7.7	7.1	6.9	6.3	5.3	5.2	4.2	3.6	2.9	2.6	-0.3	-2.7 sss
OxyContin [10,18]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	2.3	2.8	2.9	3.0	2.6	3.6	4.6	3.2	2.7	2.1	2.6	2.6	2.5	2.2	2.0	1.9	1.9	2.2	+0.3	-0.3
Vicodin [10,18]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.0	8.3	8.6	9.1	8.6	8.7	9.1	9.2	8.1	6.9	6.3	6.0	5.2	3.8	2.8	2.8	2.5	1.8	1.8	0.0	-2.0 sss
Amphetamines, Adjusted [10,12]	6.8	5.5	4.5	3.8	3.6	3.4	3.8	3.9	3.8	4.1	3.9	4.1	4.4	4.7	5.3	5.2	5.6	4.7	5.2	5.0	4.9	5.5	6.5	6.6	7.2	7.2	7.6	7.4	6.9	7.5	7.5	6.8	6.6	-0.2	-0.8
Ritalin [10,18]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.6	2.7	2.4	2.3	2.5	2.0	2.0	1.6	1.6	1.3	1.5	1.8	1.7	1.6	1.3	1.0	1.4	1.2	1.8	+0.6	+0.2
Adderall [10,18]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	6.4	5.9	6.8	6.4	7.4	6.9	7.0	7.9	8.7	6.8	7.6	+0.8	+0.7
Provigil [10,18]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.5	0.2	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine [9]	—	—	—	—	—	—	—	—	—	—	—	2.7	2.1	2.4	2.5	2.4	2.5	2.2	1.8	1.4	0.9	0.9	0.7	0.6	0.9	0.7	0.7	0.7	0.6	0.6	1.0	0.5	0.8	+0.3	+0.1
Crystal Methamphetamine (Ice) [9]	—	—	0.4	0.3	0.4	0.6	0.7	1.0	0.8	0.9	1.0	0.8	1.0	0.9	1.3	1.1	1.4	1.6	1.1	1.0	0.7	0.7	0.4	0.4	0.6	0.9	0.4	0.5	0.1	0.7	0.4	0.6	—	—	—

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(List of drugs continued.)

(Table continued on next page.)

TABLE 5-2 (cont.)
Trends in Annual Prevalence of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*6,700*	*6,600*	*6,700*	*6,600*	*6,800*	*6,700*	*6,500*	*6,400*	*6,300*	*6,400*	*6,200*	*6,000*	*5,700*	*5,800*	*5,300*	*5,300*	*5,700*	*5,400*	*5,100*	*4,800*	*4,900*	*4,900*	*4,900*	*4,600*	*4,600*	*4,400*	*4,200*	*4,000*	*3,700*	*3,600*	*3,600*	*3,500*	*4,700*		
Bath Salts (synthetic stimulants) [15,33]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.4	0.4	0.3	0.3	0.3	0.2	—	—	—	—
Sedatives (Barbiturates) [10,21]	1.8	1.5	1.8	1.7	1.6	1.6	1.6	1.9	2.0	2.1	2.2	2.3	2.7	3.0	3.5	3.5	4.0	4.2	3.9	4.0	4.4	3.6	3.1	3.0	2.6	3.3	3.2	2.6	2.6	2.2	2.5	2.1	2.0	0.0	-0.6
Methaqualone [10]	0.4	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [4,10]	4.1	3.6	3.6	3.5	3.4	2.8	2.8	3.2	3.1	3.3	3.6	3.4	4.1	5.0	6.7	6.4	7.0	6.8	6.5	6.8	6.7	6.5	6.3	5.8	5.1	5.4	4.9	5.2	5.0	4.7	4.2	3.7	3.4	-0.3	-1.8 sss
Rohypnol [9]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.5	0.1	0.1	0.2	0.3	0.2	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
GHB [24]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.5	0.4	0.3	0.2	0.4	0.2	0.3	0.3	0.3	0.4	0.3	0.4	0.2	—	—	—	—	—	—	—
Ketamine [24,34]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	0.8	0.6	0.4	0.5	0.3	0.5	0.5	0.7	0.4	0.7	0.6	0.6	0.6	0.7	0.4	0.7	1.1	1.3	+0.2	+0.8 s
Alcohol [14]	88.4	87.4	87.0	86.3	85.8	84.8	83.6	84.1	83.9	84.1	83.9	84.4	83.8	84.3	84.7	83.4	84.3	83.9	84.4	84.3	84.3	83.9	83.3	83.8	82.7	83.1	83.0	82.4	83.5	82.0	82.4	81.9	82.2	+0.4	-0.1
Been Drunk [15]	—	—	—	60.8	59.9	58.7	56.8	59.6	57.5	61.9	58.6	60.4	58.3	61.2	60.4	60.7	61.2	62.8	64.7	64.8	65.9	64.9	64.0	63.6	64.7	62.9	63.6	61.8	62.0	60.4	62.3	61.2	60.7	-0.5	-1.0
Flavored Alcoholic Beverages [16,70]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	61.5	56.8	56.8	57.2	56.9	54.8	50.5	54.6	51.4	51.6	53.5	55.2	56.4	51.6	53.9	58.6	68.0	+9.4 sss	+12.7 sss
Alcoholic Beverages mixed with Energy Drinks [12,20,36,71]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.6	36.3	35.3	33.9	31.7	29.4	30.6	29.1	31.6	25.8	-5.9 s	-5.9 ss
Cigarettes [46]	37.3	37.3	35.9	36.0	36.0	35.9	36.1	36.8	37.6	39.2	38.5	38.4	37.6	37.8	37.9	37.1	37.4	37.9	36.0	35.2	34.4	33.7	32.5	31.0	29.3	29.0	26.9	25.3	23.3	23.1	22.5	21.3	21.0	-0.4	-4.3 sss
Small Cigars [15,72]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.3	17.3	17.7	17.7	17.0	14.8	15.8	15.0	10.8	13.4	+2.5 s	-3.6 ss
Tobacco using a Hookah [15,35,47]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.1	17.1	18.8	21.0	17.5	13.7	11.4	12.3	9.3	8.8	-0.5	-8.7 sss
Any Vaping [12,37,48,73]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1	26.0	34.0	30.8	-3.3 ss	—
Vaping Marijuana [12,49]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	15.2	21.6	20.1	-1.5	—
Vaping Nicotine [12,38,50]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	16.7	23.6	21.9	-1.7	—
Vaping Just Flavoring [12,32]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	8.8	9.1	8.5	-0.6	—
Dissolvable Tobacco [9,74]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.5	0.3	0.6	0.4	0.5	0.7	0.3	0.2	1.1	+0.9 s	+0.8 s
Snus [9]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.6	5.1	4.8	4.4	3.7	4.3	3.5	2.9	3.9	+1.1	-0.5
Steroids [17]	—	0.6	0.2	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.6	0.4	0.3	0.5	0.6	0.4	0.4	0.3	0.6	0.4	0.6	0.7	0.2	0.5	0.4	0.6	0.4	0.3	0.3	0.5	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5.

TABLE 5-3
Trends in 30-Day Prevalence of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*7,900*	*7,900*	*7,900*	*7,800*	*8,000*	*7,800*	*7,600*	*7,500*	*7,500*	*7,400*	*7,200*	*7,100*	*6,800*	*6,800*	*6,300*	*6,400*	*6,800*	*6,400*	*6,100*	*5,800*	*5,900*	*5,800*	*5,800*	*5,500*	*5,400*	*5,200*	*5,000*	*4,700*	*4,400*	*4,400*	*4,400*	*4,200*	*4,700*		
Any Illicit Drug [1]	19.8	17.4	15.0	14.6	14.2	14.0	14.5	15.0	14.9	15.2	14.6	15.4	15.9	16.6	17.7	18.6	17.8	18.1	17.6	18.0	18.8	19.1	18.2	19.6	19.0	20.9	21.4	22.0	23.2	24.6	26.5	28.5	28.3	-0.2	+6.4 sss
Any Illicit Drug other than Marijuana [1]	9.2	7.3	5.6	5.3	5.1	4.5	4.9	5.3	4.5	5.2	5.0	5.4	5.5	6.3	7.1	7.9	7.9	7.9	7.8	8.2	8.6	8.4	8.2	8.0	7.5	7.9	9.8	8.2	8.9	8.8	8.4	7.9	7.8	-0.1	-0.5
Marijuana [39]	17.5	15.4	13.2	13.2	12.9	12.9	13.3	13.2	14.0	13.8	13.4	13.9	14.1	14.7	15.6	15.9	15.2	15.2	14.9	15.0	15.5	16.3	15.3	17.1	16.8	18.2	18.3	19.0	20.6	22.1	23.9	26.3	26.8	+0.5	+7.8 sss
Inhalants [2]	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.6	0.4	0.4	0.6	0.6	0.4	0.3	0.5	0.3	0.3	0.2	0.3	0.1	0.4	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.3	0.4	0.2	0.5	0.4	-0.1	+0.2
Hallucinogens [4,25,69]	0.9	0.9	0.7	0.8	1.1	0.9	1.1	1.3	0.9	1.2	1.1	1.0	1.0	1.0	0.8	1.1	0.8	0.7	0.7	0.8	0.8	0.7	0.9	0.8	0.6	0.9	0.8	0.9	0.8	0.8	1.3	1.5	2.4	+0.8 ss	+1.5 sss
LSD [25]	0.7	0.6	0.5	0.6	0.8	0.6	0.8	1.0	0.6	0.7	0.8	0.7	0.6	0.6	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.4	0.3	0.6	0.5	0.5	0.9	0.9	1.0	+0.1	+0.5 s
Hallucinogens other than LSD [4,25,75]	0.3	0.4	0.3	0.2	0.4	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.7	1.0	0.8	0.7	0.5	0.7	0.7	0.6	0.7	0.5	0.5	0.6	0.6	0.5	0.3	0.5	0.7	0.9	1.6	+0.7 ss	+1.1 sss
MDMA (Ecstasy, Molly) [26], original	—	0.3	0.2	0.1	0.2	0.2	0.1	0.3	0.3	0.5	0.5	1.0	1.5	1.4	1.2	0.7	0.6	0.6	0.7	0.5	0.6	0.6	0.8	0.7	1.0	1.0	1.2	—	—	—	—	—	—	—	—
MDMA (Ecstasy, Molly) [26], revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	0.9	1.1	0.8	1.1	0.9	1.0	+0.1	+0.1
Cocaine	5.4	3.7	2.3	2.0	1.8	1.3	1.3	1.5	1.3	1.6	1.6	1.7	1.4	2.0	2.1	2.4	2.0	2.0	2.2	1.9	1.9	1.8	1.4	1.5	1.3	1.4	1.7	1.6	2.1	2.3	2.5	2.2	1.9	-0.3	+0.3
Crack [7]	1.2	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.0	+0.1
Other Cocaine [8]	4.7	3.3	2.1	1.8	1.6	1.0	1.0	1.3	1.2	1.5	1.5	1.5	1.3	1.6	1.9	2.2	2.0	1.9	1.7	1.8	1.6	1.6	1.4	1.4	1.3	1.2	1.7	1.4	2.0	2.0	2.2	1.7	1.2	-0.5	-0.2
Heroin	0.1	0.1	0.1	0.0	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.0	-0.1
Narcotics other than Heroin [10,11]	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.8	0.6	0.9	0.8	1.1	1.2	1.5	2.2	2.8	2.8	3.3	3.1	3.3	3.5	3.3	3.3	2.8	2.6	2.6	2.1	1.8	1.9	1.2	0.9	0.7	0.9	+0.1	-0.9 sss
Amphetamines, Adjusted [10,12]	2.5	1.9	1.7	1.3	1.3	1.3	1.5	1.5	1.3	1.5	1.4	1.6	1.9	2.0	2.1	2.3	2.2	2.0	2.0	2.0	2.0	2.3	2.6	2.8	2.9	2.9	3.3	2.9	2.9	2.9	2.8	2.4	2.0	-0.4	-0.9 ss
Methamphetamine [9]	—	—	—	—	—	—	—	—	—	—	—	0.8	0.6	1.0	1.0	0.8	0.6	0.7	0.4	0.5	0.3	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.2	0.2	0.4	0.2	0.2	0.0	-0.1

(Table continued on next page.)

TABLE 5-3 (cont.)
Trends in 30-Day Prevalence of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*6,700*	*6,600*	*6,700*	*6,600*	*6,800*	*6,700*	*6,500*	*6,400*	*6,300*	*6,400*	*6,200*	*6,000*	*5,700*	*5,800*	*5,300*	*5,300*	*5,700*	*5,400*	*5,100*	*4,800*	*4,900*	*4,900*	*4,900*	*4,600*	*4,600*	*4,400*	*4,200*	*4,000*	*3,700*	*3,600*	*3,600*	*3,500*	*4,700*		
Sedatives (Barbiturates) [10,21]	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.7	0.7	0.8	0.8	0.9	1.1	1.3	1.3	1.3	1.6	1.6	1.4	1.6	1.8	1.2	1.1	1.1	1.1	1.2	1.0	0.8	1.0	0.6	0.9	0.8	0.8	0.0	0.0
Methaqualone [10]	0.1	*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [4,10]	1.4	1.2	1.0	1.0	1.0	0.9	0.8	1.1	0.9	1.1	1.1	1.2	1.5	1.8	2.7	2.3	2.5	2.6	2.3	2.6	2.6	2.8	2.2	2.3	1.8	1.9	1.9	1.7	1.8	1.5	1.4	1.2	1.0	-0.2	-0.7 ss
Alcohol [14,76]	73.7	72.0	70.7	70.2	68.8	67.8	67.7	67.9	66.8	67.1	66.6	67.9	66.6	67.2	67.9	66.9	67.7	68.1	68.7	69.5	69.7	69.7	68.5	68.9	69.7	69.1	69.1	68.1	69.7	67.9	67.0	68.2	64.7	-3.5 sss	-3.4 sss
Been Drunk [15,40,77]	—	—	—	35.0	35.2	32.2	31.9	32.2	31.2	34.0	33.4	34.1	32.6	33.9	36.3	36.4	36.4	38.0	40.5	39.7	40.0	39.0	38.2	38.3	38.4	36.8	38.5	33.9	36.3	35.3	34.9	35.8	30.8	-5.0 sss	-3.1 s
Flavored Alcoholic Beverage [16]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.4	25.9	24.1	24.8	25.1	23.3	23.1	23.2	23.3	23.8	25.8	23.2	27.5	25.1	27.0	31.6	35.9	+4.4	+12.8 sss
Cigarettes [51,78]	28.9	28.9	27.8	27.7	27.5	27.4	27.2	28.2	28.5	28.5	29.0	28.5	27.9	27.7	28.5	27.3	28.0	27.8	26.6	25.6	24.5	23.4	22.6	21.2	19.5	19.5	17.7	16.5	14.3	14.8	12.7	11.8	9.5	-2.3 sss	-7.0 sss
Any Vaping [9,27,52,79]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.7	5.8	11.3	16.2	22.1	19.0	-3.1 ss	—
Vaping Marijuana [9,80]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	8.6	13.0	10.8	-2.2 ss	—
Vaping Nicotine [9,53]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.2	9.9	14.0	13.7	-0.4	—
Vaping Just Flavoring [9]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.9	3.7	3.1	4.0	+0.9	—
Steroids [17]	—	0.2	0.1	0.3	0.1	*	0.2	0.2	0.2	0.2	0.2	0.2	0.1	*	0.2	0.4	0.1	0.1	0.1	0.3	0.2	0.2	0.4	0.2	0.1	0.1	0.3	0.1	0.2	0.2	0.2	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5.

TABLE 5-4
Trends in 30-Day Prevalence of Daily Use of Various Types of Drugs among Respondents of Modal Ages 19–30

(Entries are percentages.)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Approximate Weighted N =	*7,900*	*7,900*	*7,900*	*7,800*	*8,000*	*7,800*	*7,600*	*7,500*	*7,500*	*7,400*	*7,200*	*7,100*	*6,800*	*6,800*	*6,300*	*6,400*	*6,800*	*6,400*	*6,100*	*5,800*	*5,900*	*5,800*	*5,800*	*5,500*	*5,400*	*5,200*	*5,000*	*4,700*	*4,400*	*4,400*	*4,400*	*4,200*	*4,700*		
Marijuana [19]	3.3	3.3	2.5	2.4	2.3	2.5	2.8	3.2	3.1	3.5	3.4	3.9	3.7	4.4	4.2	4.8	4.5	4.7	4.7	4.7	5.0	5.4	5.1	5.7	5.5	5.7	6.7	6.5	7.5	7.7	7.9	9.2	9.8	+0.5	+3.3 sss
Cocaine	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	*	*	*	0.1	*	0.0	*	0.1	0.1	0.1	0.1	*	*	0.1	*	*	*	*	0.1	*	0.1	*	0.1	*	*	0.0	0.0
Amphetamines	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	-0.1	0.0
Alcohol																																			
Daily [14,19,81]	6.3	5.6	5.1	5.1	4.8	4.7	4.2	4.0	4.3	4.9	4.0	4.8	4.1	4.4	4.5	4.8	4.4	5.3	5.2	5.5	5.2	5.6	4.9	5.2	5.8	5.2	5.4	5.2	5.6	5.2	4.6	4.2	5.3	+1.1 s	+0.1
Been Drunk [15,19]	—	—	—	0.5	0.4	0.4	0.5	0.2	0.3	0.9	0.5	0.8	0.4	0.3	0.5	0.8	0.7	0.6	0.6	0.6	0.4	0.9	0.6	0.6	0.4	0.5	0.6	0.4	0.3	0.3	0.4	0.3	0.5	+0.1	+0.1
5+ Drinks in a Row in Last 2 Weeks [82]	33.9	32.9	31.9	32.0	31.7	32.0	32.0	30.9	31.4	32.3	31.8	33.2	31.8	33.3	34.3	34.2	35.4	35.7	36.3	36.1	37.0	36.0	35.4	35.5	35.1	34.4	33.1	31.3	31.9	31.3	30.5	31.8	28.0	-3.8 sss	-3.3 sss
10+ Drinks in a Row in Last 2 Weeks [54,83]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.7	11.0	11.2	12.3	12.5	12.1	11.0	11.3	10.1	11.9	10.5	9.6	11.8	11.3	11.9	12.4	+0.5	+2.0
15+ Drinks in a Row in Last 2 Weeks [54]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5	4.3	4.7	4.4	4.5	4.6	3.6	4.6	3.9	3.7	3.0	2.4	3.3	3.4	1.8	2.9	+1.0	-0.1
Cigarettes [55]																																			
Daily [84]	23.1	23.2	22.0	22.0	21.0	21.0	20.7	21.1	21.1	20.3	20.9	20.6	20.5	19.6	20.6	19.6	20.1	19.5	18.6	17.3	16.9	15.3	15.2	13.9	13.0	12.0	11.2	9.9	8.6	8.6	7.6	6.4	5.3	-1.2 s	-4.6 sss
1/2 Pack+/Day [56,85]	18.4	18.3	17.8	16.8	16.3	16.1	15.7	16.0	15.4	15.0	15.1	14.8	14.4	13.9	14.2	13.7	13.3	12.8	12.2	11.4	10.6	9.5	9.6	7.8	7.6	7.0	6.8	6.0	5.2	4.6	4.1	3.5	2.8	-0.7	-3.2 sss

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 5-5.

TABLE 5-5
Trends in Annual and 30-Day Prevalence of an Illicit Drug Use Index [1]
among Respondents of Modal Ages 19–30
Total and by Gender

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	2015–2020 change
Any Illicit Drug																																			
Total	34.9	31.6	28.3	25.8	26.4	26.3	26.5	27.5	27.4	27.4	27.3	27.2	27.6	29.1	30.6	31.0	31.8	31.6	31.1	30.8	32.9	32.5	32.1	33.3	32.6	34.7	36.6	37.4	38.5	40.5	42.6	44.1	45.4	+1.3	+8.0 sss
Males	38.2	35.2	31.4	29.2	29.3	29.3	30.7	30.3	30.5	30.2	31.0	30.7	31.4	31.8	33.7	34.0	35.4	34.0	34.8	33.6	36.8	35.1	37.0	36.6	36.8	37.7	39.8	41.0	41.8	43.5	44.5	46.8	45.7	-1.1	+4.7 ss
Females	32.2	28.7	25.7	23.0	24.0	23.9	23.1	25.3	25.0	25.3	24.6	24.7	24.9	27.1	28.5	28.9	29.3	30.0	28.6	29.1	30.3	30.8	28.7	31.3	29.8	32.8	34.4	35.0	36.3	38.6	41.2	42.4	45.0	+2.6	+10.0 sss
Any Illicit Drug other than Marijuana																																			
Total	20.7	17.9	15.4	13.6	13.0	11.8	12.3	12.8	12.4	13.0	12.1	12.3	12.9	13.9	15.5	17.0	17.6	18.1	17.9	17.2	18.5	17.4	17.9	17.0	16.7	17.7	21.0	18.9	19.4	19.9	19.3	19.1	19.1	+0.1	+0.3
Males	23.4	20.7	17.7	15.7	14.9	13.4	15.0	15.1	14.8	14.7	14.9	14.9	15.6	15.2	17.9	18.8	20.1	20.1	20.8	19.4	21.0	18.9	20.7	19.2	19.0	20.2	23.6	22.3	22.1	22.9	22.1	21.8	21.7	-0.1	-0.7
Females	18.5	15.5	13.4	11.9	11.4	10.6	10.1	10.9	10.6	11.7	10.0	10.4	10.9	13.0	13.9	15.8	15.9	16.8	15.9	15.8	16.9	16.3	15.9	15.6	15.1	15.9	19.2	16.6	17.6	17.9	17.6	17.4	17.3	0.0	+0.8
Any Illicit Drug																																			
Total	19.8	17.4	15.0	14.6	14.2	14.0	14.5	15.0	14.9	15.2	14.6	15.4	15.9	16.6	17.7	18.6	17.8	18.1	17.6	18.0	18.8	19.1	18.2	19.6	19.0	20.9	21.4	22.0	23.2	24.6	26.5	28.5	28.3	-0.2	+6.4 sss
Males	23.1	21.4	17.9	18.0	17.0	16.5	18.4	18.1	18.2	18.4	18.5	18.4	19.1	19.6	21.5	21.2	21.8	21.3	21.2	21.5	22.6	22.1	22.9	23.0	23.1	25.2	24.4	25.8	26.5	28.7	28.0	31.8	29.4	-2.5	+3.6 s
Females	17.0	14.1	12.5	11.8	12.0	12.0	11.5	12.5	12.3	12.8	11.8	13.2	13.5	14.5	15.1	16.9	15.1	16.0	15.2	15.7	16.2	17.1	14.9	17.4	16.3	18.0	19.4	19.4	21.0	21.9	25.4	26.4	27.4	+1.0	+7.9 sss
Any Illicit Drug other than Marijuana																																			
Total	9.2	7.3	5.6	5.3	5.1	4.5	4.9	5.3	4.5	5.2	5.0	5.4	5.5	6.3	7.1	7.9	7.9	7.9	7.8	8.2	8.6	8.4	8.2	8.0	7.5	7.9	9.8	8.2	8.9	8.8	8.4	7.9	7.8	-0.1	-0.5
Males	10.4	9.1	6.4	6.3	5.8	5.3	6.3	6.4	5.6	6.2	6.6	6.4	6.7	7.1	8.0	8.9	9.8	8.9	9.4	9.4	10.0	8.6	9.6	9.3	8.6	9.1	11.4	10.1	10.4	10.6	9.8	9.6	9.1	-0.5	-1.0
Females	8.2	5.8	5.0	4.4	4.5	3.8	3.8	4.4	3.7	4.4	3.8	4.6	4.6	5.7	6.6	7.2	6.6	7.3	6.7	7.5	7.7	8.3	7.3	7.2	6.7	7.2	8.7	7.0	7.9	7.6	7.5	6.8	6.8	-0.1	-0.2
All Respondents																																			
Total	*7,900*	*7,900*	*7,900*	*7,800*	*8,000*	*7,800*	*7,600*	*7,500*	*7,500*	*7,400*	*7,200*	*7,100*	*6,800*	*6,800*	*6,300*	*6,400*	*6,800*	*6,400*	*6,100*	*5,800*	*5,900*	*5,800*	*5,800*	*5,500*	*5,400*	*5,200*	*5,000*	*4,700*	*4,400*	*4,400*	*4,400*	*4,200*	*4,700*		
Males	*3,600*	*3,500*	*3,600*	*3,500*	*3,600*	*3,500*	*3,400*	*3,300*	*3,200*	*3,200*	*3,100*	*3,000*	*2,900*	*2,900*	*2,600*	*2,600*	*2,800*	*2,600*	*2,500*	*2,300*	*2,300*	*2,300*	*2,300*	*2,200*	*2,200*	*2,100*	*2,000*	*1,900*	*1,800*	*1,800*	*1,800*	*1,700*	*1,900*		
Females	*4,300*	*4,300*	*4,400*	*4,300*	*4,400*	*4,300*	*4,200*	*4,200*	*4,200*	*4,200*	*4,100*	*4,100*	*3,900*	*3,900*	*3,700*	*3,800*	*4,000*	*3,800*	*3,600*	*3,500*	*3,500*	*3,500*	*3,400*	*3,300*	*3,200*	*3,100*	*3,000*	*2,900*	*2,600*	*2,600*	*2,600*	*2,500*	*2,800*		

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See footnotes following Table 5-5.

Footnotes for Tables 5-1 through 5-5

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
The illicit drugs not listed here show a daily prevalence of 0.2% or less in all years.
' * ' indicates a prevalence rate of less than 0.05%.
' — ' indicates data not available.

[1]Use of any illicit drug includes any use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), methaqualone (until 1990), or tranquilizers not under a doctor's orders.

[2]This drug was asked about in four of the five questionnaire forms in 1986–1989; *N* is four fifths of *N* indicated. Data were based on five of the six questionnaire forms in 1990–1998; *N* is five sixths of *N* indicated. Data were based on three of six questionnaire forms in 1999–2019; *N* is three sixths of *N* indicated.

[3]This drug was asked about in one questionnaire form. *N* is one fifth of *N* indicated in 1986–1988 and one sixth of *N* indicated in 1990–1994.

[4]In 2001 the question text was changed on three of the six questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. For tranquilizers, Miltown was replaced with Xanax. Beginning in 2002 the remaining forms were changed to the new wording.

[5]This drug was asked about in one of the five questionnaire forms in 1986–1988; *N* is one fifth of *N* indicated. Data were based on one of six questionnaire forms in 1990–2019; *N* is one sixth of *N* indicated. For 10+ drinks in a row only: data based on five of six forms beginning in 2019.

[6]This drug was asked about in two of the five questionnnaire forms in 1989; *N* is two fifths of *N* indicated. Data were based on two of the six questionnaire forms in 1990–2001; *N* is two sixths of *N* indicated. Data were based on three of the six questionnaire forms in 2002–2019; *N* is three sixths of *N* indicated.

[7]This drug was asked about in two of the five questionnaire forms in 1987–1989; *N* is two fifths of *N* indicated. Data were based on all six questionnaire forms in 1990–2001. Data were based on five of six questionnaire forms in 2002–2018; *N* is five sixths of *N* indicated. Data based on one of six forms beginning in 2019.

[8]This drug was asked about in one of the five questionnaire forms in 1987–1989; *N* is one fifth of *N* indicated. Data were based on four of the six questionnaire forms in 1990–2018; *N* is four sixths of *N* indicated. Data based on one of six forms beginning in 2019.

[9]This drug was asked about in two of the six questionnaire forms. For vaping measure only: data based on four of six forms beginning in 2019 and all six forms beginning in 2020.

[10]Only drug use that was not under a doctor's orders is included here.

[11]In 2002 the question text was changed in three of the six questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced by Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; *N* is three sixths of *N* indicated. In 2003 the remaining forms were changed to the new wording. The data are based on all forms in 2003 and beyond.

[12]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

[13]Sedatives, adjusted" data are a combination of barbiturate and methaqualone data.

[14]In 1993 and 1994, the question text was changed slightly in three of the six questionnaire forms to indicate that a drink meant more than just a few sips. Because this revision resulted in rather little change in reported prevalence in the surveys of high school graduates, the data for all forms combined are used in order to provide the most reliable estimate of change. After 1994 the new question text was used in all six of the questionnaire forms.

[15]This drug was asked about in three of the six questionnaire forms; *N* is three sixths of *N* indicated. For small cigars only, beginning in 2014 question asked on two of the six questionnaire forms; N is two sixths of N indicated.

[16]This drug was asked about in one of the six questionnaire forms; *N* is one sixth of *N* indicated.

[17]This drug was asked about in one of the five questionnaire forms in 1989; *N* is one fifth of *N* indicated. Data were based on two of the six questionnaire forms in 1990–2019; N is two sixths of *N* indicated.

[18]This drug was asked about in two of the six questionnaire forms in 2002–2009; *N* is two sixths of *N* indicated. Data were based on three of the six questionnaire forms in 2010-2019. N is three sixths of N indicated.

[19]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes, measured as actual daily use, and 5+ drinks, measured as having five or more drinks in a row in the last two weeks.

[20]In 2012 the alcoholic beverage containing caffeine question text was changed to alcoholic beverage mixed with an energy drink. The data in 2011 and 2012 are not comparable due to this question change.

[21]In 2013 the question text was changed on all forms: Tuinal, Nembutal, and Seconal were replaced with Ambien, Lunesta, and Sonata. The data in 2012 and 2013 are not comparable due to this question change.

[22]This drug was asked about in two of the six questionnaire forms in 2011-2012; N is two sixths of N indicated. Data were based on three of the six questionaire forms in 2013-2019; N is three sixths of N indicated.

[23]This drug was asked about in one of the six questionnaire forms in 2009; N is one sixth of N indicated; Data were based on two of the six questionnaire forms in 2010-2011; N is two sixths of N indicated. Data were based on three of the six questionnaire forms in 2012-2019; N is three sixths of N indicated.

[24]This drug was asked about in two of the six questionnaire forms in 2002-2009; N is two sixths of N indicated; Data were based on three of the six questionnaire forms in 2010-2011; N is three sixths of N indicated. Data were based on two of the six questionnaire forms in 2012-2019; N is two sixths of N indicated.

[25]This drug was asked about in all available questionnaire forms until 2014. Beginning in 2014, data are based on five of the six questionnaire forms; N is five sixths of N indicated.

Footnotes for Tables 5-1 through 5-5 (cont.)

[26]This drug was asked about in two of the five questionnnaire forms in 1989; *N* is two fifths of *N* indicated. Data were based on two of the six questionnaire forms in 1990–2001; *N* is two sixths of *N* indicated. Data were based on three of the six questionnaire forms in 2002–2013; *N* is three sixths of *N* indicated. In 2014, a version of the question was added to an additional form that included "molly" in the description. In 2015 the remaining forms were changed to this updated wording. Data for both versions of the question are included here. Beginning in 2015, data based on four of th six questionnaire forms. *N* is four sixths of *N* indicated.

[27]In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions.

[28]For the estimate of lifetime Narcotics other than Heroin in 2018, there was a significant difference (p<.01) between the typical mail condition (13.9%) and new web-push condition (10.9%) of survey administration.

[29]For the estimate of lifetime Flavored Alcoholic Beverages in 2018, there was a significant difference (p<.01) between the typical mail condition (76.4%) and new web-push condition (85.5%) of survey administration.

[30]For the estimate of lifetime Any Vaping in 2018, there was a significant difference (p<.05) between the typical mail condition (33.4%) and new web-push condition (40.4%) of survey administration.

[31]For the estimate of lifetime Vaping Nicotine in 2018, there was a significant difference (p<.01) between the typical mail condition (23.8%) and new web-push condition (30.9%) of survey administration.

[32]For the estimate of lifetime Vaping Just Flavoring in 2018, there was a significant difference (p<.05) between the typical mail condition (19.4%) and new web-push condition (24.5%) of survey administration.

[33]For the estimate of annual Bath Salts in 2018, there was a significant difference (p<.05) between the typical mail condition (0.6%) and new web-push condition (0.0%) of survey administration.

[34]For the estimate of annual Ketamine in 2018, there was a significant difference (p<.05) between the typical mail condition (1.6%) and new web-push condition (0.4%) of survey administration.

[35]For the estimate of annual Tobacco with a Hookah in 2018, there was a significant difference (p<.05) between the typical mail condition (11.6%) and new web-push condition (14.9%) of survey administration.

[36]For the estimate of annual Alcoholic Beverages mixed with Energy Drinks in 2018, there was a significant difference (p<.05) between the typical mail condition (34.6%) and new web-push condition (25.9%) of survey administration.

[37]For the estimate of annual Any Vaping in 2018, there was a significant difference (p<.05) between the typical mail condition (24.3%) and new web-push condition (29.9%) of survey administration.

[38]For the estimate of annual Vaping Nicotine in 2018, there was a significant difference (p<.05) between the typical mail condition (15.6%) and new web-push condition (20.6%) of survey administration.

[39]For the estimate of 30-day Marijuana in 2018, there was a significant difference (p<.05) between the typical mail condition (22.5%) and new web-push condition (25.5%) of survey administration.

[40]For the estimate of 30-day Been Drunk in 2018, there was a significant difference (p<.05) between the typical mail condition (38.8%) and new web-push condition (33.5%) of survey administration.

[41]For the estimate of Lifetime Sedatives (Barbiturates) in 2019, there was a significant difference (p<.05) between the typical mail condition (6.3%) and new web-push condition (8.1%) of survey administration.

[42]For the estimate of Lifetime Any Vaping in 2019, there was a significant difference (p<.001) between the typical mail condition (37.1%) and new web-push condition (49.7%) of survey administration.

[43]For the estimate of Lifetime Vaping Marijuana in 2019, there was a significant difference (p<.001) between the typical mail condition (23.0%) and new web-push condition (32.5%) of survey administration.

[44]For the estimate of Lifetime Vaping Nicotine in 2019, there was a significant difference (p<.001) between the typical mail condition (31.4%) and new web-push condition (40.9%) of survey administration.

[45]For the estimate of Lifetime Vaping Just Flavopring in 2019, there was a significant difference (p<.001) between the typical mail condition (18.1%) and new web-push condition (25.2%) of survey administration.

[46]For the estimate of Annual Cigarettes in 2019, there was a significant difference (p<.001) between the typical mail condition (19.0%) and new web-push condition (23.6%) of survey administration.

[47]For the estimate of Annual Tobacco with a Hookah in 2019, there was a significant difference (p<.05) between the typical mail condition (8.1%) and new web-push condition (11.0%) of survey administration.

[48]For the estimate of Annual Any Vaping in 2019, there was a significant difference (p<.001) between the typical mail condition (30.4%) and new web-push condition (39.5%) of survey administration.

[49]For the estimate of Annual Vaping Marijuana in 2019, there was a significant difference (p<.01) between the typical mail condition (18.9%) and new web-push condition (24.4%) of survey administration.

[50]For the estimate of Annual Vaping Nicotine in 2019, there was a significant difference (p<.001) between the typical mail condition (21.7%) and new web-push condition (28.0%) of survey administration.

[51]For the estimate of 30-Day Cigarettes in 2019, there was a significant difference (p<.001) between the typical mail condition (9.3%) and new web-push condition (13.5%) of survey administration.

[52]For the estimate of 30-Day Any Vaping in 2019, there was a significant difference (p<.01) between the typical mail condition (20.0%) and new web-push condition (25.0%) of survey administration.

[53]For the estimate of 30-Day Vaping Nicotine in 2019, there was a significant difference (p<.05) between the typical mail condition (13.1%) and new web-push condition (16.7%) of survey administration.

[55]For the estimate of Daily Cigarettes in 2019, there was a significant difference (p<.01) between the typical mail condition (4.9%) and new web-push condition (7.3%) of survey administration.

[56]For the estimate of Smoking Half Pack or More per Day in 2019, there was a significant difference (p<.05) between the typical mail condition (2.4%) and new web-push condition (3.6%) of survey administration.

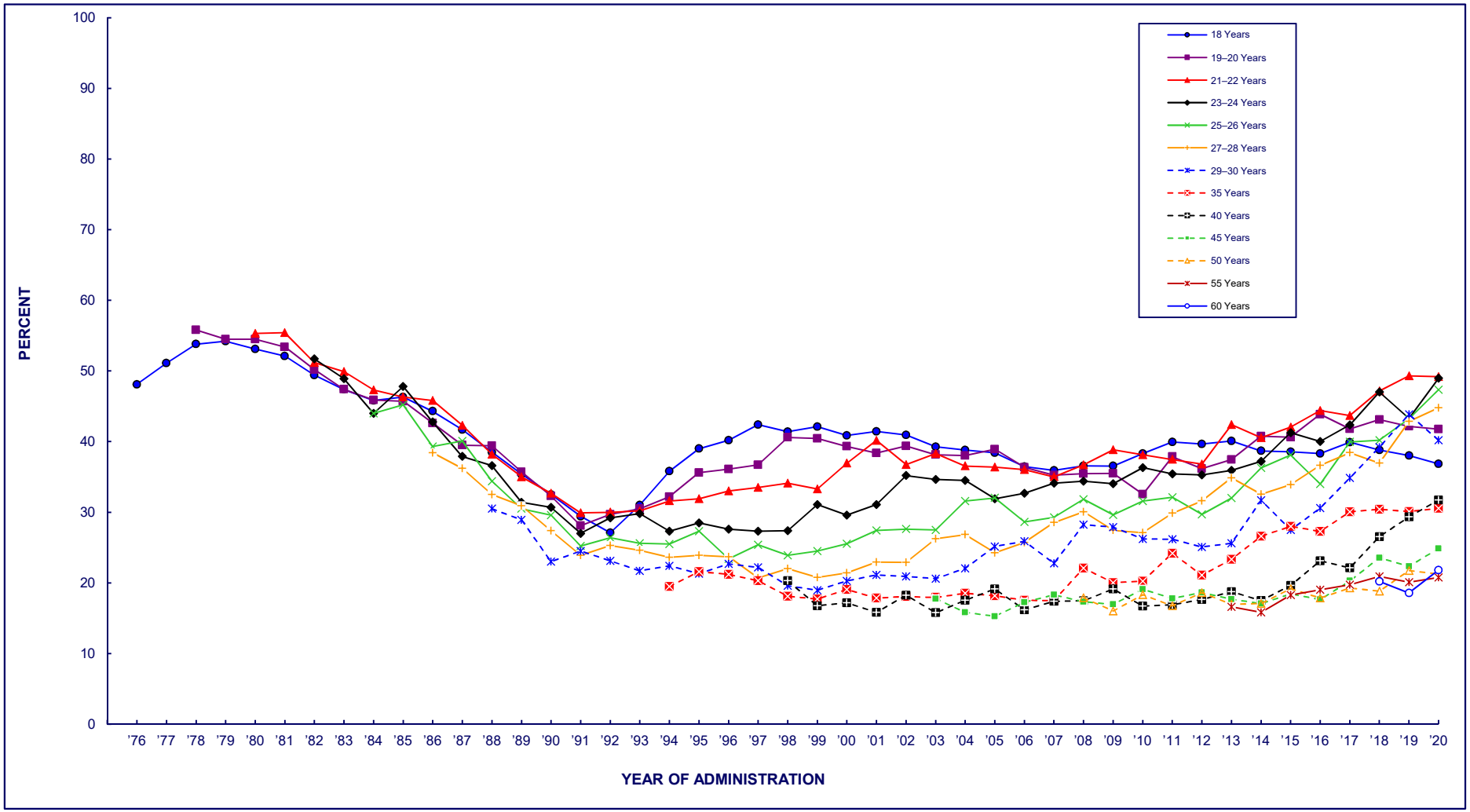
Footnotes for Tables 5-1 through 5-5 (cont.)

[57]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+1.9, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[58]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+1.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[59]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-1.8, p<.05).
[60]As noted, the one-year difference between 2019 and 2020 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-1.9, p<.01).
[61]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+3.2, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[62]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+1.2, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[63]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+2.9, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[64]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+5.8, p<.001).
65As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+2.5, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[66]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+2.9, p<.001).
[67]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+1.3, p<.05).
[68]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+2.3, p<.001).
69As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+0.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[70]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+9.7, p<.01).
[71]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-5.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[72]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+2.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[73]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-4.1, p<.05).
[74]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+0.1, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[75]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+0.5, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[76]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-4.2, p<.001).
[77]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-5.1, p<.01).
[78]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-4.0, p<.001).
[79]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-3.4, p<.05).
[80]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-2.4, p<.05).
[81]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+0.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[82]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-5.8, p<.001).
[83]As noted, the one-year difference between 2019 and 2020 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (+4.5, p<.05).

Footnotes for Tables 5-1 through 5-5 (cont.)

[84]As noted, the one-year difference between 2019 and 2020 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-2.2, p<.001).
[85]As noted, the one-year difference between 2019 and 2020 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-1.3, p<.01).

FIGURE 5-1
ANY ILLICIT DRUG
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-1 (cont.)
ANY ILLICIT DRUG
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	48.1												
1977	51.1												
1978	53.8	55.8											
1979	54.2	54.5											
1980	53.1	54.5	55.3										
1981	52.1	53.4	55.4										
1982	49.4	50.2	51.2	51.7									
1983	47.4	47.4	49.9	48.9									
1984	45.8	45.9	47.3	44.0	44.0								
1985	46.3	45.7	46.3	47.8	45.2								
1986	44.3	42.6	45.8	42.8	39.3	38.4							
1987	41.7	39.5	42.3	37.9	40.1	36.2							
1988	38.5	39.4	38.2	36.6	34.4	32.5	30.5						
1989	35.4	35.7	35.0	31.4	30.5	30.9	28.9						
1990	32.5	32.3	32.7	30.7	29.6	27.4	23.0						
1991	29.4	28.1	29.9	27.0	25.2	23.9	24.5						
1992	27.1	29.7	30.0	29.2	26.4	25.3	23.1						
1993	31.0	30.5	30.2	29.8	25.6	24.6	21.7						
1994	35.8	32.2	31.6	27.3	25.5	23.6	22.4	19.5					
1995	39.0	35.6	31.9	28.5	27.3	23.9	21.3	21.6					
1996	40.2	36.1	33.0	27.6	23.4	23.7	22.7	21.2					
1997	42.4	36.7	33.5	27.3	25.4	20.7	22.2	20.3					
1998	41.4	40.6	34.1	27.4	23.9	22.0	19.6	18.1	20.3				
1999	42.1	40.4	33.3	31.1	24.5	20.8	19.0	17.7	16.7				
2000	40.9	39.3	36.9	29.6	25.5	21.4	20.3	19.1	17.2				
2001	41.4	38.4	40.2	31.1	27.4	22.9	21.1	17.8	15.8				
2002	41.0	39.4	36.7	35.2	27.6	22.9	20.9	18.1	18.2				
2003	39.3	38.1	38.3	34.6	27.5	26.3	20.6	17.9	15.8	17.8			
2004	38.8	38.0	36.5	34.5	31.6	26.8	22.0	18.5	17.5	15.8			
2005	38.4	38.9	36.4	31.9	32.0	24.3	25.2	18.2	19.1	15.3			
2006	36.5	36.3	36.0	32.7	28.6	25.7	25.9	17.5	16.2	17.2			
2007	35.9	35.2	35.0	34.1	29.3	28.5	22.7	17.5	17.4	18.3			
2008	36.6	35.5	36.7	34.4	31.8	30.1	28.2	22.1	17.5	17.3	17.9		
2009	36.5	35.5	38.8	34.1	29.6	27.4	27.9	20.0	19.1	17.0	16.0		
2010	38.3	32.5	38.1	36.3	31.6	27.1	26.2	20.2	16.7	19.1	18.3		
2011	40.0	37.9	37.5	35.4	32.1	29.9	26.2	24.2	16.9	17.8	16.8		
2012	39.7	36.2	36.8	35.3	29.7	31.6	25.1	21.1	17.6	18.6	18.6		
2013	40.1	37.5	42.4	35.9	32.0	34.9	25.6	23.3	18.7	17.7	17.0	16.6	
2014	38.7	40.8	40.6	37.2	36.3	32.5	31.7	26.6	17.5	17.1	17.1	15.8	
2015	38.6	40.6	42.0	41.2	38.1	33.9	27.5	28.0	19.6	18.4	19.2	18.3	
2016	38.3	43.9	44.4	40.0	34.0	36.6	30.6	27.3	23.1	17.6	17.8	19.0	
2017	39.9	41.8	43.7	42.4	40.0	38.4	34.9	30.1	22.1	20.3	19.3	19.7	
2018	38.8	43.1	47.2	47.0	40.2	36.9	39.2	30.4	26.5	23.5	18.8	20.9	20.2
2019	38.0	42.2	49.3	43.3	43.2	42.9	43.9	30.1	29.3	22.3	21.7	20.1	18.6
2020	36.8	41.8	49.2	49.0	47.3	44.8	40.2	30.5	31.7	24.9	21.2	20.8	21.8

Source. The Monitoring the Future study, the University of Michigan.

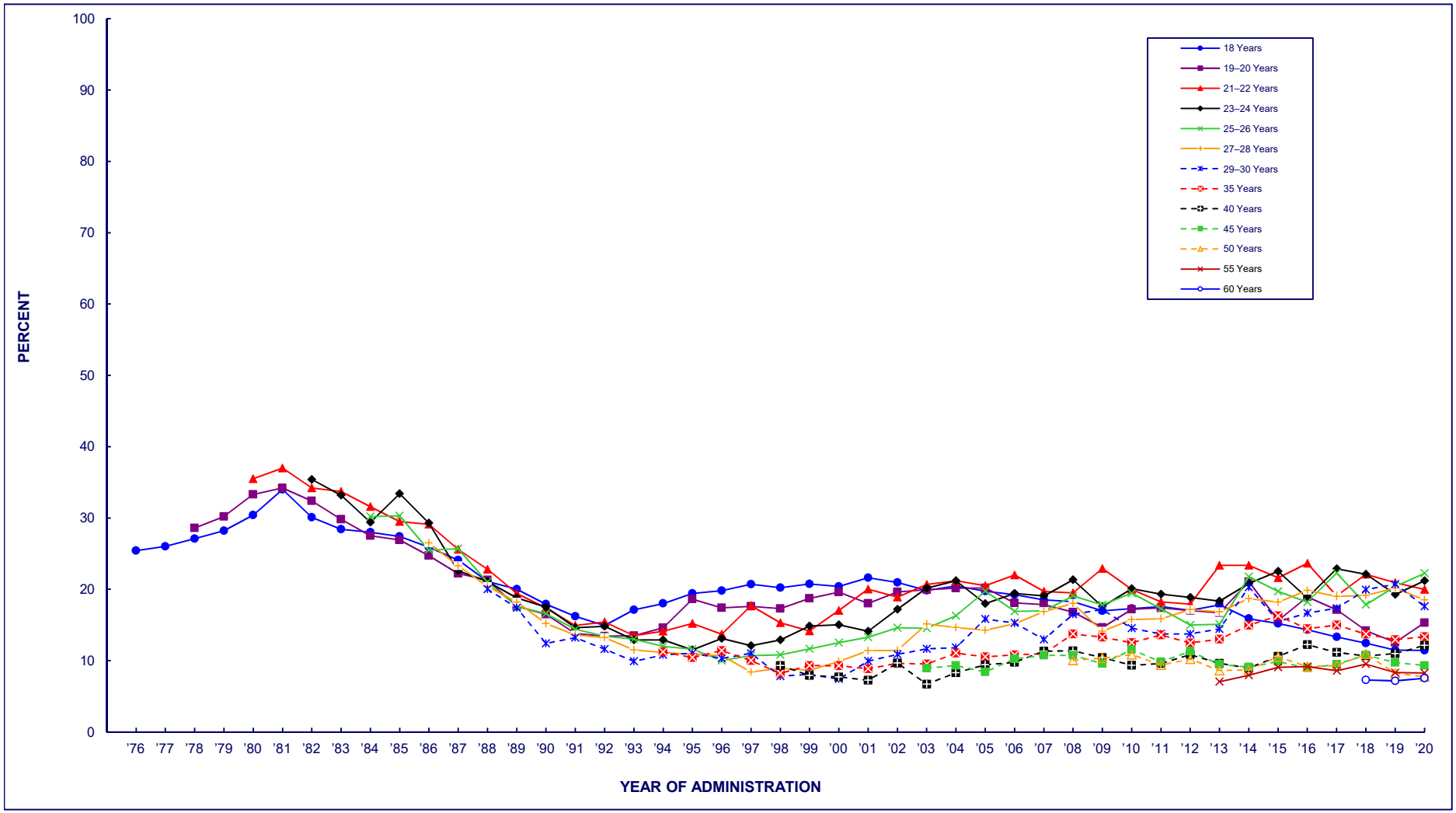
Notes. ' — ' indicates data not available.

FIGURE 5-2

ANY ILLICIT DRUG OTHER THAN MARIJUANA

Trends in Annual Prevalence

among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

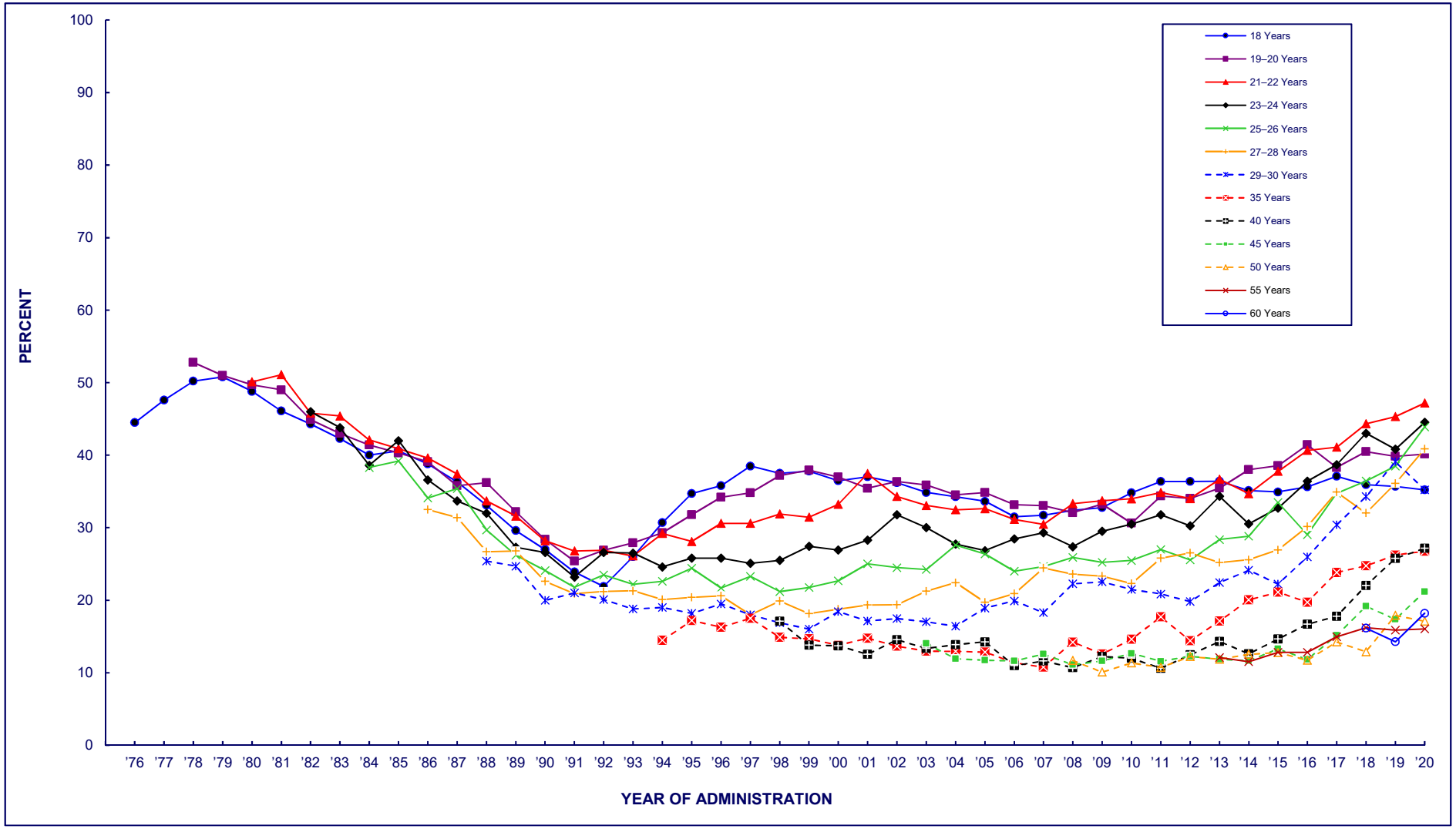
FIGURE 5-2 (cont.)
ANY ILLICIT DRUG OTHER THAN MARIJUANA
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	25.4												
1977	26.0												
1978	27.1	28.6											
1979	28.2	30.2											
1980	30.4	33.3	35.5										
1981	34.0	34.2	37.0										
1982	30.1	32.4	34.2	35.4									
1983	28.4	29.8	33.7	33.2									
1984	28.0	27.5	31.6	29.4	30.2								
1985	27.4	26.9	29.5	33.4	30.3								
1986	25.9	24.7	29.1	29.3	25.5	26.5							
1987	24.1	22.2	25.6	22.6	25.7	23.3							
1988	21.1	21.3	22.8	21.1	21.0	20.4	20.0						
1989	20.0	17.6	19.4	18.8	17.6	18.2	17.4						
1990	17.9	16.5	17.4	17.5	16.6	15.2	12.4						
1991	16.2	13.8	14.9	14.6	14.4	13.6	13.2						
1992	14.9	13.4	15.4	14.8	13.4	13.2	11.6						
1993	17.1	13.5	13.5	12.9	13.0	11.5	9.9						
1994	18.0	14.6	14.1	12.9	12.0	11.1	10.8	11.2					
1995	19.4	18.6	15.2	11.5	11.6	10.9	11.0	10.4					
1996	19.8	17.4	13.7	13.1	10.0	10.7	10.3	11.4					
1997	20.7	17.6	17.7	12.1	10.7	8.4	11.0	10.0					
1998	20.2	17.3	15.3	12.9	10.8	8.9	7.8	8.2	9.3				
1999	20.7	18.7	14.1	14.8	11.6	8.6	8.1	9.3	7.9				
2000	20.4	19.6	17.0	15.0	12.5	9.9	7.4	9.3	7.7				
2001	21.6	18.0	20.0	14.1	13.3	11.4	9.9	8.8	7.3				
2002	20.9	19.6	18.9	17.2	14.6	11.4	10.9	9.6	9.7				
2003	19.8	19.9	20.7	20.1	14.5	15.1	11.6	9.5	6.7	8.9			
2004	20.5	20.2	21.2	21.2	16.3	14.6	11.8	11.0	8.3	9.3			
2005	19.7	20.2	20.5	18.0	19.7	14.2	15.8	10.5	9.4	8.4			
2006	19.2	18.1	22.0	19.4	16.9	15.1	15.3	10.8	9.8	10.3			
2007	18.5	17.8	19.7	19.1	17.0	16.9	13.0	11.0	11.3	10.7			
2008	18.3	16.8	19.5	21.3	19.1	18.0	16.5	13.7	11.3	10.7	10.0		
2009	17.0	14.6	22.9	17.6	17.8	14.1	17.2	13.3	10.4	9.6	10.3		
2010	17.3	17.2	20.0	20.1	19.5	15.8	14.5	12.5	9.3	11.5	10.8		
2011	17.6	17.4	18.2	19.3	17.3	15.8	13.7	13.6	9.6	9.8	9.4		
2012	17.0	17.0	17.9	18.8	15.0	17.2	13.7	12.5	10.8	11.3	10.2		
2013	17.8	16.7	23.4	18.3	15.1	16.8	14.4	13.0	9.6	9.5	8.6	7.0	
2014	15.9	21.1	23.4	20.8	21.7	18.7	20.3	15.0	8.9	9.1	8.7	7.9	
2015	15.2	15.6	21.6	22.5	19.7	18.2	15.5	16.3	10.6	9.9	10.5	9.0	
2016	14.3	18.9	23.6	18.8	18.2	19.8	16.7	14.5	12.2	9.0	9.2	9.1	
2017	13.3	17.1	19.1	22.9	22.3	19.0	17.3	15.0	11.2	9.5	9.3	8.6	
2018	12.4	14.2	22.1	22.1	17.8	19.1	19.9	13.7	10.6	10.7	10.9	9.5	7.3
2019	11.5	12.6	20.9	19.3	20.4	20.2	20.7	12.9	11.0	9.7	8.2	8.3	7.2
2020	11.4	15.3	20.0	21.2	22.2	18.5	17.6	13.3	12.1	9.3	7.7	8.3	7.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-3a
MARIJUANA
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

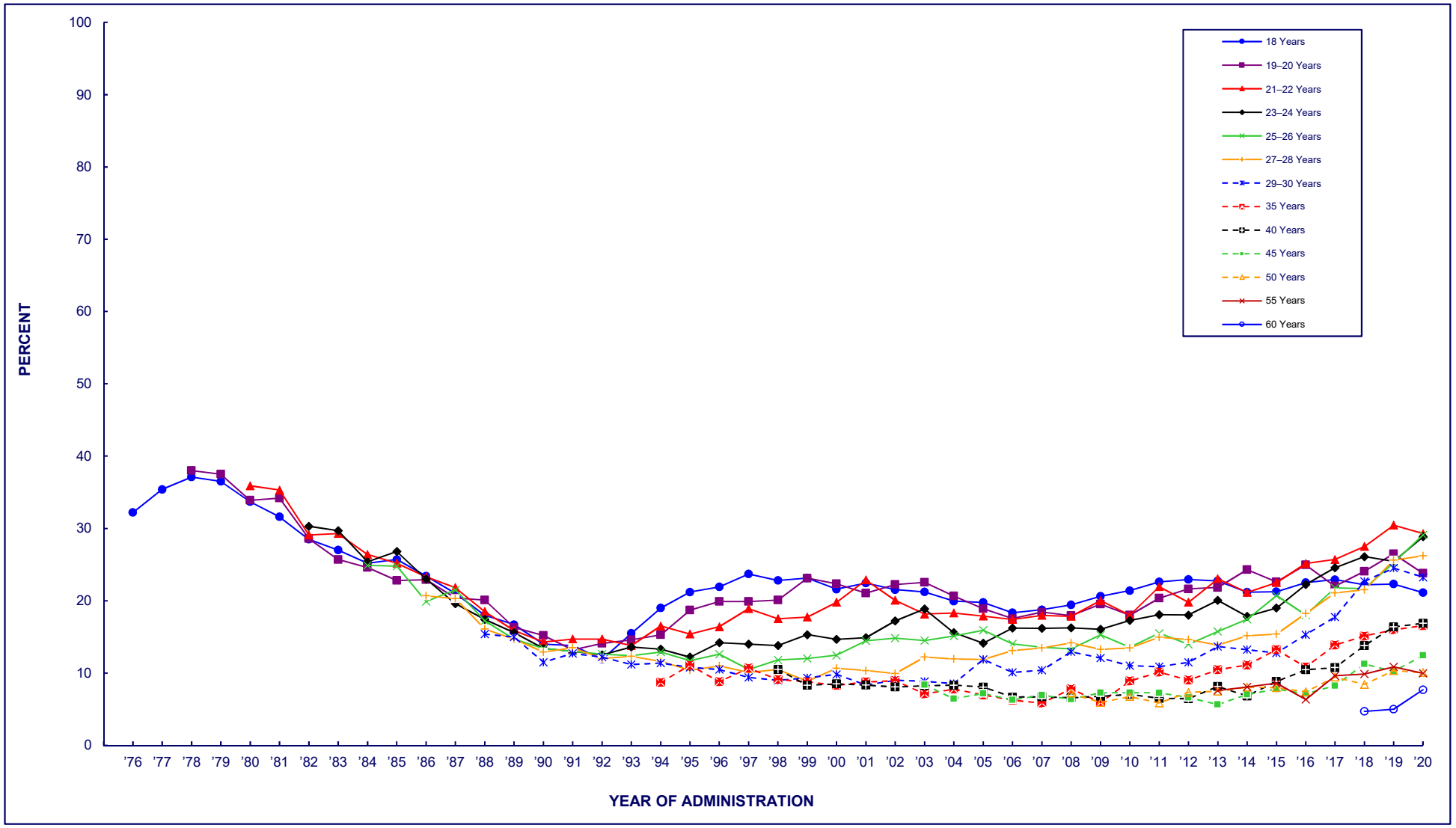
FIGURE 5-3a (cont.)
MARIJUANA
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	44.5												
1977	47.6												
1978	50.2	52.8											
1979	50.8	51.0											
1980	48.8	49.7	50.1										
1981	46.1	49.0	51.1										
1982	44.3	44.9	45.8	46.0									
1983	42.3	43.0	45.4	43.8									
1984	40.0	41.4	42.1	38.6	38.3								
1985	40.6	40.3	40.9	42.0	39.2								
1986	38.8	39.1	39.6	36.6	34.1	32.5							
1987	36.3	35.8	37.4	33.7	35.4	31.4							
1988	33.1	36.2	33.7	32.0	29.7	26.7	25.4						
1989	29.6	32.2	31.6	27.3	26.2	26.8	24.7						
1990	27.0	28.4	28.2	26.6	24.1	22.6	20.0						
1991	23.9	25.4	26.8	23.2	21.8	20.9	21.0						
1992	21.9	26.9	26.9	26.6	23.5	21.2	20.1						
1993	26.0	27.9	26.1	26.5	22.2	21.3	18.8						
1994	30.7	29.3	29.2	24.6	22.6	20.1	19.0	14.5					
1995	34.7	31.8	28.1	25.8	24.4	20.4	18.2	17.2					
1996	35.8	34.2	30.6	25.8	21.7	20.6	19.5	16.3					
1997	38.5	34.8	30.6	25.1	23.3	18.0	18.0	17.5					
1998	37.5	37.2	31.9	25.5	21.2	19.9	16.9	14.9	17.1				
1999	37.8	37.9	31.5	27.4	21.8	18.2	16.0	14.7	13.8				
2000	36.5	37.0	33.2	26.9	22.7	18.8	18.4	13.8	13.7				
2001	37.0	35.4	37.5	28.3	25.0	19.4	17.1	14.8	12.5				
2002	36.2	36.4	34.3	31.8	24.5	19.4	17.5	13.7	14.6				
2003	34.9	35.9	33.1	30.0	24.3	21.2	17.0	13.0	13.4	14.0			
2004	34.3	34.5	32.5	27.7	27.6	22.4	16.4	13.0	13.9	11.9			
2005	33.6	34.9	32.6	26.8	26.4	19.7	18.9	12.9	14.3	11.7			
2006	31.5	33.2	31.1	28.5	24.0	20.9	19.9	11.4	11.0	11.6			
2007	31.7	33.1	30.5	29.3	24.7	24.4	18.3	10.8	11.6	12.6			
2008	32.4	32.1	33.3	27.4	25.9	23.6	22.3	14.2	10.7	11.1	11.7		
2009	32.8	33.2	33.7	29.5	25.2	23.3	22.5	12.6	12.2	11.6	10.1		
2010	34.8	30.6	34.0	30.5	25.5	22.3	21.5	14.6	12.0	12.7	11.4		
2011	36.4	34.4	34.8	31.8	27.0	25.8	20.9	17.7	10.6	11.6	10.8		
2012	36.4	34.0	34.0	30.3	25.6	26.5	19.8	14.4	12.5	12.3	12.2		
2013	36.4	35.5	36.7	34.3	28.4	25.2	22.4	17.1	14.3	11.9	11.9	12.1	
2014	35.1	38.0	34.7	30.5	28.8	25.6	24.1	20.0	12.6	11.7	12.6	11.5	
2015	34.9	38.6	37.8	32.7	33.5	26.9	22.2	21.1	14.7	13.3	12.8	12.8	
2016	35.6	41.4	40.7	36.4	29.0	30.1	26.0	19.7	16.7	11.8	11.7	12.8	
2017	37.1	38.3	41.1	38.7	34.7	34.9	30.4	23.8	17.8	15.2	14.3	15.0	
2018	35.9	40.5	44.3	43.0	36.4	32.0	34.3	24.7	22.0	19.2	12.9	16.2	16.2
2019	35.7	39.8	45.3	40.8	38.5	36.1	39.1	26.2	25.8	17.4	17.9	15.9	14.3
2020	35.2	40.2	47.2	44.5	43.9	40.9	35.2	26.8	27.2	21.2	17.1	16.0	18.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-3b
MARIJUANA
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

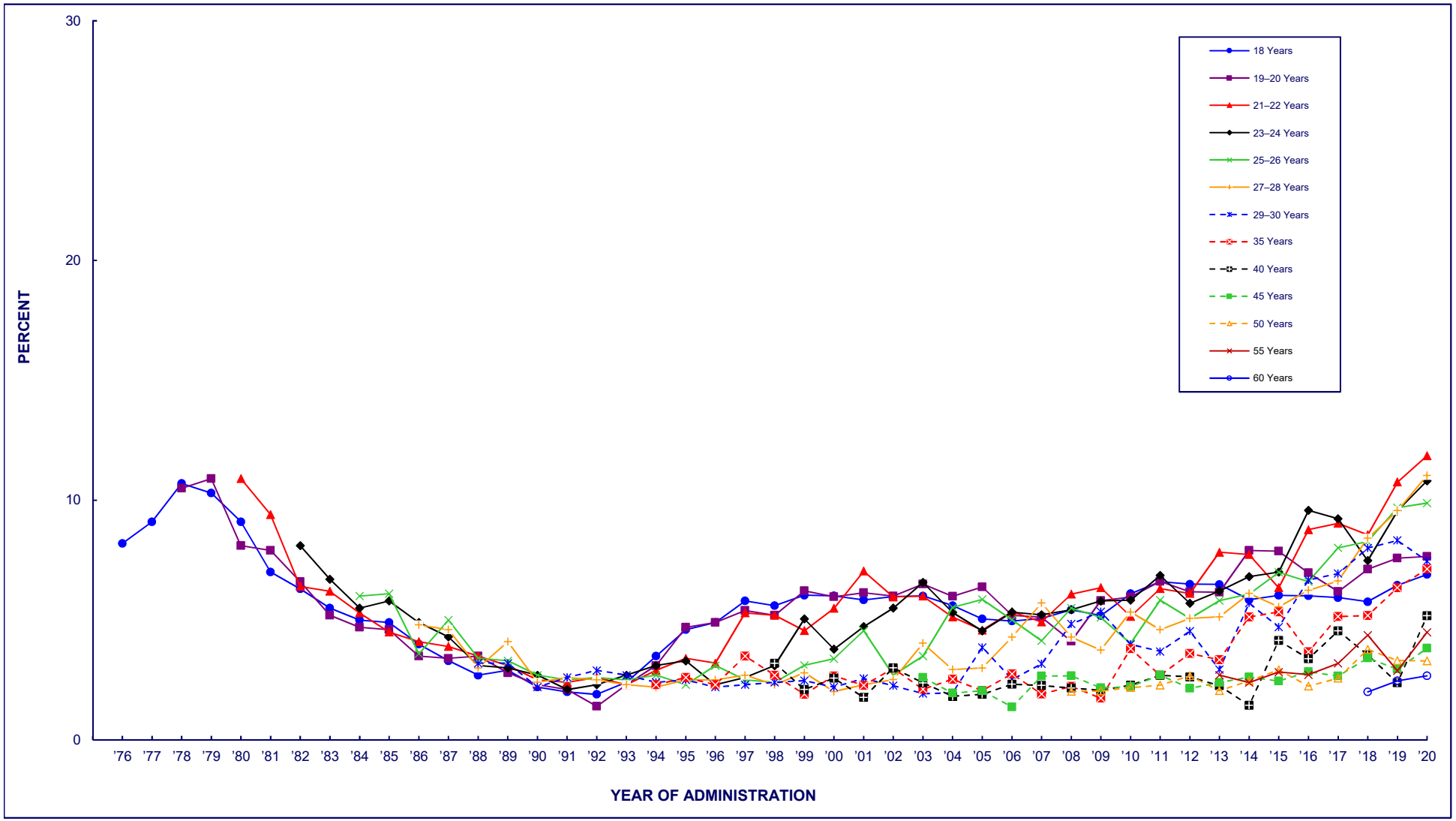
FIGURE 5-3b (cont.)
MARIJUANA
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	32.2												
1977	35.4												
1978	37.1	38.0											
1979	36.5	37.5											
1980	33.7	33.9	35.9										
1981	31.6	34.2	35.3										
1982	28.5	28.6	29.1	30.3									
1983	27.0	25.7	29.3	29.7									
1984	25.2	24.6	26.4	25.4	24.9								
1985	25.7	22.8	25.2	26.8	24.8								
1986	23.4	22.9	23.3	23.0	19.9	20.7							
1987	21.0	20.4	21.8	19.6	21.5	20.3							
1988	18.0	20.1	18.5	17.4	17.2	16.1	15.4						
1989	16.7	16.3	15.9	15.6	14.7	14.7	15.0						
1990	14.0	15.2	14.3	13.4	13.4	12.9	11.5						
1991	13.8	13.2	14.7	13.0	13.0	13.5	12.7						
1992	11.9	14.1	14.7	12.5	12.6	12.0	12.2						
1993	15.5	14.6	13.8	13.6	12.4	12.3	11.2						
1994	19.0	15.3	16.5	13.3	12.9	11.6	11.4	8.7					
1995	21.2	18.7	15.4	12.2	11.7	10.4	10.8	11.1					
1996	21.9	19.9	16.4	14.2	12.6	11.0	10.5	8.8					
1997	23.7	19.9	18.9	14.0	10.5	10.1	9.4	10.7					
1998	22.8	20.1	17.5	13.8	11.8	10.5	9.0	9.1	10.5				
1999	23.1	23.1	17.8	15.3	12.0	8.9	9.3	8.8	8.3				
2000	21.6	22.3	19.8	14.7	12.5	10.7	9.8	8.3	8.5				
2001	22.4	21.0	22.9	14.9	14.5	10.3	8.3	8.8	8.3				
2002	21.5	22.2	20.1	17.2	14.8	9.9	9.0	8.9	8.1				
2003	21.2	22.5	18.2	18.9	14.5	12.2	8.9	7.1	8.2	8.4			
2004	19.9	20.7	18.3	15.6	15.1	12.0	8.5	7.8	8.3	6.5			
2005	19.8	18.9	17.9	14.1	15.9	11.9	11.9	7.0	8.1	7.2			
2006	18.3	17.5	17.4	16.2	14.0	13.1	10.1	6.2	6.7	6.3			
2007	18.8	18.4	18.0	16.2	13.6	13.5	10.4	5.8	6.7	6.9			
2008	19.4	17.9	17.8	16.2	13.3	14.2	12.9	7.8	6.6	6.4	7.2		
2009	20.6	19.5	20.0	16.0	15.3	13.3	12.1	5.9	6.8	7.3	5.9		
2010	21.4	18.0	18.0	17.3	13.6	13.5	11.0	8.9	7.1	7.3	6.8		
2011	22.6	20.4	21.9	18.1	15.5	15.0	10.9	10.1	6.5	7.3	5.9		
2012	22.9	21.6	19.8	18.0	14.0	14.6	11.5	9.1	6.5	6.6	7.3		
2013	22.7	21.8	23.0	20.0	15.8	13.9	13.7	10.4	8.2	5.7	7.5	7.6	
2014	21.2	24.3	21.2	17.8	17.4	15.1	13.2	11.1	6.8	7.1	8.1	8.1	
2015	21.3	22.6	22.5	19.0	20.7	15.4	12.8	13.2	8.8	7.8	8.0	8.6	
2016	22.5	24.9	25.1	22.3	18.0	18.2	15.3	10.8	10.5	7.2	7.4	6.4	
2017	22.9	22.0	25.7	24.6	21.8	21.1	17.8	13.9	10.8	8.2	9.4	9.6	
2018	22.2	24.1	27.5	26.1	21.7	21.5	22.7	15.1	13.8	11.3	8.4	9.9	4.7
2019	22.3	26.5	30.5	25.4	25.3	25.6	24.5	16.0	16.4	10.2	10.3	10.9	5.0
2020	21.1	23.8	29.3	28.9	29.1	26.2	23.3	16.6	16.9	12.4	10.1	10.0	7.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-3c
MARIJUANA
Trends in 30-Day Prevalence of Daily Use
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

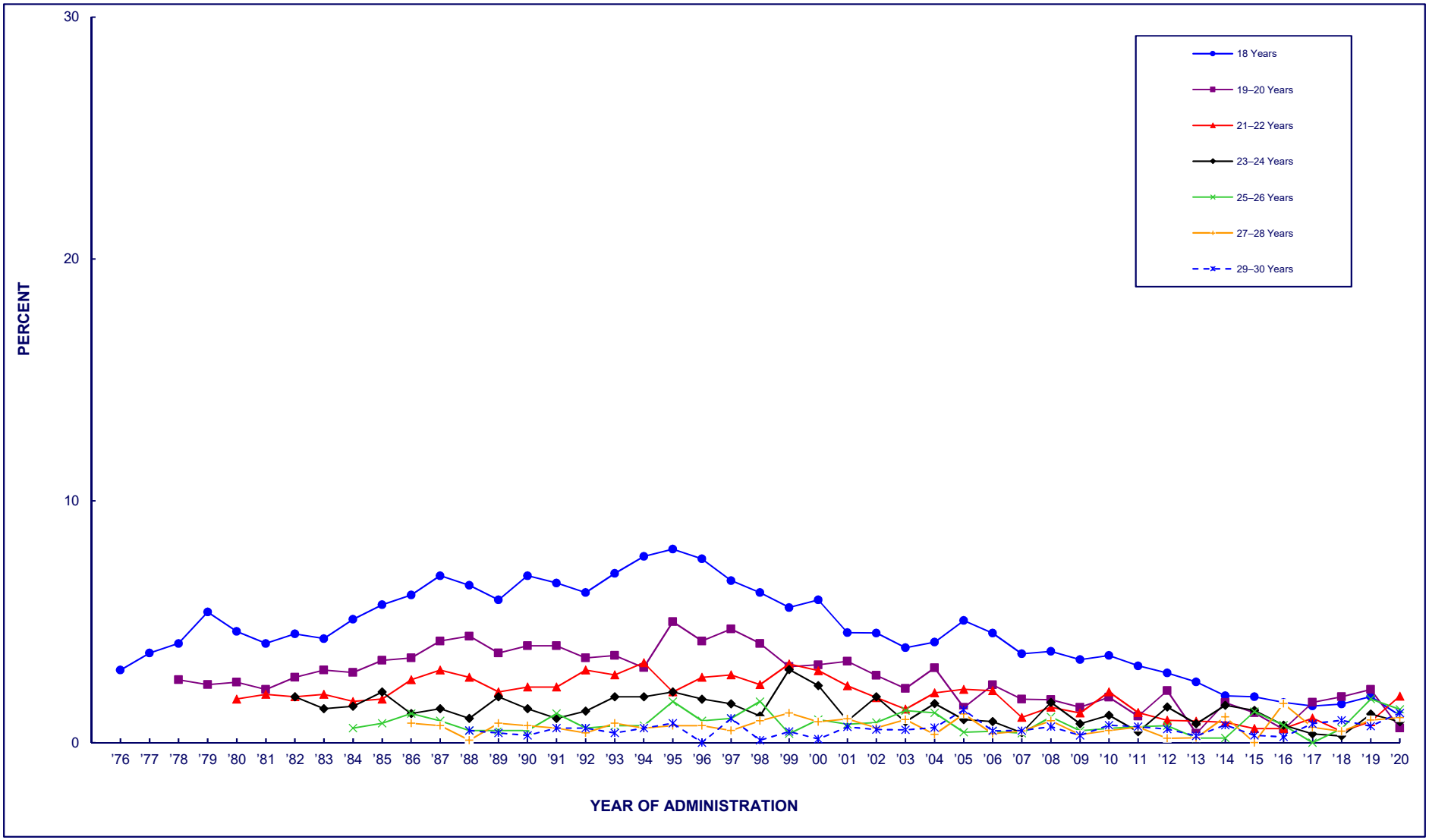
FIGURE 5-3c (cont.)
MARIJUANA
Trends in 30-Day Prevalence of Daily Use among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	8.2												
1977	9.1												
1978	10.7	10.5											
1979	10.3	10.9											
1980	9.1	8.1	10.9										
1981	7.0	7.9	9.4										
1982	6.3	6.6	6.4	8.1									
1983	5.5	5.2	6.2	6.7									
1984	5.0	4.7	5.3	5.5	6.0								
1985	4.9	4.6	4.5	5.8	6.1								
1986	4.0	3.5	4.1	4.9	3.6	4.8							
1987	3.3	3.4	3.9	4.3	5.0	4.6							
1988	2.7	3.5	3.5	3.1	3.4	3.0	3.2						
1989	2.9	2.8	3.1	3.0	3.3	4.1	3.2						
1990	2.2	2.3	2.5	2.7	2.7	2.4	2.2						
1991	2.0	2.1	2.4	2.1	2.5	2.6	2.6						
1992	1.9	1.4	2.6	2.3	2.6	2.5	2.9						
1993	2.4	2.3	2.3	2.7	2.5	2.3	2.7						
1994	3.5	3.1	2.9	3.1	2.7	2.2	2.4	2.3					
1995	4.6	4.7	3.4	3.3	2.3	2.5	2.5	2.6					
1996	4.9	4.9	3.2	2.3	3.1	2.5	2.2	2.3					
1997	5.8	5.4	5.3	2.6	2.5	2.7	2.3	3.5					
1998	5.6	5.2	5.2	3.1	2.4	2.3	2.4	2.7	3.2				
1999	6.0	6.2	4.6	5.1	3.1	2.8	2.5	1.9	2.1				
2000	6.0	6.0	5.5	3.8	3.4	2.0	2.2	2.7	2.6				
2001	5.8	6.1	7.0	4.7	4.6	2.3	2.6	2.3	1.8				
2002	6.0	6.0	6.0	5.5	2.7	2.5	2.3	3.0	3.0				
2003	6.0	6.5	6.0	6.6	3.5	4.0	1.9	2.1	2.4	2.6			
2004	5.6	6.0	5.1	5.3	5.5	2.9	2.0	2.5	1.8	2.0			
2005	5.0	6.4	4.6	4.5	5.9	3.0	3.9	2.1	1.9	2.1			
2006	5.0	5.2	5.3	5.3	5.0	4.3	2.5	2.8	2.3	1.4			
2007	5.1	5.1	4.9	5.2	4.1	5.7	3.2	1.9	2.3	2.7			
2008	5.4	4.1	6.1	5.4	5.5	4.3	4.8	2.2	2.2	2.7	2.0		
2009	5.2	5.8	6.3	5.8	5.1	3.7	5.4	1.7	2.1	2.2	2.0		
2010	6.1	6.0	5.1	5.8	4.0	5.3	4.0	3.8	2.3	2.2	2.2		
2011	6.6	6.6	6.3	6.9	5.8	4.6	3.7	2.7	2.7	2.7	2.3		
2012	6.5	6.2	6.1	5.7	5.1	5.1	4.5	3.6	2.6	2.2	2.7		
2013	6.5	6.2	7.8	6.2	5.8	5.1	2.9	3.3	2.3	2.4	2.1	2.7	
2014	5.8	7.9	7.7	6.8	6.1	6.1	5.7	5.1	1.4	2.6	2.5	2.4	
2015	6.0	7.9	6.3	7.0	7.0	5.5	4.7	5.3	4.1	2.5	2.9	2.8	
2016	6.0	7.0	8.8	9.6	6.6	6.2	6.7	3.7	3.4	2.8	2.2	2.7	
2017	5.9	6.2	9.0	9.2	8.0	6.6	6.9	5.1	4.5	2.7	2.6	3.2	
2018	5.8	7.1	8.6	7.5	8.3	8.4	8.0	5.2	3.5	3.4	3.8	4.4	2.0
2019	6.4	7.6	10.8	9.6	9.7	9.6	8.3	6.4	2.4	3.0	3.3	2.9	2.5
2020	6.9	7.7	11.9	10.8	9.9	11.0	7.5	7.1	5.2	3.8	3.3	4.5	2.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-4
INHALANTS [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 30, [2] by Age Group



(Figure continued on next page.)

FIGURE 5-4 (cont.)
INHALANTS [1]
Trends in Annual Prevalence among Respondents of Modal Ages 18 through 30, [2] by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30
1976	3.0						
1977	3.7						
1978	4.1	2.6					
1979	5.4	2.4					
1980	4.6	2.5	1.8				
1981	4.1	2.2	2.0				
1982	4.5	2.7	1.9	1.9			
1983	4.3	3.0	2.0	1.4			
1984	5.1	2.9	1.7	1.5	0.6		
1985	5.7	3.4	1.8	2.1	0.8		
1986	6.1	3.5	2.6	1.2	1.2	0.8	
1987	6.9	4.2	3.0	1.4	0.9	0.7	
1988	6.5	4.4	2.7	1.0	0.5	0.1	0.5
1989	5.9	3.7	2.1	1.9	0.5	0.8	0.4
1990	6.9	4.0	2.3	1.4	0.5	0.7	0.3
1991	6.6	4.0	2.3	1.0	1.2	0.6	0.6
1992	6.2	3.5	3.0	1.3	0.6	0.4	0.6
1993	7.0	3.6	2.8	1.9	0.7	0.8	0.4
1994	7.7	3.1	3.3	1.9	0.7	0.6	0.6
1995	8.0	5.0	2.1	2.1	1.7	0.7	0.8
1996	7.6	4.2	2.7	1.8	0.9	0.7	*
1997	6.7	4.7	2.8	1.6	1.0	0.5	1.0
1998	6.2	4.1	2.4	1.1	1.7	0.9	0.1
1999	5.6	3.1	3.3	3.0	0.4	1.2	0.5
2000	5.9	3.2	3.0	2.4	1.0	0.9	0.1
2001	4.5	3.4	2.4	0.9	0.8	1.0	0.7
2002	4.5	2.8	1.9	1.9	0.8	0.6	0.5
2003	3.9	2.2	1.4	0.9	1.3	1.0	0.5
2004	4.2	3.1	2.1	1.6	1.2	0.3	0.6
2005	5.0	1.5	2.2	1.0	0.4	1.2	1.4
2006	4.5	2.4	2.1	0.9	0.5	0.4	0.5
2007	3.7	1.8	1.0	0.4	0.4	0.5	0.5
2008	3.8	1.8	1.5	1.7	1.1	0.9	0.7
2009	3.4	1.5	1.2	0.8	0.5	0.3	0.3
2010	3.6	1.9	2.1	1.1	0.6	0.5	0.7
2011	3.2	1.1	1.2	0.5	0.7	0.6	0.7
2012	2.9	2.1	0.9	1.5	0.7	0.2	0.6
2013	2.5	0.4	0.9	0.8	0.2	0.2	0.3
2014	1.9	1.7	0.8	1.5	0.2	1.1	0.7
2015	1.9	1.7	0.8	1.5	0.2	1.1	0.7
2016	1.7	0.6	0.6	0.7	0.7	1.6	0.2
2017	1.5	1.7	1.0	0.4	*	0.6	0.8
2018	1.6	1.9	0.5	0.3	0.6	0.5	0.9
2019	1.9	2.2	0.9	1.2	1.8	0.9	0.7
2020	1.1	0.6	1.9	0.9	1.4	1.0	1.2

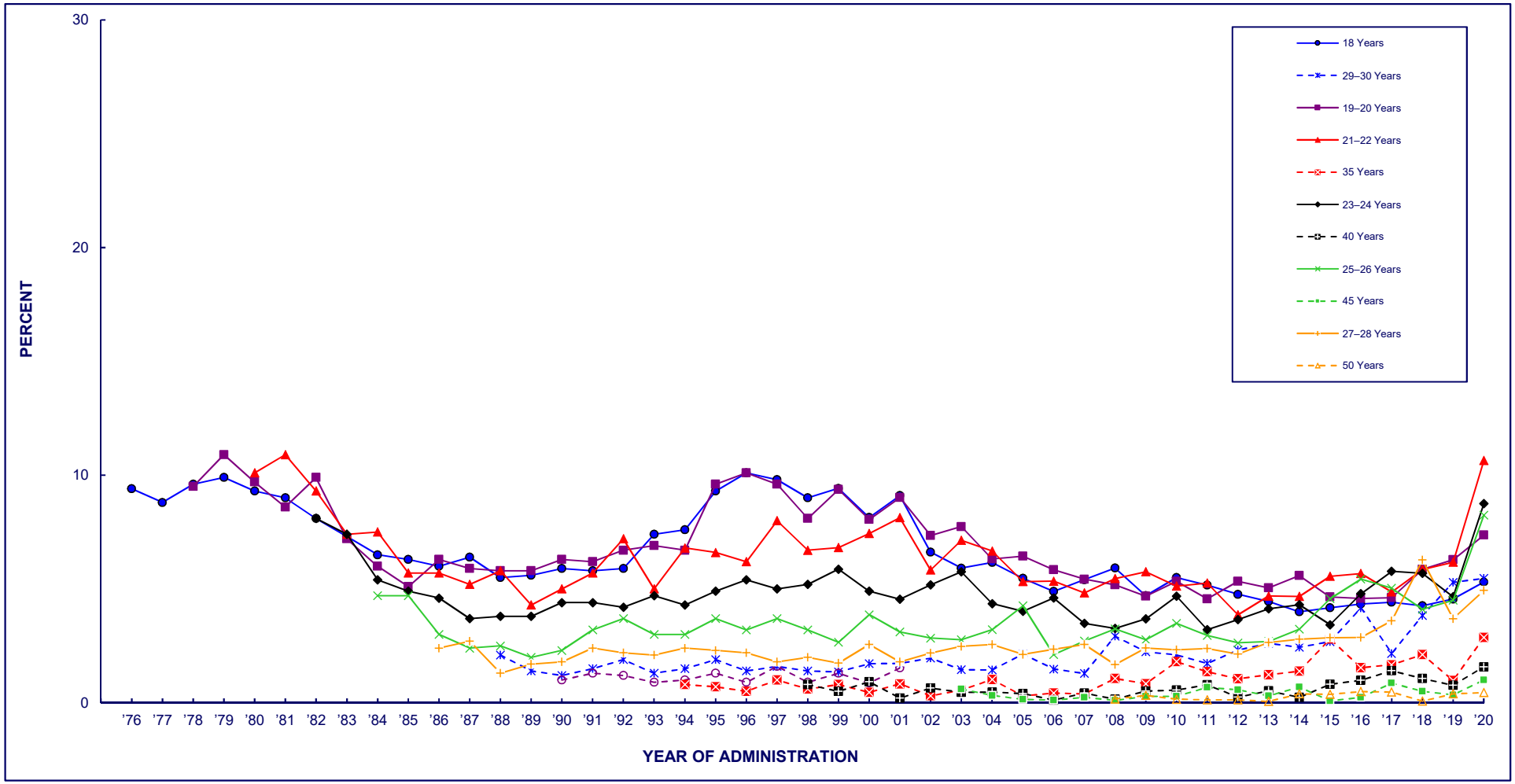
Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a percentage of less than 0.05%. ' — ' indicates data not available.

[1]Unadjusted for the possible underreporting of amyl and butyl nitrites. Chapter 5,*Volume I*, shows that such an adjustment would flatten the trend for seniors considerably because the line was adjusted up more in the earlier years, when nitrite use was more prevalent. Questions about nitrite use were dropped from the follow-up questionnaires beginning in 1995.

[2]Questions about the use of inhalants were not included in the questionnaires for those ages 35+.

FIGURE 5-5
HALLUCINOGENS [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 50, [2] by Age Group



(Figure continued on next page.)

FIGURE 5-5 (cont.)
HALLUCINOGENS [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 50, [2] by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50
1976	9.4										
1977	8.8										
1978	9.6	9.5									
1979	9.9	10.9									
1980	9.3	9.7	10.1								
1981	9.0	8.6	10.9								
1982	8.1	9.9	9.3	8.1							
1983	7.3	7.2	7.4	7.4							
1984	6.5	6.0	7.5	5.4	4.7						
1985	6.3	5.1	5.7	4.9	4.7						
1986	6.0	6.3	5.7	4.6	3.0	2.4					
1987	6.4	5.9	5.2	3.7	2.4	2.7					
1988	5.5	5.8	5.8	3.8	2.5	1.3	2.1				
1989	5.6	5.8	4.3	3.8	2.0	1.7	1.4				
1990	5.9	6.3	5.0	4.4	2.3	1.8	1.2				
1991	5.8	6.2	5.7	4.4	3.2	2.4	1.5				
1992	5.9	6.7	7.2	4.2	3.7	2.2	1.9				
1993	7.4	6.9	5.0	4.7	3.0	2.1	1.3				
1994	7.6	6.7	6.8	4.3	3.0	2.4	1.5	0.8			
1995	9.3	9.6	6.6	4.9	3.7	2.3	1.9	0.7			
1996	10.1	10.1	6.2	5.4	3.2	2.2	1.4	0.5			
1997	9.8	9.6	8.0	5.0	3.7	1.8	1.6	1.0			
1998	9.0	8.1	6.7	5.2	3.2	2.0	1.4	0.6	0.8		
1999	9.4	9.4	6.8	5.9	2.7	1.7	1.4	0.8	0.5		
2000	8.1	8.0	7.4	4.9	3.9	2.6	1.7	0.5	0.9		
2001	9.1	9.0	8.1	4.6	3.1	1.8	1.7	0.8	0.2		
2002	6.6	7.3	5.8	5.2	2.8	2.2	2.0	0.3	0.7		
2003	5.9	7.7	7.1	5.8	2.8	2.5	1.5	0.6	0.5	0.6	
2004	6.2	6.3	6.7	4.4	3.2	2.6	1.4	1.0	0.5	0.3	
2005	5.5	6.4	5.3	4.0	4.3	2.1	2.1	0.3	0.4	0.1	
2006	4.9	5.8	5.3	4.6	2.1	2.4	1.5	0.4	0.1	0.1	
2007	5.4	5.4	4.8	3.5	2.7	2.6	1.3	0.4	0.4	0.2	
2008	5.9	5.2	5.5	3.3	3.2	1.7	2.9	1.1	0.2	0.1	0.2
2009	4.7	4.7	5.8	3.7	2.8	2.4	2.2	0.8	0.5	0.3	0.3
2010	5.5	5.3	5.1	4.7	3.5	2.3	2.1	1.8	0.6	0.3	0.2
2011	5.2	4.6	5.3	3.2	3.0	2.4	1.7	1.4	0.8	0.7	0.1
2012	4.8	5.3	3.9	3.7	2.6	2.1	2.3	1.1	0.2	0.6	0.1
2013	4.5	5.0	4.7	4.1	2.7	2.7	2.6	1.2	0.5	0.3	0.1
2014	4.0	5.6	4.7	4.3	3.2	2.8	2.4	1.4	0.2	0.7	0.4
2015	4.2	4.6	5.6	3.4	4.6	2.9	2.7	2.8	0.8	0.1	0.4
2016	4.3	4.6	5.7	4.8	5.4	2.9	4.2	1.5	1.0	0.2	0.5
2017	4.4	4.6	4.9	5.8	5.0	3.6	2.2	1.7	1.4	0.9	0.5
2018	4.3	5.9	5.9	5.7	4.1	6.3	3.8	2.1	1.1	0.5	0.1
2019	4.6	6.3	6.2	4.7	4.5	3.7	5.3	1.0	0.8	0.3	0.4
2020	5.3	7.4	10.6	8.8	8.2	4.9	5.5	2.9	1.6	1.0	0.5

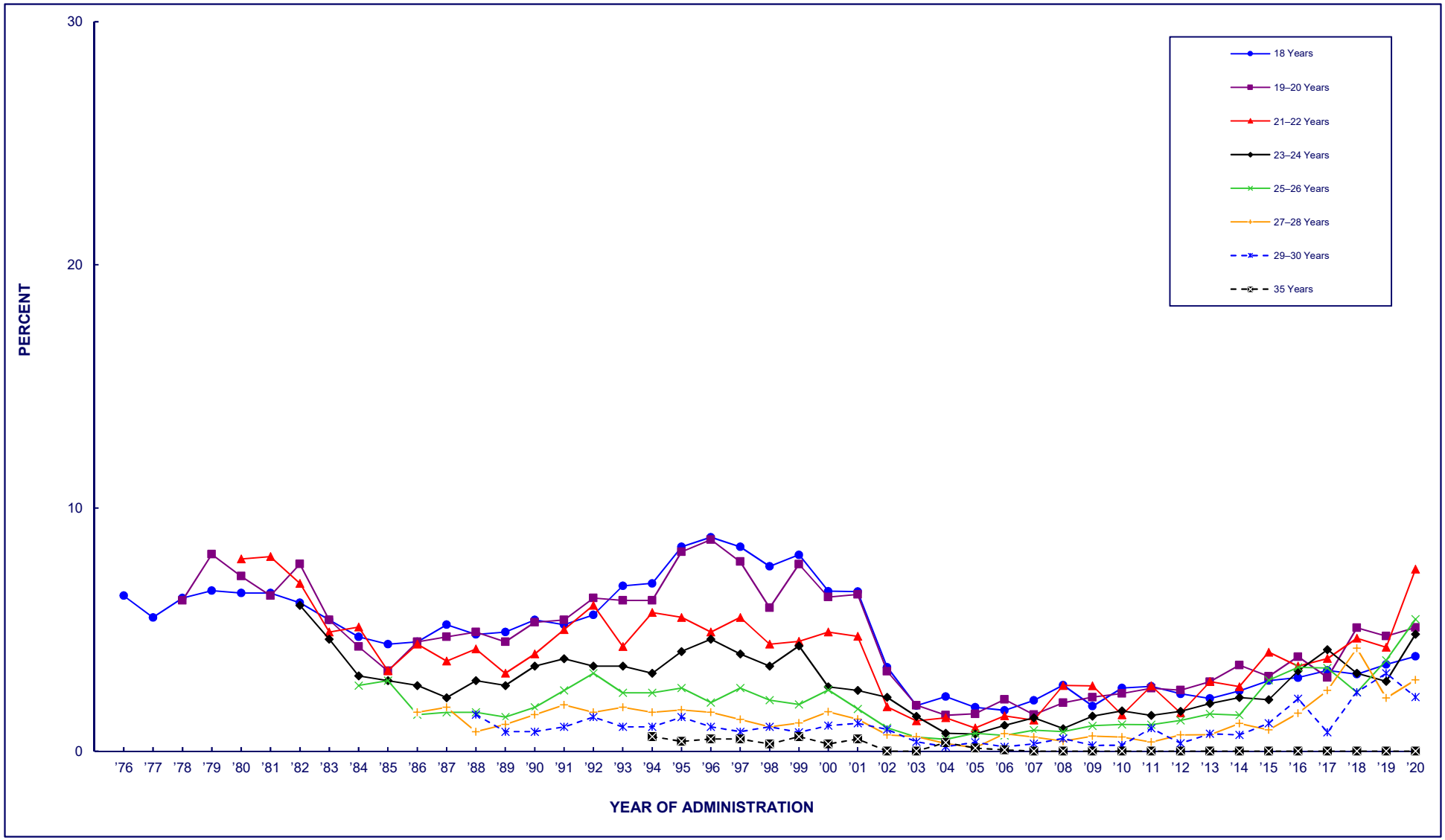
Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1] Unadjusted for the possible underreporting of PCP.

[2] Questions about the use of hallucinogens were not included in the questionnaires for 55- and 60-year-olds.

FIGURE 5-6
LSD
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 35,[1] by Age Group



(Figure continued on next page.)

FIGURE 5-6 (cont.)
LSD
Trends in Annual Prevalence among Respondents of Modal Ages 18 through 35, by Age Group

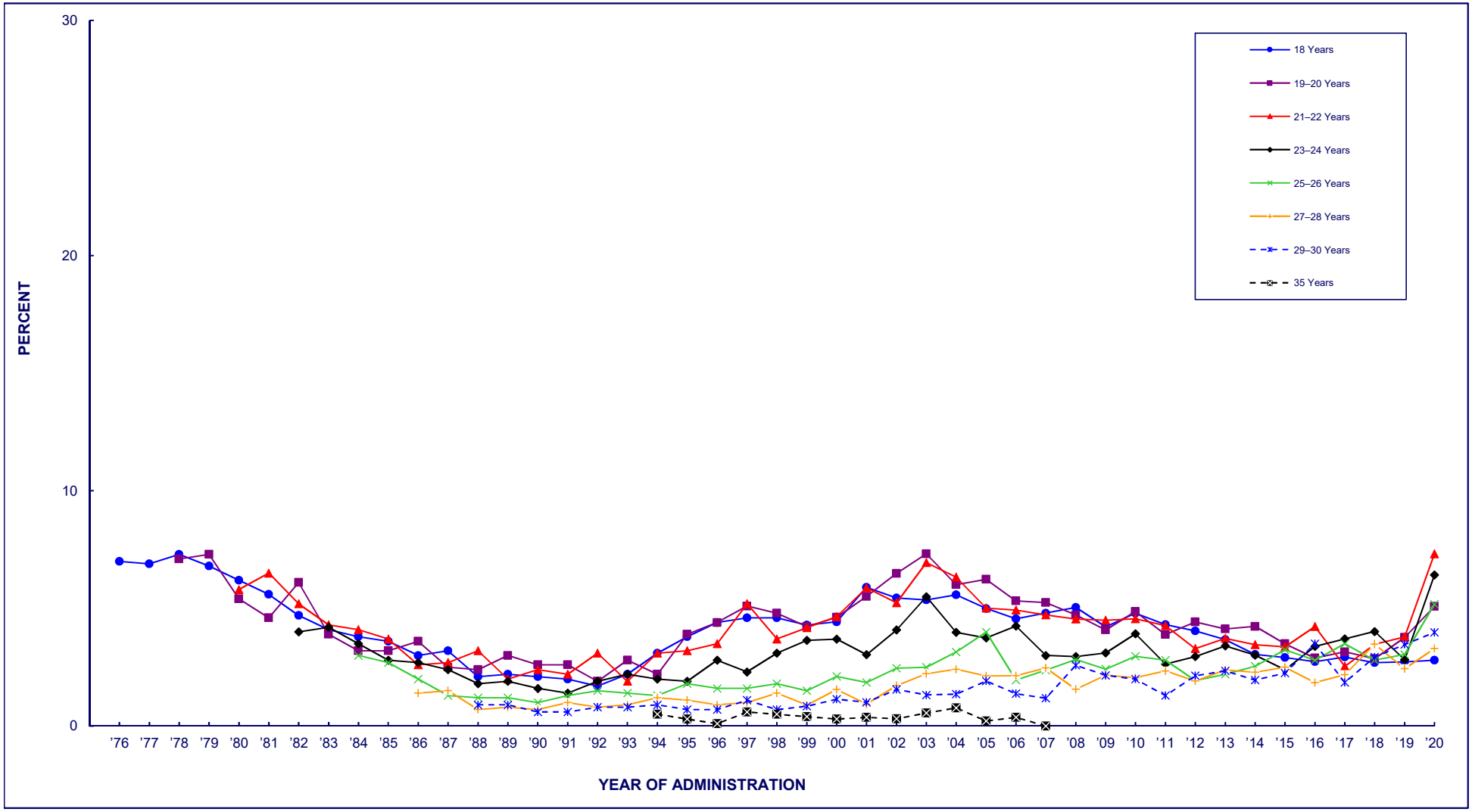
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35 [1]
1976	6.4							
1977	5.5							
1978	6.3	6.2						
1979	6.6	8.1						
1980	6.5	7.2	7.9					
1981	6.5	6.4	8.0					
1982	6.1	7.7	6.9	6.0				
1983	5.4	5.4	4.9	4.6				
1984	4.7	4.3	5.1	3.1	2.7			
1985	4.4	3.3	3.3	2.9	2.9			
1986	4.5	4.5	4.4	2.7	1.5	1.6		
1987	5.2	4.7	3.7	2.2	1.6	1.8		
1988	4.8	4.9	4.2	2.9	1.6	0.8	1.5	
1989	4.9	4.5	3.2	2.7	1.4	1.1	0.8	
1990	5.4	5.3	4.0	3.5	1.8	1.5	0.8	
1991	5.2	5.4	5.0	3.8	2.5	1.9	1.0	
1992	5.6	6.3	6.0	3.5	3.2	1.6	1.4	
1993	6.8	6.2	4.3	3.5	2.4	1.8	1.0	
1994	6.9	6.2	5.7	3.2	2.4	1.6	1.0	0.6
1995	8.4	8.2	5.5	4.1	2.6	1.7	1.4	0.4
1996	8.8	8.7	4.9	4.6	2.0	1.6	1.0	0.5
1997	8.4	7.8	5.5	4.0	2.6	1.3	0.8	0.5
1998	7.6	5.9	4.4	3.5	2.1	1.0	1.0	0.3
1999	8.1	7.7	4.5	4.3	1.9	1.2	0.8	0.6
2000	6.6	6.3	4.9	2.6	2.5	1.6	1.0	0.3
2001	6.6	6.4	4.7	2.5	1.7	1.3	1.1	0.5
2002	3.5	3.3	1.8	2.2	1.0	0.7	0.9	*
2003	1.9	1.9	1.2	1.4	0.6	0.6	0.4	*
2004	2.2	1.5	1.4	0.7	0.5	0.3	0.2	0.4
2005	1.8	1.5	1.0	0.7	0.7	0.1	0.4	0.1
2006	1.7	2.1	1.4	1.1	0.6	0.7	0.2	0.1
2007	2.1	1.5	1.3	1.4	0.9	0.6	0.3	—
2008	2.7	2.0	2.7	0.9	0.8	0.4	0.5	—
2009	1.9	2.2	2.7	1.4	1.0	0.6	0.2	—
2010	2.6	2.4	1.5	1.7	1.1	0.6	0.2	—
2011	2.7	2.6	2.7	1.5	1.1	0.4	0.9	—
2012	2.4	2.5	1.6	1.6	1.3	0.7	0.3	—
2013	2.2	2.9	2.9	2.0	1.5	0.7	0.7	—
2014	2.5	3.5	2.7	2.2	1.5	1.1	0.7	—
2015	2.9	3.1	4.1	2.1	2.9	0.9	1.1	—
2016	3.0	3.9	3.5	3.3	3.5	1.6	2.2	—
2017	3.3	3.0	3.8	4.2	3.4	2.5	0.8	—
2018	3.2	5.1	4.6	3.2	2.4	4.2	2.4	—
2019	3.6	4.7	4.3	2.9	3.7	2.2	3.2	—
2020	3.9	5.1	7.5	4.8	5.4	2.9	2.2	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a percentage of less than 0.05%. ' — ' indicates data not available.

[1]Questions about LSD use were not included in the questionnaires administered to the 40-, 45-, 50-, 55-, and 60-year-olds, or the 35-year-olds after 2006.

FIGURE 5-7
HALLUCINOGENS OTHER THAN LSD [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 35, by Age Group



(Figure continued on next page.)

FIGURE 5-7 (cont.)
HALLUCINOGENS OTHER THAN LSD [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 35, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35 [2]
1976	7.0							
1977	6.9							
1978	7.3	7.1						
1979	6.8	7.3						
1980	6.2	5.4	5.8					
1981	5.6	4.6	6.5					
1982	4.7	6.1	5.2	4.0				
1983	4.1	3.9	4.3	4.2				
1984	3.8	3.2	4.1	3.5	3.0			
1985	3.6	3.2	3.7	2.8	2.7			
1986	3.0	3.6	2.6	2.7	2.0	1.4		
1987	3.2	2.5	2.7	2.4	1.3	1.5		
1988	2.1	2.4	3.2	1.8	1.2	0.7	0.9	
1989	2.2	3.0	2.0	1.9	1.2	0.8	0.9	
1990	2.1	2.6	2.4	1.6	1.0	0.7	0.6	
1991	2.0	2.6	2.2	1.4	1.3	1.0	0.6	
1992	1.7	1.9	3.1	1.9	1.5	0.8	0.8	
1993	2.2	2.8	1.9	2.2	1.4	0.9	0.8	
1994	3.1	2.2	3.1	2.0	1.3	1.2	0.9	0.5
1995	3.8	3.9	3.2	1.9	1.8	1.1	0.7	0.3
1996	4.4	4.4	3.5	2.8	1.6	0.9	0.7	0.1
1997	4.6	5.1	5.2	2.3	1.6	1.0	1.1	0.6
1998	4.6	4.8	3.7	3.1	1.8	1.4	0.7	0.5
1999	4.3	4.2	4.2	3.6	1.5	0.9	0.8	0.4
2000	4.4	4.6	4.7	3.7	2.1	1.6	1.1	0.3
2001	5.9	5.5	5.9	3.0	1.9	0.9	1.0	0.4
2002	5.4	6.5	5.2	4.1	2.5	1.7	1.6	0.3
2003	5.4	7.3	6.9	5.5	2.5	2.2	1.3	0.6
2004	5.6	6.0	6.3	4.0	3.1	2.4	1.4	0.8
2005	5.0	6.2	5.0	3.7	4.0	2.1	1.9	0.2
2006	4.6	5.3	4.9	4.2	2.0	2.1	1.4	0.4
2007	4.8	5.2	4.7	3.0	2.4	2.5	1.2	—
2008	5.0	4.7	4.5	3.0	2.8	1.6	2.6	—
2009	4.2	4.1	4.5	3.1	2.4	2.2	2.2	—
2010	4.8	4.9	4.6	3.9	3.0	2.1	2.0	—
2011	4.3	3.9	4.3	2.6	2.8	2.3	1.3	—
2012	4.0	4.4	3.3	3.0	1.9	1.9	2.1	—
2013	3.7	4.1	3.7	3.4	2.2	2.4	2.3	—
2014	3.0	4.2	3.5	3.0	2.5	2.3	2.0	—
2015	2.9	3.5	3.4	2.4	3.2	2.5	2.3	—
2016	2.7	2.9	4.2	3.4	2.8	1.8	3.5	—
2017	2.9	3.2	2.5	3.7	3.5	2.2	1.9	—
2018	2.7	2.9	3.5	4.0	2.8	3.5	2.9	—
2019	2.7	3.8	3.8	2.8	3.0	2.4	3.5	—
2020	2.8	5.1	7.3	6.4	5.2	3.3	4.0	—

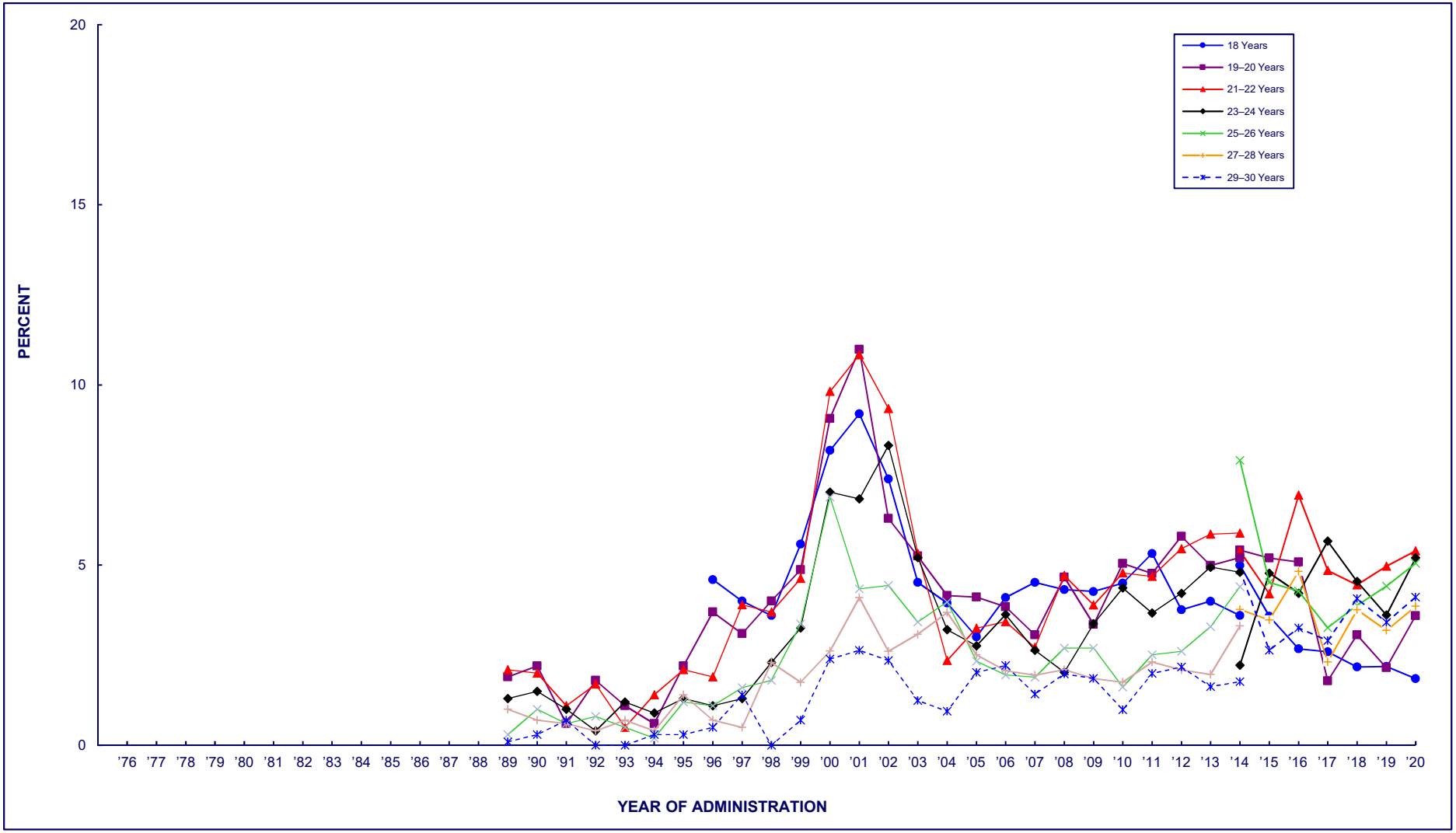
Source. The Monitoring the Future study, the University of Michigan.

Notes. '— ' indicates data not available.

[1]Unadjusted for the possible underreporting of PCP.

[2]Questions about the use of hallucinogens other than LSD were not included in the questionnaires administered to the 40-, 45-, 50-, 55-, and 60-year-olds, or the 35-year-olds after 2006.

FIGURE 5-8
MDMA (Ecstasy, Molly)
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 30, [1] by Age Group



(Figure continued on next page.)

FIGURE 5-8 (cont.)
MDMA (Ecstasy, Molly)
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 30, [1,2]
by Age Group

	Age 18		Ages 19–20		Ages 21–22		Ages 23–24		Ages 25–26		Ages 27–28		Ages 29–30	
Year	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised
1976														
1977														
1978														
1979														
1980														
1981														
1982														
1983														
1984														
1985														
1986														
1987														
1988														
1989			1.9		2.1		1.3		0.3		1.0		0.1	
1990			2.2		2.0		1.5		1.0		0.7		0.3	
1991			0.6		1.1		1.0		0.6		0.6		0.7	
1992			1.8		1.7		0.4		0.8		0.4		*	
1993			1.1		0.5		1.2		0.5		0.7		*	
1994			0.6		1.4		0.9		0.2		0.4		0.3	
1995			2.2		2.1		1.3		1.2		1.4		0.3	
1996	4.6		3.7		1.9		1.1		1.1		0.7		0.5	
1997	4.0		3.1		3.9		1.3		1.6		0.5		1.4	
1998	3.6		4.0		3.7		2.3		1.8		2.3		*	
1999	5.6		4.9		4.6		3.3		3.4		1.8		0.7	
2000	8.2		9.1		9.8		7.0		6.9		2.6		2.4	
2001	9.2		11.0		10.8		6.8		4.3		4.1		2.6	
2002	7.4		6.3		9.3		8.3		4.4		2.6		2.4	
2003	4.5		5.3		5.3		5.2		3.4		3.1		1.2	
2004	4.0		4.2		2.4		3.2		4.0		3.7		0.9	
2005	3.0		4.1		3.3		2.8		2.3		2.5		2.0	
2006	4.1		3.8		3.4		3.6		2.0		2.1		2.2	
2007	4.5		3.1		2.7		2.6		1.9		1.9		1.4	
2008	4.3		4.7		4.7		2.0		2.7		2.1		2.0	
2009	4.3		3.4		3.9		3.4		2.7		1.8		1.9	
2010	4.5		5.0		4.8		4.4		1.6		1.8		1.0	
2011	5.3		4.8		4.7		3.7		2.5		2.3		2.0	
2012	3.8		5.8		5.5		4.2		2.6		2.1		2.2	
2013	4.0		5.0		5.9		4.9		3.3		2.0		1.6	
2014	3.6	5.0	5.2	5.4	5.9	5.4	4.8	2.2	4.4	7.9	3.3	3.8	1.8	4.9
2015	—	3.6	—	5.2	—	4.2	—	4.8	—	4.5	—	3.5	—	2.6
2016	—	2.7	—	5.1	—	6.9	—	4.2	—	4.3	—	4.8	—	3.3
2017	—	2.6	—	1.8	—	4.8	—	5.7	—	3.3	—	2.3	—	2.9
2018	—	2.2	—	3.1	—	4.5	—	4.5	—	3.9	—	3.8	—	4.1
2019	—	2.2	—	2.2	—	5.0	—	3.6	—	4.4	—	3.2	—	3.4
2020	—	1.8	—	3.6	—	5.4	—	5.2	—	5.1	—	3.9	—	4.1

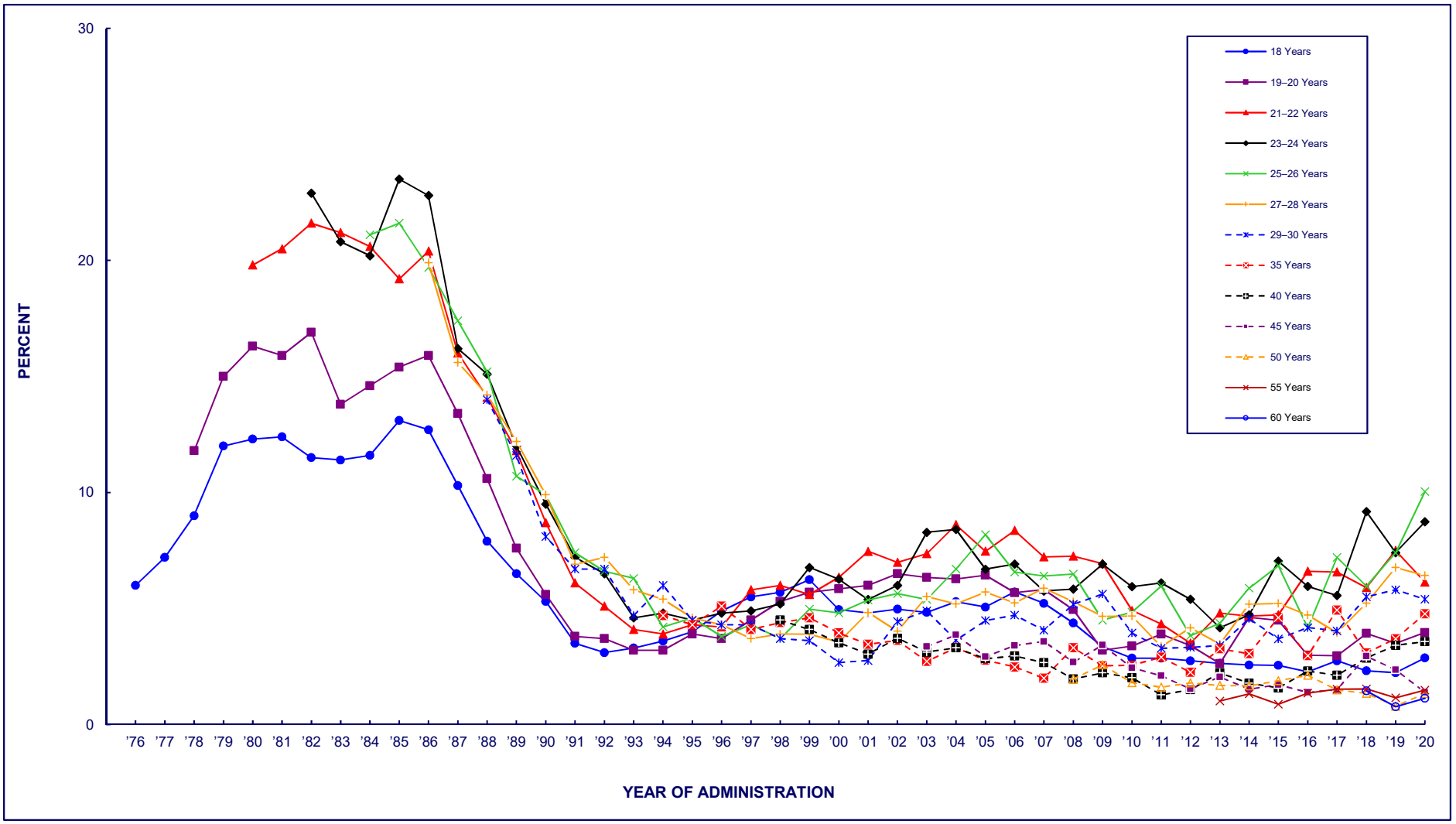
Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a percentage of less than 0.05%. ' — ' indicates data not available.

[1]Questions about use of ecstasy (MDMA, Molly) were not included in the questionnaires administered to those ages 35+.

[2]In 2014, a version of the question was added to an additional form that included "molly" in the description. In 2015 the remaining forms changed to this updated wording. Data for both versions of the question are included here.

FIGURE 5-9
COCAINE
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-9 (cont.)
COCAINE
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

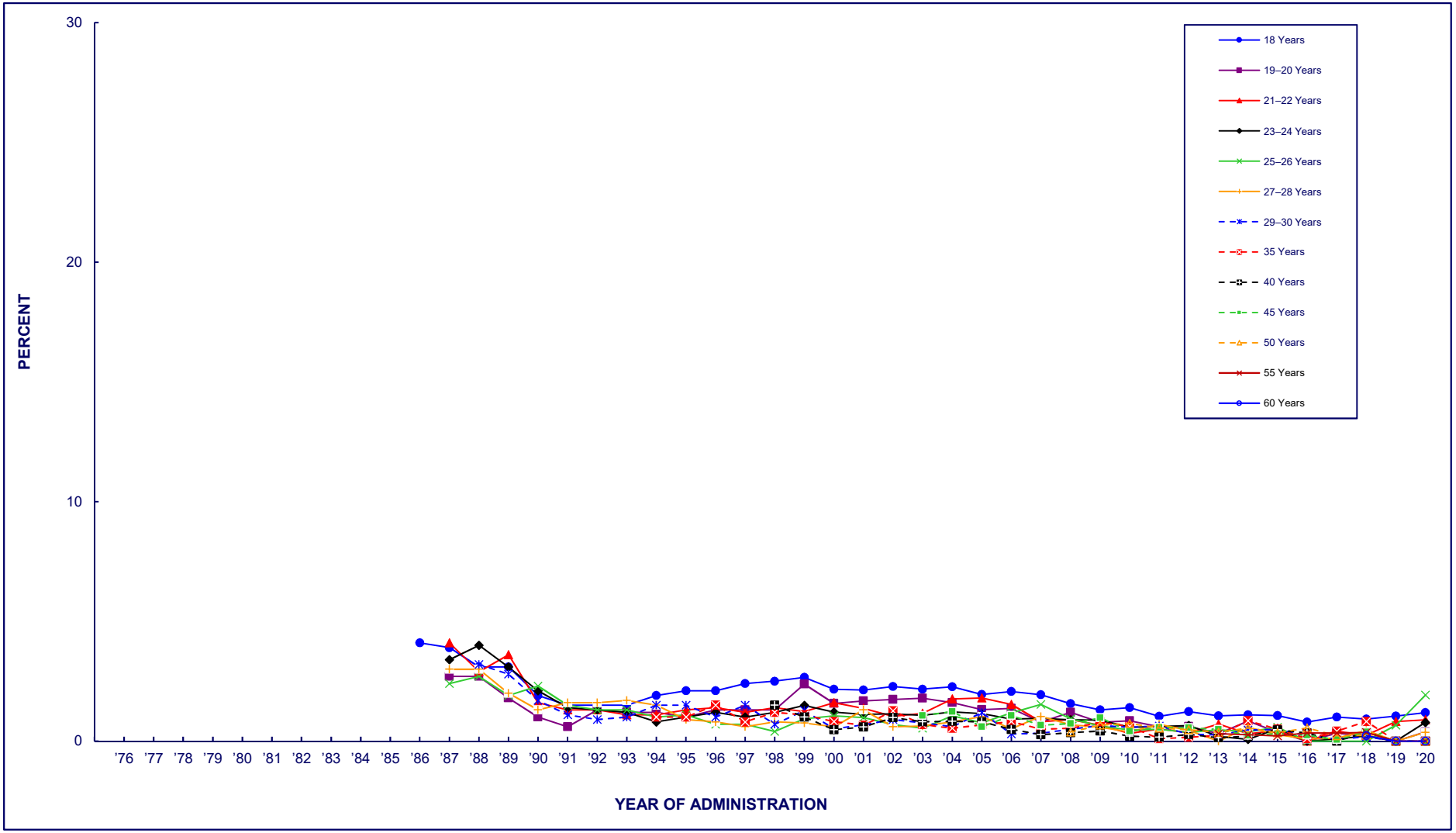
353.0

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	6.0												
1977	7.2												
1978	9.0	11.8											
1979	12.0	15.0											
1980	12.3	16.3	19.8										
1981	12.4	15.9	20.5										
1982	11.5	16.9	21.6	22.9									
1983	11.4	13.8	21.2	20.8									
1984	11.6	14.6	20.6	20.2	21.1								
1985	13.1	15.4	19.2	23.5	21.6								
1986	12.7	15.9	20.4	22.8	19.7	19.9							
1987	10.3	13.4	16.0	16.2	17.4	15.6							
1988	7.9	10.6	14.1	15.1	15.2	14.2	14.0						
1989	6.5	7.6	11.8	12.0	10.7	12.2	11.6						
1990	5.3	5.6	8.7	9.5	9.9	9.9	8.1						
1991	3.5	3.8	6.1	7.2	7.4	6.9	6.7						
1992	3.1	3.7	5.1	6.5	6.6	7.2	6.7						
1993	3.3	3.2	4.1	4.6	6.3	5.8	4.7						
1994	3.6	3.2	3.9	4.8	4.2	5.4	6.0	4.7					
1995	4.0	3.9	4.3	4.5	4.6	4.6	4.5	4.3					
1996	4.9	3.7	4.2	4.8	3.8	4.3	4.3	5.1					
1997	5.5	4.5	5.8	4.9	4.3	3.7	4.3	4.1					
1998	5.7	5.3	6.0	5.2	3.7	3.9	3.7	4.4	4.5				
1999	6.2	5.7	5.6	6.8	5.0	3.9	3.6	4.6	4.1				
2000	5.0	5.8	6.3	6.3	4.8	3.6	2.7	3.9	3.5				
2001	4.8	6.0	7.5	5.4	5.4	4.8	2.8	3.5	3.0				
2002	5.0	6.5	7.0	6.0	5.6	4.0	4.4	3.6	3.7				
2003	4.8	6.3	7.4	8.3	5.4	5.5	4.9	2.7	3.1	3.4			
2004	5.3	6.3	8.6	8.4	6.7	5.2	3.6	3.3	3.3	3.9			
2005	5.1	6.4	7.5	6.7	8.2	5.7	4.5	2.8	2.8	2.9			
2006	5.7	5.7	8.4	6.9	6.6	5.2	4.7	2.5	3.0	3.4			
2007	5.2	5.8	7.2	5.8	6.4	5.9	4.1	2.0	2.7	3.6			
2008	4.4	5.0	7.3	5.8	6.5	5.3	5.2	3.3	2.0	2.7	2.0		
2009	3.4	3.2	6.9	6.9	4.5	4.7	5.6	2.5	2.2	3.4	2.6		
2010	2.9	3.4	4.9	5.9	4.8	4.7	4.0	2.6	2.0	2.4	1.8		
2011	2.9	3.9	4.3	6.1	6.0	3.4	3.3	2.9	1.3	2.1	1.6		
2012	2.7	3.4	3.5	5.4	3.8	4.2	3.3	2.3	1.5	1.5	1.8		
2013	2.6	2.6	4.8	4.2	4.4	3.5	3.4	3.3	2.2	2.0	1.7	1.0	
2014	2.6	4.6	4.7	4.7	5.9	5.2	4.6	3.1	1.8	1.5	1.7	1.3	
2015	2.5	4.5	4.7	7.0	6.9	5.2	3.7	4.6	1.6	1.7	1.9	0.9	
2016	2.3	3.0	6.6	6.0	4.2	4.7	4.2	3.0	2.3	1.4	2.1	1.4	
2017	2.7	3.0	6.6	5.6	7.2	4.0	4.0	4.9	2.1	1.5	1.5	1.5	
2018	2.3	3.9	5.9	9.2	6.0	5.2	5.5	3.1	2.9	2.9	1.3	1.5	1.5
2019	2.2	3.5	7.5	7.4	7.4	6.8	5.8	3.7	3.4	2.4	0.8	1.2	0.8
2020	2.9	4.0	6.1	8.7	10.0	6.4	5.4	4.8	3.6	1.4	1.3	1.5	1.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-10
CRACK COCAINE
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-10 (cont.)
CRACK COCAINE
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60[1], by Age Group

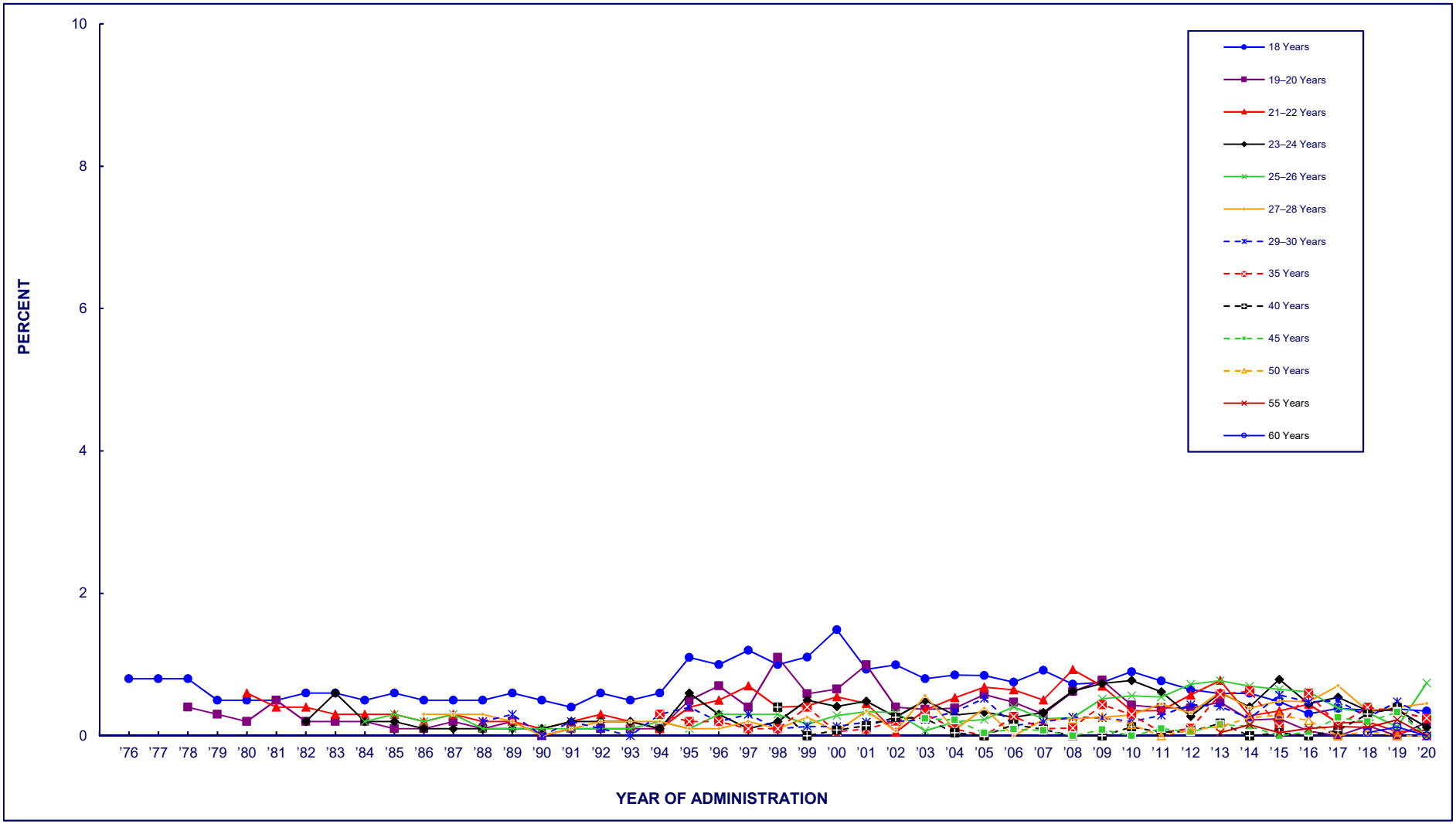
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976													
1977													
1978													
1979													
1980													
1981													
1982													
1983													
1984													
1985													
1986	4.1												
1987	3.9	2.7	4.1	3.4	2.4	3.0							
1988	3.1	2.7	2.9	4.0	2.7	3.0	3.2						
1989	3.1	1.8	3.6	3.1	1.9	2.0	2.8						
1990	1.9	1.0	1.6	2.1	2.3	1.3	1.7						
1991	1.5	0.6	1.3	1.4	1.5	1.6	1.1						
1992	1.5	1.3	1.3	1.3	1.3	1.6	0.9						
1993	1.5	1.2	1.1	1.2	1.3	1.7	1.0						
1994	1.9	1.2	1.1	0.8	1.0	1.5	1.5	1.0					
1995	2.1	1.0	1.3	1.0	1.1	0.9	1.5	1.0					
1996	2.1	1.3	1.4	1.2	0.7	0.8	1.0	1.5					
1997	2.4	1.3	1.2	1.0	0.7	0.6	1.5	0.8					
1998	2.5	1.3	1.4	1.2	0.4	0.8	0.7	1.2	1.5				
1999	2.7	2.4	1.2	1.5	0.9	0.8	1.3	1.1	1.0				
2000	2.2	1.6	1.6	1.2	1.1	0.6	0.5	0.8	0.5				
2001	2.1	1.7	1.4	1.1	1.0	1.3	0.7	0.7	0.6				
2002	2.3	1.7	1.0	1.1	0.7	0.6	0.9	1.3	1.0				
2003	2.2	1.8	1.2	1.1	0.5	0.6	0.8	0.7	0.8	1.1			
2004	2.3	1.6	1.8	1.2	1.1	0.8	0.6	0.5	0.8	1.2			
2005	1.9	1.3	1.8	1.1	0.8	1.0	1.2	0.7	0.8	0.6			
2006	2.1	1.4	1.5	0.9	1.2	0.5	0.3	0.8	0.5	1.1			
2007	1.9	0.8	0.8	1.0	1.5	1.0	0.3	0.5	0.3	0.7			
2008	1.6	1.2	0.9	0.9	0.9	0.7	0.5	0.5	0.4	0.7	0.4		
2009	1.3	0.8	0.7	0.9	0.6	0.6	0.7	0.8	0.4	1.0	0.7		
2010	1.4	0.8	0.3	0.6	0.5	0.4	0.6	0.6	0.2	0.4	0.7		
2011	1.0	0.6	0.5	0.6	0.5	0.7	0.6	0.1	0.2	0.6	0.5		
2012	1.2	0.6	0.3	0.6	0.4	0.4	0.3	0.2	0.3	0.6	0.5		
2013	1.1	0.3	0.7	0.2	0.5	*	0.3	0.2	0.1	0.5	0.4	0.3	
2014	1.1	0.8	0.3	0.1	0.4	0.6	0.5	0.9	0.2	0.2	0.5	0.3	
2015	1.1	0.4	0.4	0.5	0.6	0.3	0.5	0.5	0.5	0.3	0.3	0.2	
2016	0.8	*	*	*	*	0.1	0.2	0.1	0.3	0.2	0.5	0.3	
2017	1.0	0.3	0.4	0.1	*	0.1	0.1	0.4	*	0.1	0.2	0.3	
2018	0.9	0.2	0.2	0.2	*	0.4	0.2	0.8	0.4	0.4	0.2	0.4	0.2
2019	1.0	*	0.8	*	0.7	*	*	—	—	—	—	—	—
2020	1.2	0.4	0.9	0.8	1.9	0.4	*	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]Questions about the use of crack were not included in the questionnaires administered to those ages 35+ after 2018.

FIGURE 5-11
HEROIN
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

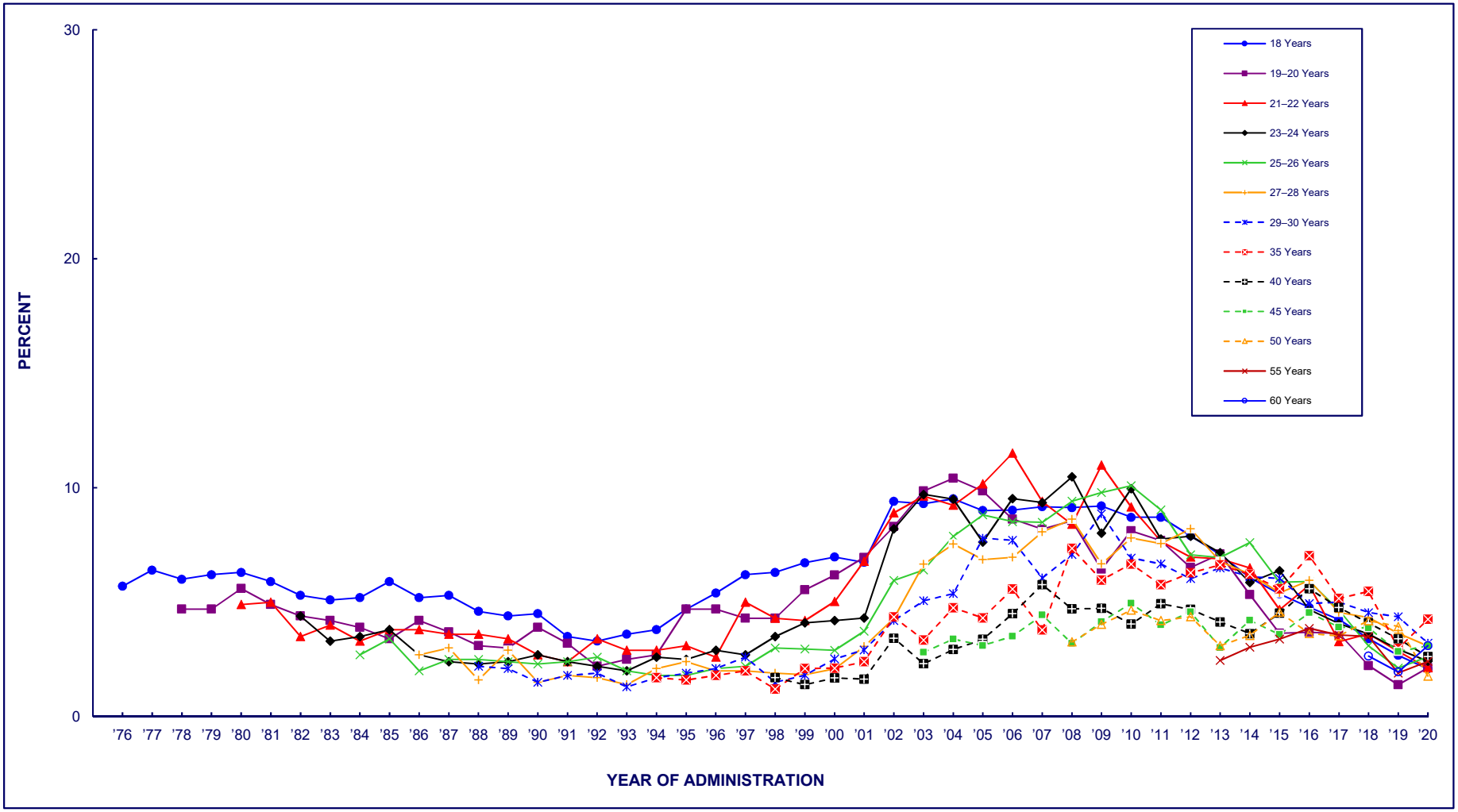
FIGURE 5-11 (cont.)
HEROIN
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	0.8												
1977	0.8												
1978	0.8	0.4											
1979	0.5	0.3											
1980	0.5	0.2	0.6										
1981	0.5	0.5	0.4										
1982	0.6	0.2	0.4	0.2									
1983	0.6	0.2	0.3	0.6									
1984	0.5	0.2	0.3	0.2	0.2								
1985	0.6	0.1	0.3	0.2	0.3								
1986	0.5	0.1	0.2	0.1	0.2	0.3							
1987	0.5	0.2	0.3	0.1	0.3	0.3							
1988	0.5	0.1	0.2	0.1	0.1	0.3	0.2						
1989	0.6	0.2	0.2	0.1	0.1	0.2	0.3						
1990	0.5	*	0.1	0.1	0.1	*	*						
1991	0.4	0.1	0.2	0.2	0.1	0.1	0.2						
1992	0.6	0.1	0.3	0.2	0.1	0.2	0.1						
1993	0.5	0.1	0.2	0.2	0.1	0.2	*						
1994	0.6	0.1	0.1	0.1	0.2	0.2	0.3	0.3					
1995	1.1	0.5	0.4	0.6	0.1	0.1	0.4	0.2					
1996	1.0	0.7	0.5	0.3	0.3	0.1	0.2	0.2					
1997	1.2	0.4	0.7	0.1	0.3	0.2	0.3	0.1					
1998	1.0	1.1	0.4	0.2	0.3	0.1	0.1	0.1	0.4				
1999	1.1	0.6	0.4	0.5	0.2	0.3	0.1	0.4	*				
2000	1.5	0.7	0.5	0.4	0.3	0.1	0.1	0.1	0.1				
2001	0.9	1.0	0.5	0.5	0.3	0.3	0.2	0.1	0.1				
2002	1.0	0.4	0.1	0.3	0.3	0.1	0.2	0.2	0.3				
2003	0.8	0.4	0.4	0.5	0.1	0.6	0.2	0.3	0.2	0.2			
2004	0.9	0.4	0.5	0.3	0.2	0.1	0.3	0.1	*	0.2			
2005	0.8	0.6	0.7	0.3	0.2	0.4	0.5	*	*	*			
2006	0.8	0.5	0.6	0.3	0.4	*	0.1	0.3	0.2	0.1			
2007	0.9	0.3	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1			
2008	0.7	0.6	0.9	0.6	0.3	0.2	0.3	0.1	*	*	0.2		
2009	0.7	0.8	0.7	0.7	0.5	0.3	0.3	0.4	*	0.1	0.3		
2010	0.9	0.4	0.3	0.8	0.6	0.3	0.2	0.3	0.1	*	0.2		
2011	0.8	0.4	0.4	0.6	0.5	0.4	0.3	0.0	0.1	0.1	*		
2012	0.6	0.4	0.6	0.3	0.7	0.3	0.4	0.1	0.1	0.1	0.1		
2013	0.6	0.5	0.8	0.6	0.8	0.6	0.4	0.6	0.2	0.2	0.1	*	
2014	0.6	0.2	0.3	0.4	0.7	0.4	0.2	0.6	*	0.1	0.3	0.2	
2015	0.5	0.2	0.3	0.8	0.7	0.5	0.6	0.1	*	*	0.3	*	
2016	0.3	0.1	0.4	0.5	0.6	0.5	0.5	0.6	*	0.1	0.2	0.1	
2017	0.4	*	0.2	0.5	0.4	0.7	0.5	0.1	0.1	0.3	*	0.1	
2018	0.4	0.1	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.2	0.1	0.1	*
2019	0.4	*	0.1	0.4	0.1	0.4	0.5	0.3	0.4	0.3	*	0.2	0.1
2020	0.3	0.2	0.1	0.1	0.7	0.5	0.3	0.2	*	*	*	*	*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a percentage of less than 0.05%. ' — ' indicates data not availa

FIGURE 5-12
NARCOTICS OTHER THAN HEROIN [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-12 (cont.)
NARCOTICS OTHER THAN HEROIN [1]
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

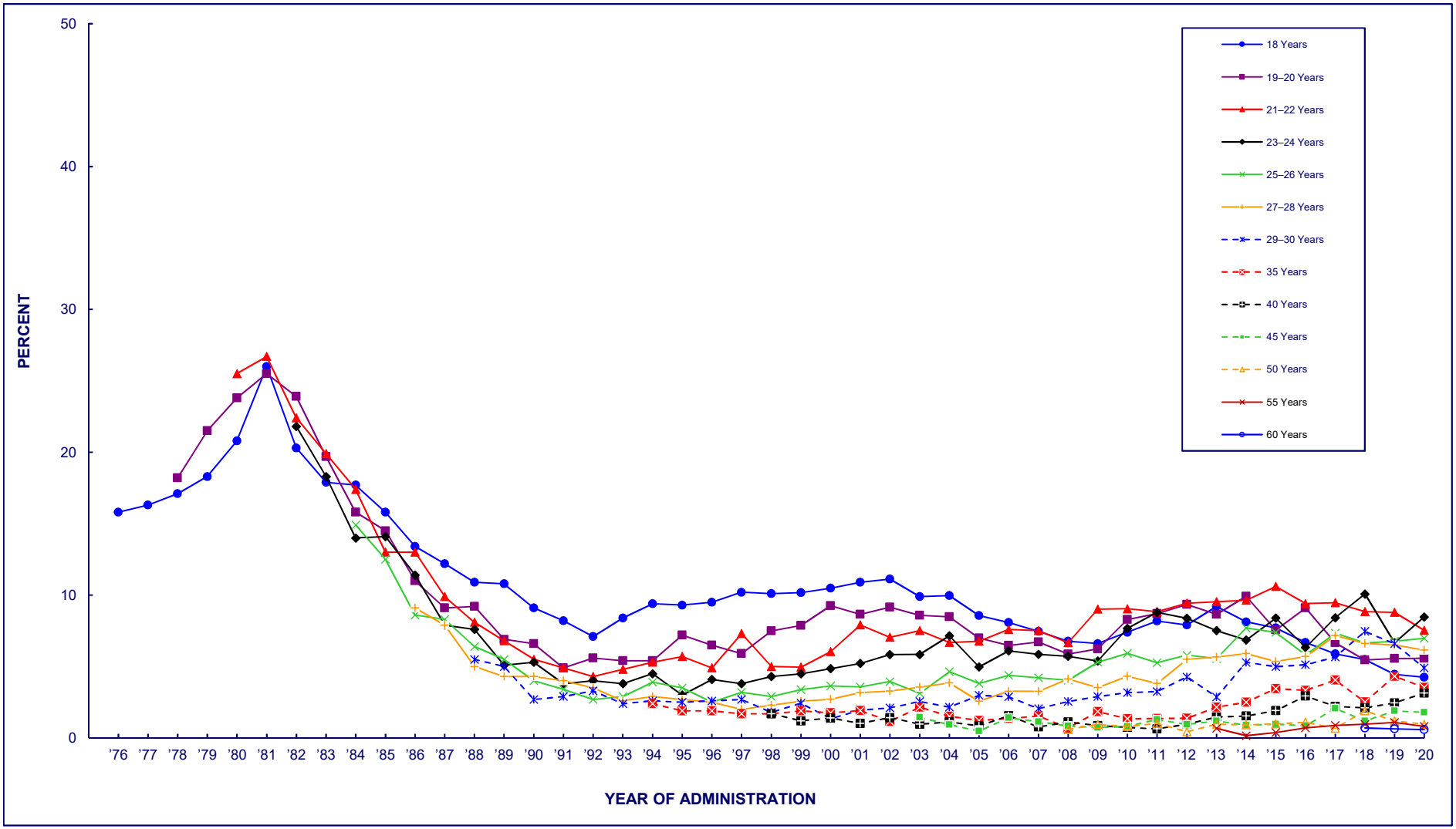
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	5.7												
1977	6.4												
1978	6.0	4.7											
1979	6.2	4.7											
1980	6.3	5.6	4.9										
1981	5.9	4.9	5.0										
1982	5.3	4.4	3.5	4.4									
1983	5.1	4.2	4.0	3.3									
1984	5.2	3.9	3.3	3.5	2.7								
1985	5.9	3.4	3.8	3.8	3.4								
1986	5.2	4.2	3.8	2.7	2.0	2.7							
1987	5.3	3.7	3.6	2.4	2.5	3.0							
1988	4.6	3.1	3.6	2.3	2.5	1.6	2.2						
1989	4.4	3.0	3.4	2.4	2.4	2.9	2.1						
1990	4.5	3.9	2.7	2.7	2.3	1.5	1.5						
1991	3.5	3.2	2.4	2.4	2.4	1.8	1.8						
1992	3.3	2.2	3.4	2.2	2.6	1.7	1.9						
1993	3.6	2.5	2.9	2.0	2.0	1.4	1.3						
1994	3.8	2.7	2.9	2.6	1.8	2.1	1.7	1.7					
1995	4.7	4.7	3.1	2.5	1.8	2.4	1.9	1.6					
1996	5.4	4.7	2.6	2.9	2.1	2.0	2.1	1.8					
1997	6.2	4.3	5.0	2.7	2.2	2.0	2.6	2.0					
1998	6.3	4.3	4.3	3.5	3.0	1.9	1.5	1.2	1.7				
1999	6.7	5.5	4.2	4.1	3.0	1.8	1.8	2.1	1.4				
2000	7.0	6.2	5.0	4.2	2.9	2.1	2.5	2.1	1.7				
2001	6.7	7.0	6.8	4.3	3.7	3.1	2.9	2.4	1.6				
2002	9.4	8.3	8.9	8.2	6.0	4.3	4.2	4.4	3.4				
2003	9.3	9.9	9.6	9.7	6.4	6.7	5.1	3.4	2.3	2.8			
2004	9.5	10.4	9.2	9.5	7.9	7.5	5.4	4.8	2.9	3.4			
2005	9.0	9.9	10.2	7.6	8.8	6.9	7.8	4.3	3.4	3.1			
2006	9.0	8.6	11.5	9.5	8.5	7.0	7.7	5.6	4.5	3.5			
2007	9.2	8.2	9.4	9.4	8.5	8.1	6.1	3.8	5.8	4.4			
2008	9.1	8.6	8.4	10.5	9.4	8.6	7.1	7.4	4.7	3.2	3.3		
2009	9.2	6.4	11.0	8.0	9.8	6.7	8.9	6.0	4.7	4.1	4.0		
2010	8.7	8.1	9.2	10.0	10.1	7.8	6.9	6.7	4.0	5.0	4.7		
2011	8.7	7.7	7.7	7.8	9.0	7.6	6.7	5.8	4.9	4.0	4.2		
2012	7.9	6.5	7.0	7.9	7.1	8.2	6.0	6.3	4.7	4.6	4.4		
2013	7.1	7.1	6.9	7.2	6.9	6.8	6.5	6.6	4.1	3.0	3.1	2.5	
2014	6.1	5.3	6.5	5.9	7.6	6.2	6.1	6.2	3.6	4.2	3.5	3.0	
2015	5.4	3.6	4.7	6.4	5.9	5.4	6.0	5.6	4.5	3.6	4.6	3.4	
2016	4.8	3.7	5.8	4.7	5.9	5.9	4.9	7.0	5.6	4.5	3.6	3.9	
2017	4.2	3.6	3.3	4.1	4.7	4.6	5.0	5.2	4.8	3.9	3.5	3.6	
2018	3.4	2.2	3.6	3.6	3.1	4.3	4.5	5.5	4.1	3.9	4.2	3.5	2.6
2019	2.7	1.4	2.9	2.9	2.1	3.6	4.4	3.0	3.4	2.8	3.9	1.9	2.0
2020	2.1	2.1	2.1	2.4	2.6	3.1	3.2	4.2	2.6	3.1	1.8	2.4	3.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]In 2002 the question text was changed on half of the questionnaire forms for 18- to 30-year-olds. The list of examples of narcotics other than heroin was updated. Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced by Vicodin, OxyContin, and Percocet. The 2001 data presented here are based on all forms. The 2002 data are based on the changed forms only. In 2003 the remaining forms were changed to the new wording. The data are based on all forms in 2003. Beginning in 2002 data were based on the changed question text for 35- and 40-year-olds.

FIGURE 5-13
AMPHETAMINES
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

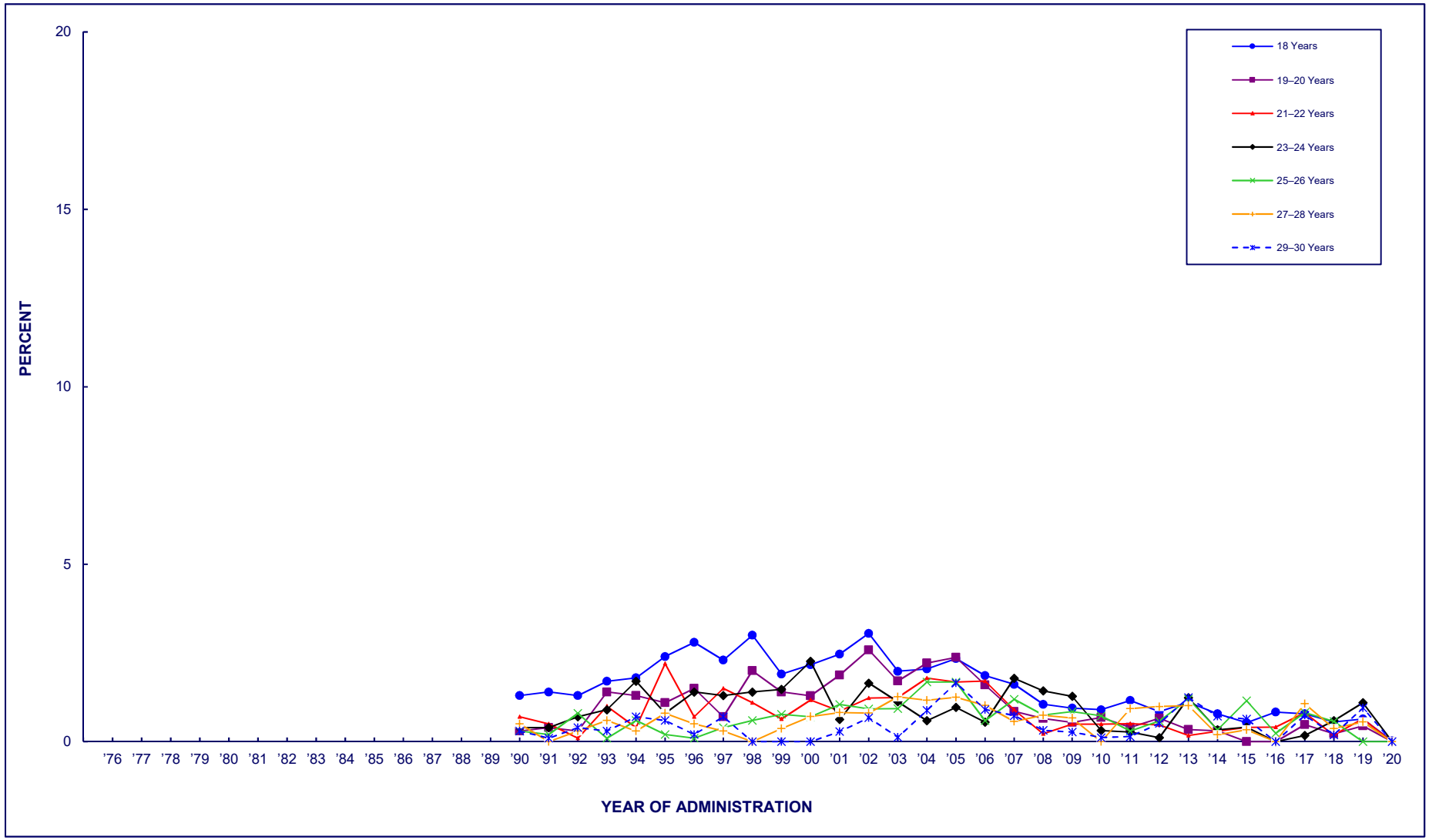
FIGURE 5-13 (cont.)
AMPHETAMINES
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	15.8												
1977	16.3												
1978	17.1	18.2											
1979	18.3	21.5											
1980	20.8	23.8	25.5										
1981	26.0	25.5	26.7										
1982	20.3	23.9	22.4	21.8									
1983	17.9	19.7	19.9	18.3									
1984	17.7	15.8	17.4	14.0	14.9								
1985	15.8	14.5	13.0	14.1	12.5								
1986	13.4	11.0	13.0	11.4	8.6	9.1							
1987	12.2	9.1	9.9	7.9	8.3	7.9							
1988	10.9	9.2	8.1	7.6	6.4	5.0	5.5						
1989	10.8	6.9	6.8	5.1	5.5	4.3	5.0						
1990	9.1	6.6	5.5	5.3	4.0	4.3	2.7						
1991	8.2	4.9	4.9	3.8	3.4	4.0	2.9						
1992	7.1	5.6	4.3	4.0	2.7	3.5	3.3						
1993	8.4	5.4	4.8	3.8	2.9	2.6	2.4						
1994	9.4	5.4	5.3	4.5	3.9	2.9	2.6	2.4					
1995	9.3	7.2	5.7	3.0	3.5	2.7	2.5	1.9					
1996	9.5	6.5	4.9	4.1	2.5	2.5	2.6	1.9					
1997	10.2	5.9	7.3	3.8	3.2	2.0	2.7	1.7					
1998	10.1	7.5	5.0	4.3	2.9	2.3	1.8	1.7	1.7				
1999	10.2	7.9	5.0	4.5	3.4	2.6	2.4	1.9	1.2				
2000	10.5	9.3	6.0	4.8	3.6	2.7	1.4	1.8	1.4				
2001	10.9	8.7	7.9	5.2	3.6	3.2	1.9	1.9	1.0				
2002	11.1	9.1	7.1	5.8	3.9	3.3	2.1	1.2	1.4				
2003	9.9	8.6	7.5	5.8	3.1	3.6	2.6	2.2	1.0	1.4			
2004	10.0	8.5	6.7	7.1	4.6	3.9	2.2	1.5	1.1	0.9			
2005	8.6	7.0	6.8	5.0	3.8	2.6	3.0	1.2	0.8	0.5			
2006	8.1	6.5	7.6	6.1	4.4	3.3	2.9	1.4	1.6	1.4			
2007	7.5	6.7	7.5	5.9	4.2	3.3	2.1	1.5	0.8	1.1			
2008	6.8	5.9	6.7	5.7	4.0	4.1	2.6	0.7	1.1	0.9	0.6		
2009	6.6	6.2	9.0	5.4	5.3	3.5	2.9	1.9	0.9	0.7	1.0		
2010	7.4	8.3	9.0	7.7	5.9	4.3	3.2	1.3	0.7	0.8	0.8		
2011	8.2	8.7	8.8	8.8	5.3	3.8	3.2	1.4	0.6	1.3	1.0		
2012	7.9	9.3	9.4	8.4	5.8	5.5	4.3	1.4	1.0	1.0	0.4		
2013	9.2	8.6	9.5	7.5	5.6	5.7	2.9	2.2	1.5	1.2	1.0	0.7	
2014	8.1	9.9	9.6	6.9	7.7	5.9	5.3	2.5	1.5	0.9	0.9	0.2	
2015	7.7	7.6	10.6	8.4	7.4	5.4	5.0	3.5	1.9	1.0	1.0	0.4	
2016	6.7	9.1	9.4	6.3	5.8	5.7	5.1	3.3	2.9	0.9	1.1	0.7	
2017	5.9	6.7	9.5	8.4	7.3	7.2	5.7	4.1	2.2	2.1	0.7	0.9	
2018	5.5	5.5	8.8	10.1	6.6	6.6	7.5	2.5	2.1	1.2	1.9	1.0	0.7
2019	4.5	5.6	8.8	6.7	6.8	6.5	6.6	4.3	2.5	1.9	1.2	1.1	0.6
2020	4.3	5.6	7.5	8.5	7.0	6.1	4.9	3.5	3.1	1.8	1.0	0.8	0.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-14
CRYSTAL METHAMPHETAMINE (ICE)
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 30, [1] by Age Group



(Figure continued on next page.)

FIGURE 5-14 (cont.)
CRYSTAL METHAMPHETAMINE (ICE)
Trends in Annual Prevalence among Respondents of Modal Ages 18 through 30, [1] by Age Group

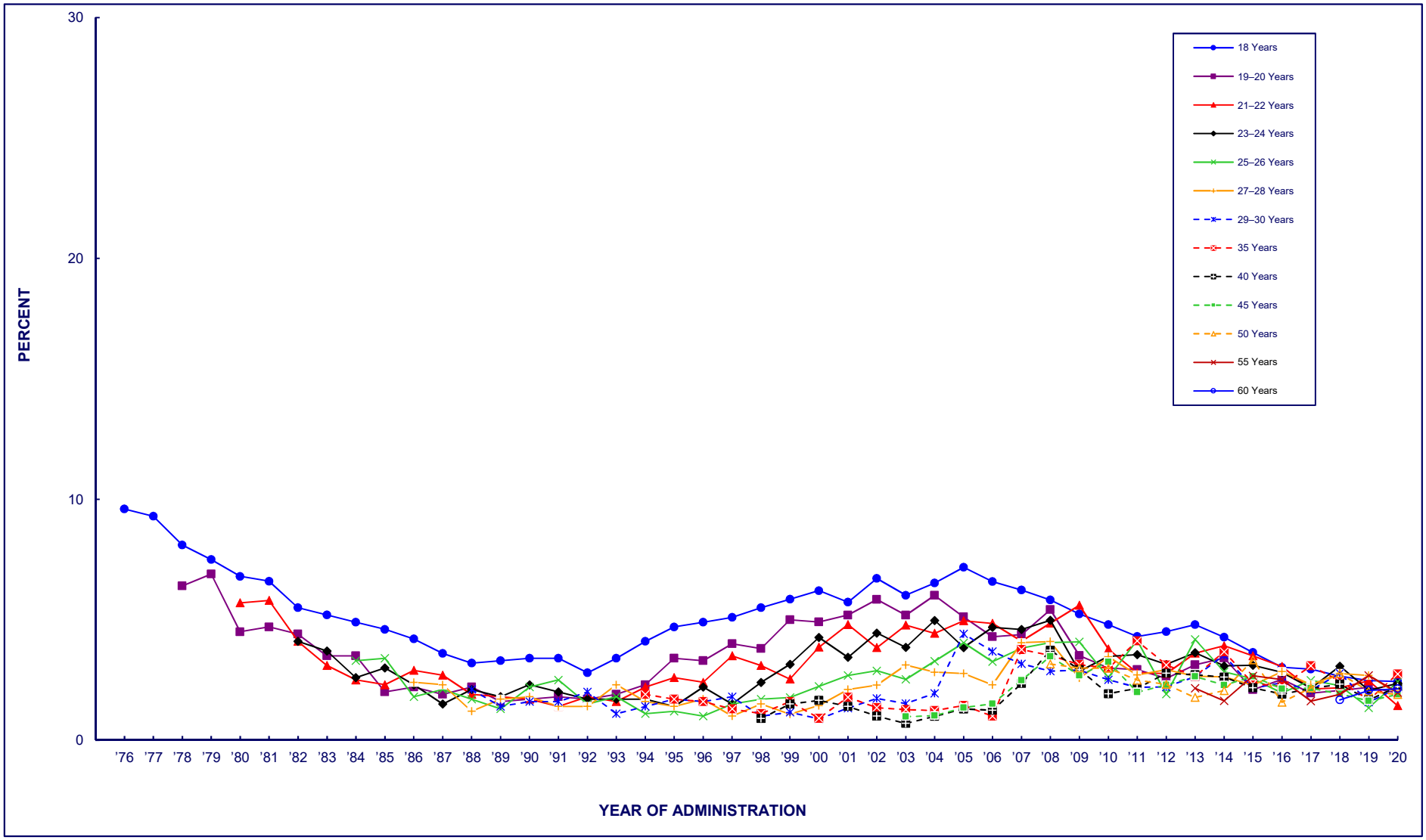
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30
1976							
1977							
1978							
1979							
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990	1.3	0.3	0.7	0.4	0.3	0.5	0.3
1991	1.4	0.4	0.5	0.4	0.2	*	0.1
1992	1.3	0.3	0.1	0.7	0.8	0.3	0.4
1993	1.7	1.4	1.0	0.9	0.1	0.6	0.3
1994	1.8	1.3	0.4	1.7	0.6	0.3	0.7
1995	2.4	1.1	2.2	0.8	0.2	0.8	0.6
1996	2.8	1.5	0.7	1.4	0.1	0.5	0.2
1997	2.3	0.7	1.5	1.3	0.4	0.3	0.7
1998	3.0	2.0	1.1	1.4	0.6	*	*
1999	1.9	1.4	0.6	1.5	0.8	0.4	*
2000	2.2	1.3	1.2	2.3	0.7	0.7	*
2001	2.5	1.9	0.9	0.6	1.1	0.8	0.3
2002	3.0	2.6	1.2	1.6	0.9	0.8	0.7
2003	3.0	2.6	1.2	1.6	0.9	0.8	0.7
2004	2.0	1.7	1.2	1.1	0.9	1.3	0.1
2005	2.3	2.4	1.7	1.0	1.7	1.3	1.7
2006	1.9	1.6	1.7	0.5	0.6	1.0	0.9
2007	1.6	0.9	0.9	1.8	1.2	0.6	0.7
2008	1.1	0.7	0.2	1.4	0.8	0.7	0.3
2009	0.9	0.5	0.5	1.3	0.8	0.7	0.3
2010	0.9	0.7	0.5	0.3	0.7	*	0.1
2011	1.2	0.4	0.5	0.3	0.3	0.9	0.1
2012	0.8	0.7	0.5	0.1	0.6	1.0	0.5
2013	1.1	0.3	0.2	1.2	1.2	1.0	1.2
2014	0.8	0.3	0.3	0.3	0.3	0.2	0.7
2015	0.5	*	0.4	0.4	1.2	0.3	0.6
2016	0.8	*	0.4	*	0.2	*	*
2017	0.8	0.5	0.8	0.2	0.8	1.1	0.7
2018	0.6	0.2	0.2	0.6	0.6	0.4	0.2
2019	0.6	0.4	0.6	1.1	*	0.6	1.0
2020	*	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a percentage of less than 0.05%. ' — ' indicates data not available.

[1]Questions about use of crystal methamphetamine were not included in the questionnaires administered to those ages 35+.

FIGURE 5-15
SEDATIVES (BARBITURATES)
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-15 (cont.)
SEDATIVES (BARBITURATES)
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

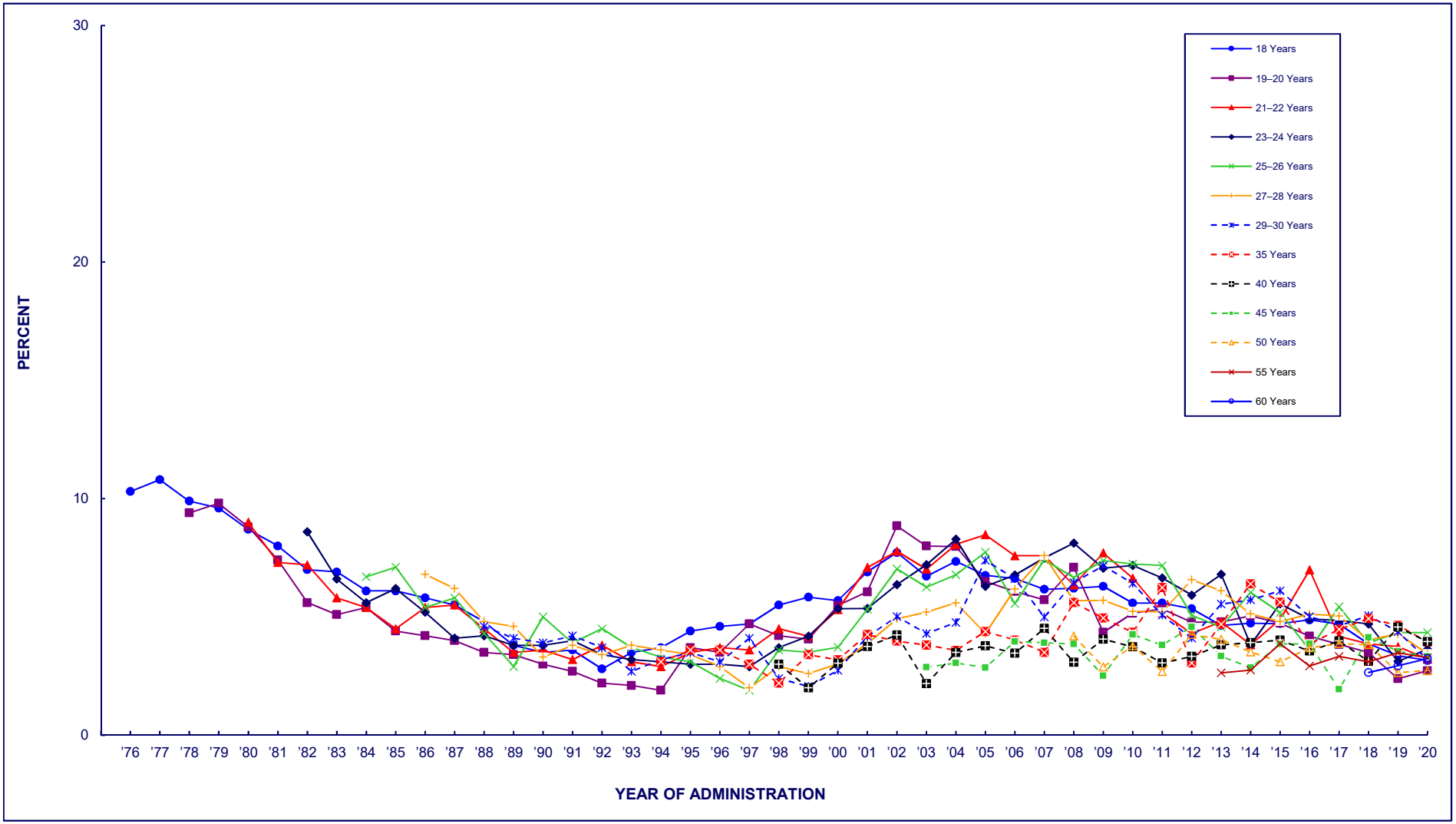
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	9.6												
1977	9.3												
1978	8.1	6.4											
1979	7.5	6.9											
1980	6.8	4.5	5.7										
1981	6.6	4.7	5.8										
1982	5.5	4.4	4.1	4.1									
1983	5.2	3.5	3.1	3.7									
1984	4.9	3.5	2.5	2.6	3.3								
1985	4.6	2.0	2.3	3.0	3.4								
1986	4.2	2.2	2.9	2.3	1.8	2.4							
1987	3.6	1.9	2.7	1.5	2.1	2.3							
1988	3.2	2.2	1.9	2.1	1.7	1.2	2.1						
1989	3.3	1.6	1.8	1.8	1.3	1.7	1.4						
1990	3.4	1.7	1.7	2.3	2.2	1.8	1.6						
1991	3.4	1.8	1.4	2.0	2.5	1.4	1.6						
1992	2.8	1.7	1.8	1.7	1.5	1.4	2.0						
1993	3.4	1.9	1.6	1.7	1.8	2.3	1.1						
1994	4.1	2.3	2.2	1.7	1.1	1.6	1.4	1.9					
1995	4.7	3.4	2.6	1.4	1.2	1.4	1.7	1.7					
1996	4.9	3.3	2.4	2.2	1.0	1.7	1.6	1.6					
1997	5.1	4.0	3.5	1.5	1.5	1.0	1.8	1.3					
1998	5.5	3.8	3.1	2.4	1.7	1.5	1.0	1.1	0.9				
1999	5.8	5.0	2.5	3.2	1.8	1.1	1.2	1.6	1.5				
2000	6.2	4.9	3.9	4.3	2.2	1.4	0.9	0.9	1.6				
2001	5.7	5.2	4.8	3.4	2.7	2.1	1.3	1.8	1.4				
2002	6.7	5.8	3.8	4.4	2.9	2.3	1.7	1.4	1.0				
2003	6.0	5.2	4.8	3.9	2.5	3.1	1.5	1.3	0.7	1.0			
2004	6.5	6.0	4.4	5.0	3.3	2.8	1.9	1.2	1.0	1.0			
2005	7.2	5.1	5.0	3.8	4.0	2.8	4.4	1.4	1.3	1.4			
2006	6.6	4.3	4.8	4.7	3.3	2.3	3.7	1.0	1.2	1.5			
2007	6.2	4.4	4.1	4.6	3.8	4.0	3.2	3.8	2.4	2.5			
2008	5.8	5.4	4.9	5.0	4.0	4.1	2.9	3.5	3.7	3.5	3.2		
2009	5.2	3.5	5.6	2.9	4.1	2.6	2.9	3.1	2.9	2.7	3.0		
2010	4.8	3.0	3.8	3.5	2.6	3.5	2.5	3.0	1.9	3.2	3.0		
2011	4.3	2.9	2.8	3.5	4.1	2.7	2.2	4.1	2.2	2.0	2.5		
2012	4.5	2.6	2.8	3.1	1.9	2.9	2.2	3.1	2.8	2.3	2.3		
2013	4.8	3.1	3.6	3.6	4.2	2.7	2.6	2.6	2.7	2.7	1.8	2.2	
2014	4.3	3.4	3.9	3.1	2.8	2.6	3.5	3.7	2.6	2.3	2.1	1.6	
2015	3.6	2.1	3.5	3.1	2.5	2.3	2.2	2.3	2.2	2.7	3.3	2.7	
2016	3.0	2.5	3.1	2.8	2.0	2.9	2.4	2.2	1.9	2.1	1.6	2.5	
2017	2.9	2.0	2.1	2.2	2.5	2.3	2.1	3.1	2.1	2.2	2.2	1.6	
2018	2.7	2.1	2.2	3.1	2.3	2.8	2.8	2.5	2.3	1.9	2.8	1.9	1.7
2019	2.5	2.2	2.5	2.1	1.3	2.7	1.6	1.7	1.7	1.6	2.0	2.7	2.1
2020 [1]	2.4	2.0	1.4	2.4	2.4	1.9	2.2	2.8	2.2	1.9	1.9	2.0	2.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]For the estimate of Annual Sedatives (Barbiturates) in 2020, there was a significant difference (p<.05) among those age 60 between the typical mail condition (1.3%) and the new web-push condition (3.3%) of survey administration.

FIGURE 5-16
TRANQUILIZERS
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

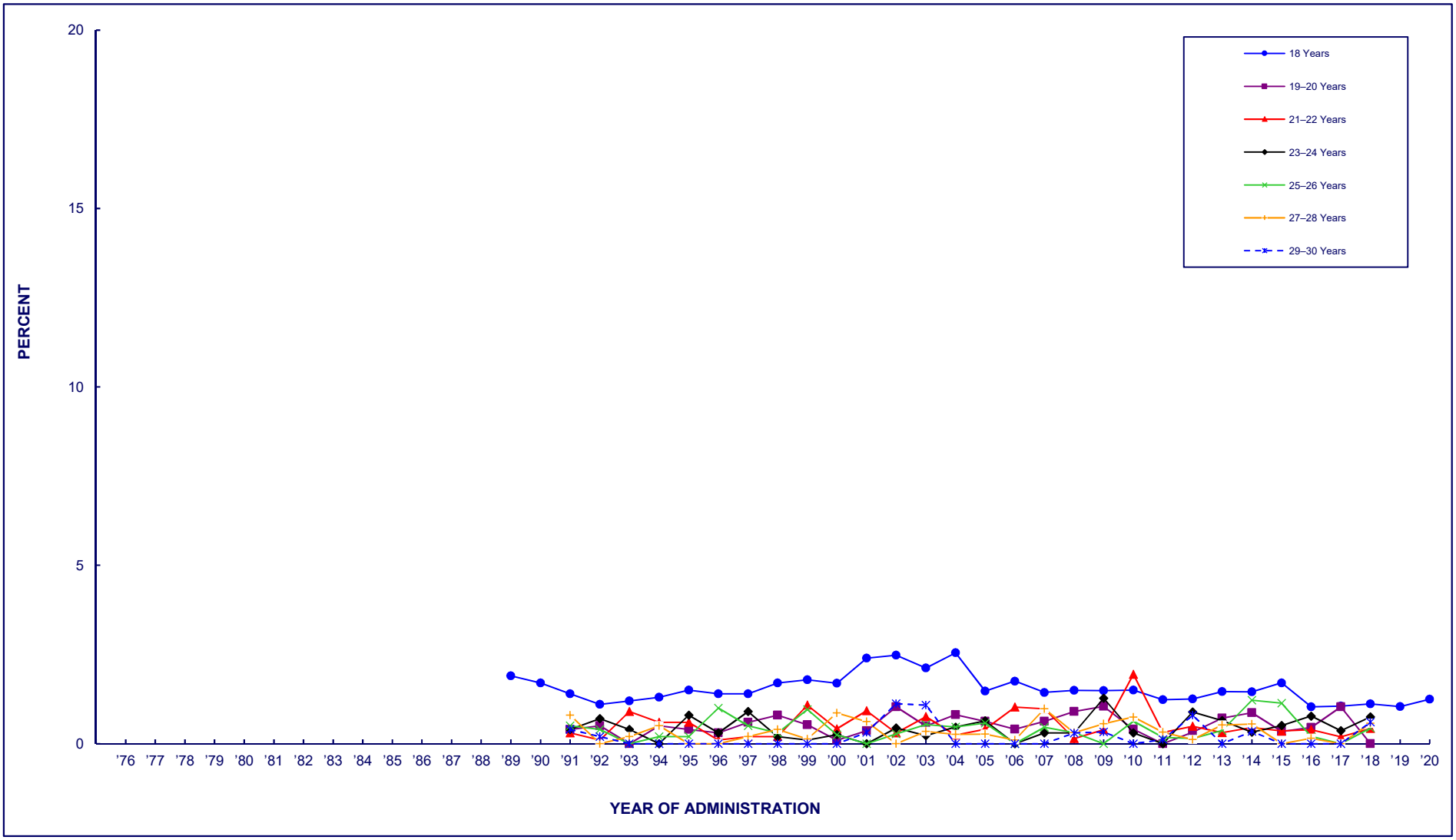
FIGURE 5-16 (cont.)
TRANQUILIZERS
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	10.3												
1977	10.8												
1978	9.9	9.4											
1979	9.6	9.8											
1980	8.7	8.8	9.0										
1981	8.0	7.4	7.3										
1982	7.0	5.6	7.2	8.6									
1983	6.9	5.1	5.8	6.6									
1984	6.1	5.4	5.4	5.6	6.7								
1985	6.1	4.4	4.5	6.2	7.1								
1986	5.8	4.2	5.4	5.2	5.4	6.8							
1987	5.5	4.0	5.5	4.1	5.8	6.2							
1988	4.8	3.5	4.5	4.2	4.3	4.8	4.6						
1989	3.8	3.4	3.5	3.8	2.9	4.6	4.1						
1990	3.5	3.0	3.6	3.8	5.0	3.3	3.9						
1991	3.6	2.7	3.2	4.0	3.9	3.8	4.2						
1992	2.8	2.2	3.8	3.4	4.5	3.4	3.7						
1993	3.5	2.1	3.1	3.2	3.7	3.8	2.7						
1994	3.7	1.9	2.9	3.1	3.3	3.6	3.2	3.1					
1995	4.4	3.7	3.5	3.0	3.1	3.4	3.5	3.6					
1996	4.6	3.5	3.7	3.0	2.4	2.9	3.1	3.6					
1997	4.7	4.7	3.6	2.9	1.9	2.0	4.1	3.0					
1998	5.5	4.2	4.5	3.7	3.6	2.9	2.4	2.2	3.0				
1999	5.8	4.1	4.2	4.2	3.5	2.6	2.1	3.4	2.0				
2000	5.7	5.5	5.3	5.3	3.7	3.0	2.7	3.2	3.0				
2001	6.9	6.1	7.1	5.4	5.3	3.9	4.2	4.3	3.7				
2002	7.7	8.8	7.8	6.4	7.0	4.9	5.0	4.0	4.2				
2003	6.7	8.0	7.0	7.2	6.3	5.2	4.3	3.8	2.2	2.9			
2004	7.3	8.0	8.1	8.3	6.8	5.6	4.8	3.6	3.5	3.1			
2005	6.8	6.5	8.5	6.3	7.7	4.3	7.4	4.4	3.8	2.9			
2006	6.6	6.1	7.6	6.8	5.6	6.2	6.6	4.0	3.5	4.0			
2007	6.2	5.7	7.6	7.5	7.4	7.6	5.0	3.5	4.5	3.9			
2008	6.2	7.1	6.3	8.1	6.7	5.7	6.5	5.6	3.1	3.8	4.2		
2009	6.3	4.3	7.7	7.1	7.4	5.7	7.2	5.0	4.1	2.5	2.9		
2010	5.6	5.2	6.6	7.2	7.2	5.2	6.4	4.4	3.7	4.3	3.8		
2011	5.6	5.3	5.2	6.6	7.2	5.2	5.1	6.2	3.0	3.8	2.7		
2012	5.3	4.8	4.3	5.9	5.1	6.6	4.1	3.1	3.3	4.6	4.3		
2013	4.6	4.8	4.8	6.8	4.6	6.1	5.5	4.7	3.8	3.3	4.1	2.6	
2014	4.7	5.0	3.8	3.8	6.0	5.1	5.7	6.4	3.9	2.9	3.5	2.7	
2015	4.7	4.7	4.9	5.6	5.2	4.8	6.1	5.6	4.0	3.8	3.1	3.9	
2016	4.9	4.2	7.0	4.9	3.6	5.1	5.0	3.9	3.6	3.9	3.7	2.9	
2017	4.7	3.8	4.2	4.9	5.4	5.0	4.6	4.5	4.0	1.9	3.9	3.3	
2018	3.9	3.5	3.9	4.7	3.9	4.0	5.1	4.9	3.1	4.1	3.8	3.1	2.6
2019	3.4	2.4	3.7	3.1	4.3	4.3	4.4	4.6	4.6	3.5	2.6	3.5	2.9
2020	3.2	2.7	3.2	3.6	4.3	3.4	3.2	3.9	4.0	3.3	2.7	3.3	3.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-17
STEROIDS
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 30, [1] by Age Group



(Figure continued on next page.)

FIGURE 5-17 (cont.)
STEROIDS
Trends in Annual Prevalence among Respondents of Modal Ages 18 through 30, [1] by Age Group

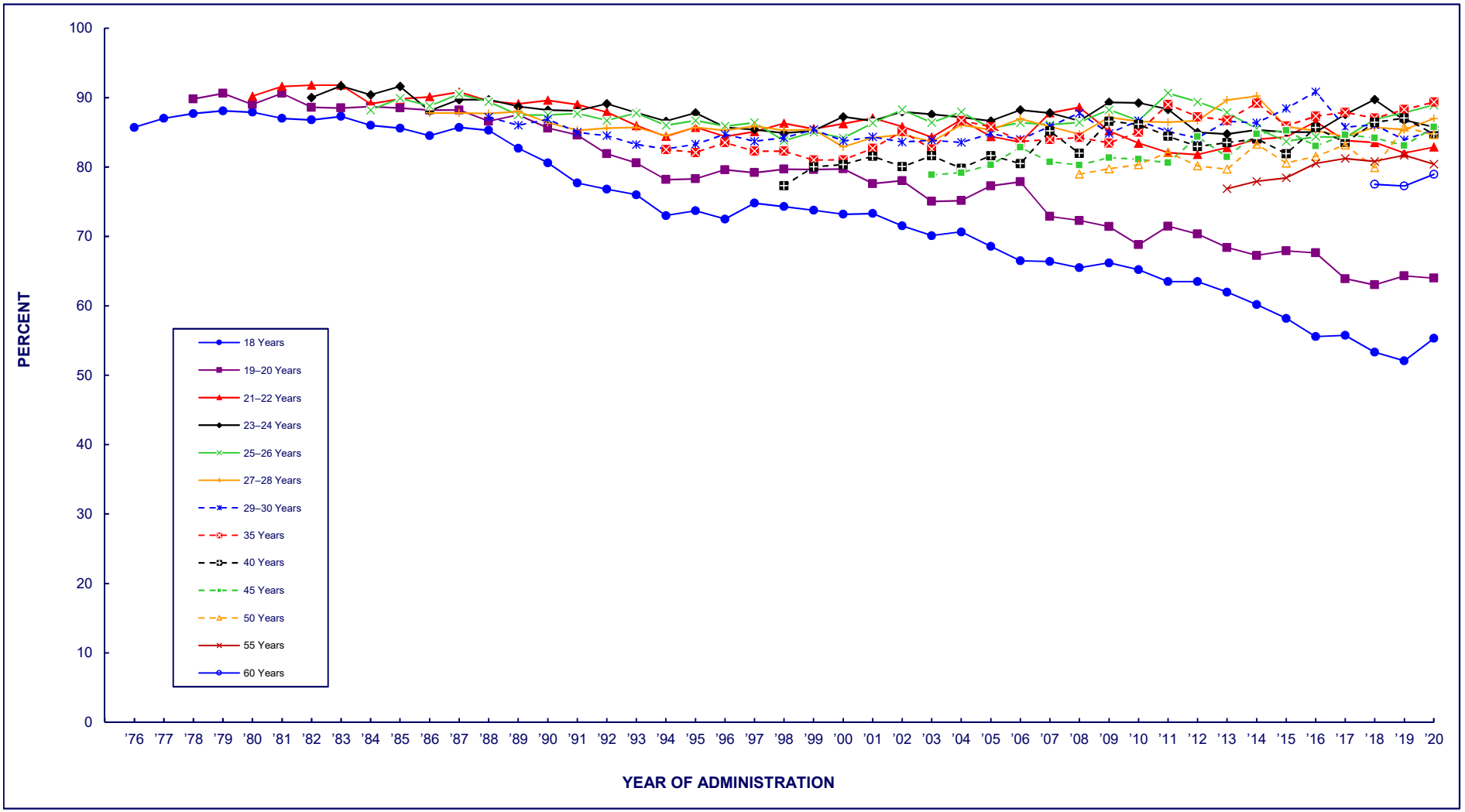
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30
1976							
1977							
1978							
1979							
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989	1.9						
1990	1.7						
1991	1.4	0.4	0.3	0.4	0.5	0.8	0.4
1992	1.1	0.5	0.1	0.7	0.4	*	0.2
1993	1.2	*	0.9	0.4	*	0.2	*
1994	1.3	0.5	0.6	*	0.2	0.5	*
1995	1.5	0.4	0.6	0.8	0.2	*	*
1996	1.4	0.3	0.1	0.3	1.0	*	*
1997	1.4	0.6	0.2	0.9	0.5	0.2	*
1998	1.7	0.8	0.2	0.2	0.3	0.4	*
1999	1.8	0.5	1.1	0.1	1.0	0.1	*
2000	1.7	0.1	0.4	0.3	0.2	0.9	*
2001	2.4	0.4	0.9	*	*	0.6	0.3
2002	2.5	1.0	0.3	0.4	0.3	*	1.1
2003	2.1	0.5	0.8	0.2	0.5	0.3	1.1
2004	2.5	0.8	0.2	0.5	0.5	0.3	*
2005	1.5	0.6	0.4	0.6	0.6	0.3	*
2006	1.8	0.4	1.0	*	*	0.1	*
2007	1.4	0.6	1.0	0.3	0.5	1.0	*
2008	1.5	0.9	0.1	0.3	0.3	0.3	0.3
2009	1.5	1.0	0.4	1.3	*	0.6	0.3
2010	1.5	0.4	1.9	0.3	0.6	0.7	*
2011	1.2	*	0.3	*	0.2	0.3	0.1
2012	1.3	0.3	0.5	0.9	0.1	0.1	0.8
2013	1.5	0.7	0.3	0.6	0.4	0.5	*
2014	1.5	0.9	0.5	0.3	1.2	0.5	0.3
2015	1.7	0.3	0.4	0.5	1.1	*	*
2016	1.0	0.5	0.4	0.8	0.2	0.1	*
2017	1.1	1.0	0.2	0.4	*	*	*
2018	1.1	*	0.4	0.8	0.4	0.6	0.6
2019	1.0	—	—	—	—	—	—
2020	1.2	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a percentage of less than 0.05%. ' — ' indicates data not availa

[1]Questions about the use of steroids were not included in the questionnaires administered to those 35+, and those for ages 19-30 after 2018.

FIGURE 5-18a
ALCOHOL
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

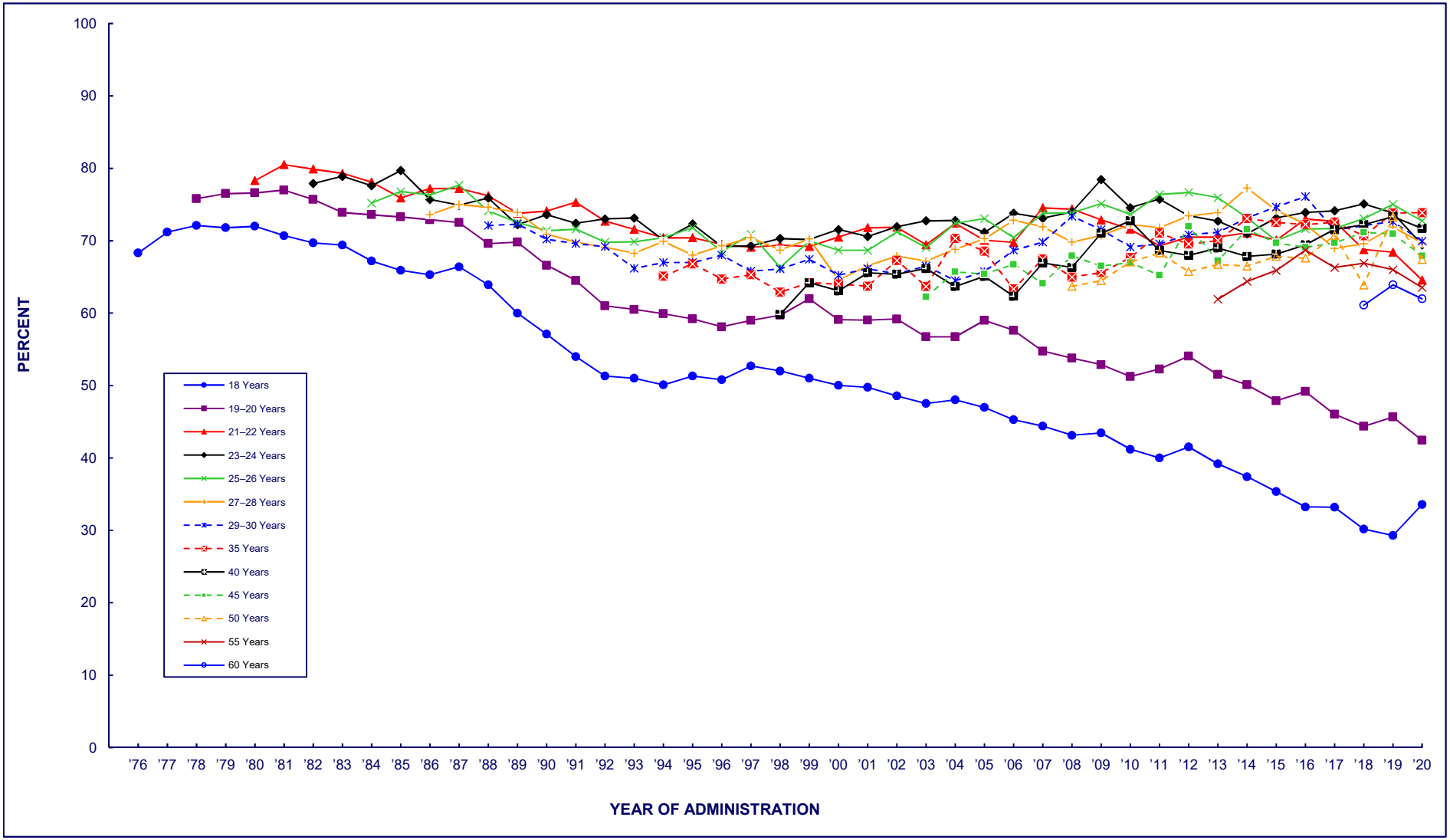
FIGURE 5-18a (cont.)
ALCOHOL
Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	85.7												
1977	87.0												
1978	87.7	89.8											
1979	88.1	90.6											
1980	87.9	89.0	90.2										
1981	87.0	90.6	91.6										
1982	86.8	88.6	91.8	90.0									
1983	87.3	88.5	91.8	91.7									
1984	86.0	88.7	89.1	90.4	88.2								
1985	85.6	88.5	89.8	91.6	89.9								
1986	84.5	88.2	90.1	88.1	88.8	87.8							
1987	85.7	88.2	90.8	89.7	90.5	87.8							
1988	85.3	86.6	89.5	89.7	89.4	87.7	87.2						
1989	82.7	87.5	89.1	88.7	87.5	88.0	86.0						
1990	80.6	85.6	89.6	88.2	87.5	86.4	86.9						
1991	77.7	84.6	89.0	88.1	87.7	85.3	85.0						
1992	76.8	81.9	87.9	89.1	86.7	85.6	84.5						
1993	76.0	80.6	85.9	87.8	87.8	85.7	83.2						
1994	73.0	78.2	84.4	86.6	86.0	84.5	82.6	82.5					
1995	73.7	78.3	85.7	87.8	86.7	85.7	83.3	82.1					
1996	72.5	79.6	84.4	85.7	85.9	85.3	84.7	83.5					
1997	74.8	79.2	85.1	85.4	86.4	85.9	83.7	82.3					
1998	74.3	79.7	86.3	84.9	83.8	85.3	84.2	82.3	77.3				
1999	73.8	79.6	85.5	85.2	85.0	85.4	85.4	81.0	80.0				
2000	73.2	79.7	86.2	87.2	84.2	82.9	83.7	81.0	80.3				
2001	73.3	77.6	87.0	86.7	86.3	84.2	84.3	82.7	81.5				
2002	71.5	78.0	85.8	88.0	88.3	84.7	83.6	85.1	80.0				
2003	70.1	75.0	84.3	87.6	86.4	83.6	83.9	82.6	81.6	78.9			
2004	70.6	75.2	86.8	87.2	87.9	86.1	83.5	86.7	79.8	79.2			
2005	68.6	77.3	84.4	86.6	85.6	85.3	84.8	85.8	81.6	80.3			
2006	66.5	77.9	83.6	88.2	86.4	86.9	84.0	83.7	80.5	82.8			
2007	66.4	72.9	87.8	87.8	86.1	85.8	85.9	84.0	85.2	80.7			
2008	65.5	72.3	88.6	86.6	86.4	84.7	87.8	84.3	82.0	80.3	79.0		
2009	66.2	71.4	85.2	89.3	88.2	87.2	84.8	83.5	86.6	81.3	79.7		
2010	65.2	68.8	83.4	89.2	86.7	86.6	86.7	85.0	86.1	81.1	80.3		
2011	63.5	71.5	82.1	88.3	90.6	86.4	85.1	89.0	84.4	80.6	82.1		
2012	63.5	70.3	81.8	85.0	89.4	86.7	84.2	87.2	83.0	84.4	80.2		
2013	62.0	68.4	82.8	84.7	87.9	89.6	86.6	86.7	83.5	81.5	79.7	76.9	
2014	60.2	67.3	84.0	85.3	85.5	90.2	86.4	89.2	84.1	84.8	83.3	77.9	
2015	58.2	67.9	84.3	85.0	83.7	85.8	88.4	85.9	81.9	85.3	80.6	78.4	
2016	55.6	67.6	86.5	85.0	84.4	85.2	90.8	87.3	85.7	83.0	81.5	80.5	
2017	55.7	63.9	83.8	87.6	84.3	84.4	85.7	87.9	83.5	84.6	83.2	81.2	
2018	53.3	63.0	83.5	89.7	86.8	85.7	86.1	87.0	86.4	84.2	79.9	80.8	77.5
2019	52.1	64.3	82.0	86.7	87.8	85.4	83.9	88.3	87.1	83.1	85.7	81.7	77.3
2020	55.3	64.0	82.9	85.7	88.9	87.0	85.3	89.4	84.8	85.8	84.7	80.4	78.9

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-18b
ALCOHOL
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-18b (cont.)
ALCOHOL
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

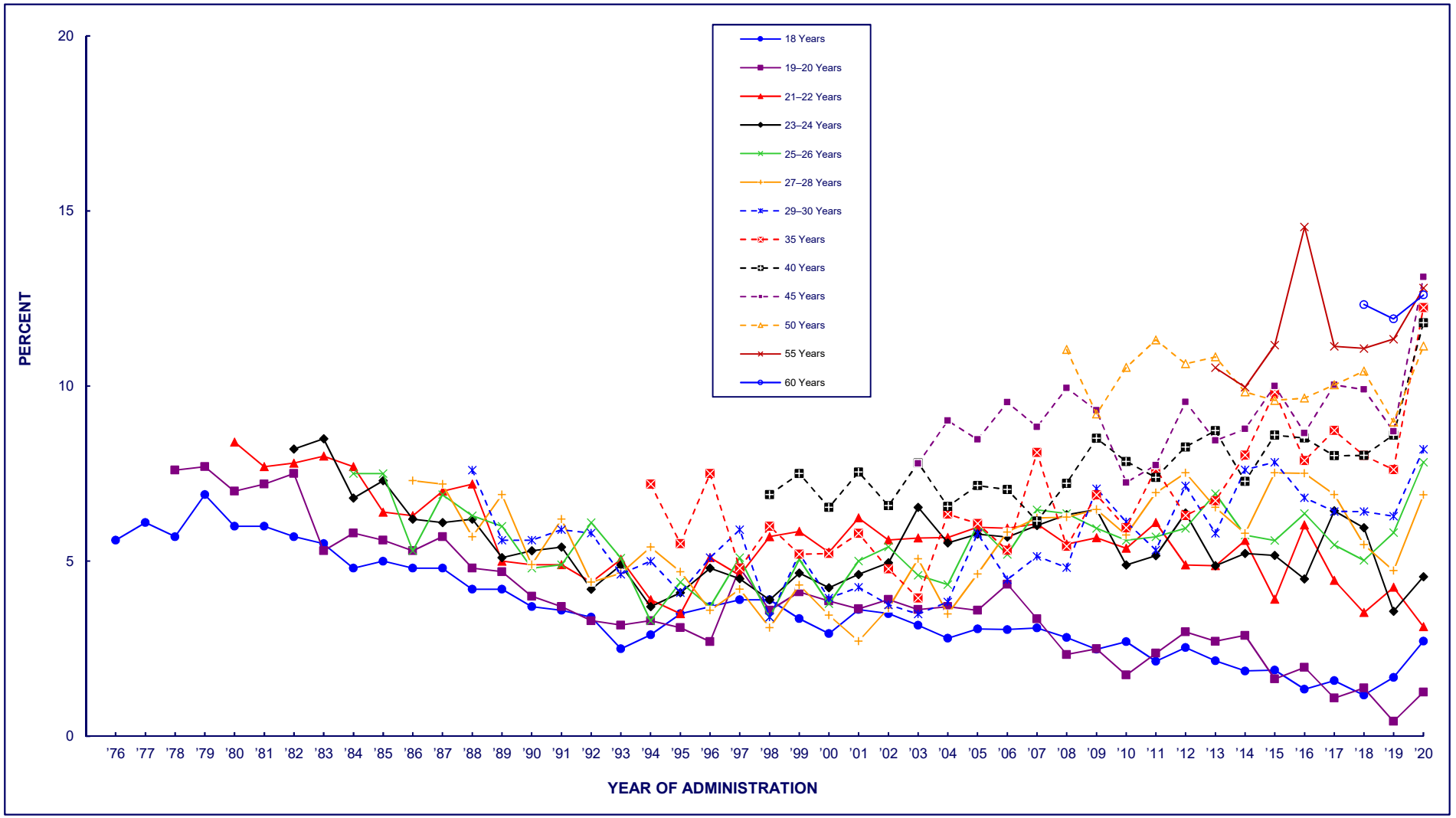
Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	68.3												
1977	71.2												
1978	72.1	75.8											
1979	71.8	76.5											
1980	72.0	76.6	78.3										
1981	70.7	77.0	80.5										
1982	69.7	75.7	79.9	77.9									
1983	69.4	73.9	79.3	78.9									
1984	67.2	73.6	78.1	77.6	75.2								
1985	65.9	73.3	75.9	79.7	76.8								
1986	65.3	72.9	77.2	75.7	76.3	73.6							
1987	66.4	72.5	77.2	74.9	77.7	75.0							
1988	63.9	69.6	76.2	75.9	74.1	74.6	72.1						
1989	60.0	69.8	73.8	72.2	72.5	73.9	72.3						
1990	57.1	66.6	74.1	73.6	71.4	70.9	70.2						
1991	54.0	64.5	75.3	72.4	71.6	69.8	69.6						
1992	51.3	61.0	72.7	73.0	69.8	69.1	69.2						
1993	51.0	60.5	71.6	73.1	69.9	68.3	66.2						
1994	50.1	59.9	70.4	70.1	70.4	69.9	67.0	65.1					
1995	51.3	59.2	70.4	72.3	71.8	68.0	67.0	66.8					
1996	50.8	58.1	69.5	69.2	68.5	69.3	68.0	64.7					
1997	52.7	59.0	69.1	69.3	70.9	70.4	65.8	65.3					
1998	52.0	59.7	69.4	70.3	66.3	68.7	66.1	62.9	59.8				
1999	51.0	62.0	69.2	70.2	70.0	70.2	67.4	64.2	64.2				
2000	50.0	59.1	70.5	71.5	68.7	64.6	65.2	64.0	63.1				
2001	49.8	59.0	71.8	70.6	68.7	66.5	66.2	63.7	65.6				
2002	48.6	59.2	71.9	71.9	71.2	67.9	65.4	67.3	65.4				
2003	47.5	56.7	69.5	72.7	69.1	67.2	66.5	63.7	66.2	62.2			
2004	48.0	56.7	72.4	72.8	72.4	68.8	64.5	70.3	63.7	65.7			
2005	47.0	59.0	70.1	71.2	73.0	70.3	65.7	68.5	65.1	65.4			
2006	45.3	57.6	69.7	73.8	70.4	72.8	68.7	63.3	62.3	66.7			
2007	44.4	54.7	74.5	73.1	73.8	71.9	69.8	67.5	66.9	64.1			
2008	43.1	53.8	74.4	74.0	73.9	69.8	73.4	65.0	66.3	67.9	63.7		
2009	43.5	52.9	72.9	78.4	75.1	70.7	71.5	65.6	71.0	66.5	64.5		
2010	41.2	51.2	71.6	74.6	73.6	72.2	69.1	67.7	72.7	67.0	67.1		
2011	40.0	52.3	69.3	75.7	76.4	71.8	69.6	71.1	68.6	65.2	68.3		
2012	41.5	54.1	70.5	73.5	76.7	73.4	70.8	69.5	68.0	72.0	65.7		
2013	39.2	51.5	70.5	72.7	75.9	73.9	71.1	70.0	69.0	67.2	66.7	61.9	
2014	37.4	50.1	71.1	71.0	73.2	77.3	73.2	73.1	67.8	71.6	66.5	64.4	
2015	35.3	47.9	70.1	73.1	70.0	74.2	74.7	72.5	68.1	69.7	67.8	65.9	
2016	33.2	49.2	73.0	73.9	71.6	72.3	76.1	72.2	69.4	69.1	67.6	68.7	
2017	33.2	46.0	72.7	74.1	71.7	68.9	71.5	72.5	71.5	69.7	70.8	66.3	
2018	30.2	44.4	68.8	75.1	73.0	69.6	72.1	70.7	72.2	71.2	63.9	66.9	61.1
2019	29.3	45.6	68.4	73.8	75.0	71.9	72.6	73.8	73.3	71.0	73.3	66.0	63.9
2020 [1]	33.6	42.4	64.6	69.4	72.7	69.7	69.9	73.9	71.7	67.9	67.4	63.5	62.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]For the estimate of 30-Day Alcohol in 2020, there was a significant difference (p<.05) among those age 40 between the typical mail condition (68.2%) and the new web-push condition (75.9%) of survey administration.

FIGURE 5-18c
ALCOHOL
Trends in 30-Day Prevalence of Daily Use
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-18c (cont.)
ALCOHOL
Trends in 30-Day Prevalence of Daily Use among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	5.6												
1977	6.1												
1978	5.7	7.6											
1979	6.9	7.7											
1980	6.0	7.0	8.4										
1981	6.0	7.2	7.7										
1982	5.7	7.5	7.8	8.2									
1983	5.5	5.3	8.0	8.5									
1984	4.8	5.8	7.7	6.8	7.5								
1985	5.0	5.6	6.4	7.3	7.5								
1986	4.8	5.3	6.3	6.2	5.3	7.3							
1987	4.8	5.7	7.0	6.1	6.9	7.2							
1988	4.2	4.8	7.2	6.2	6.3	5.7	7.6						
1989	4.2	4.7	5.0	5.1	6.0	6.9	5.6						
1990	3.7	4.0	4.9	5.3	4.8	4.9	5.6						
1991	3.6	3.7	4.9	5.4	4.9	6.2	5.9						
1992	3.4	3.3	4.4	4.2	6.1	4.4	5.8						
1993	2.5	3.2	5.1	4.9	5.1	4.7	4.6						
1994	2.9	3.3	3.9	3.7	3.3	5.4	5.0	7.2					
1995	3.5	3.1	3.5	4.1	4.4	4.7	4.1	5.5					
1996	3.7	2.7	5.1	4.8	3.7	3.6	5.1	7.5					
1997	3.9	4.8	4.6	4.5	5.1	4.2	5.9	4.8					
1998	3.9	3.6	5.7	3.9	3.4	3.1	3.4	6.0	6.9				
1999	3.4	4.1	5.9	4.7	5.1	4.3	5.2	5.2	7.5				
2000	2.9	3.9	5.3	4.2	3.8	3.5	3.9	5.2	6.5				
2001	3.6	3.6	6.2	4.6	5.0	2.7	4.3	5.8	7.5				
2002	3.5	3.9	5.6	5.0	5.4	3.7	3.8	4.8	6.6				
2003	3.2	3.6	5.7	6.5	4.6	5.1	3.5	3.9	7.8	7.8			
2004	2.8	3.7	5.7	5.5	4.3	3.5	3.8	6.3	6.6	9.0			
2005	3.1	3.6	6.0	5.8	6.0	4.6	5.8	6.1	7.2	8.5			
2006	3.0	4.3	5.9	5.7	5.2	5.8	4.5	5.3	7.0	9.5			
2007	3.1	3.4	6.1	6.0	6.5	6.2	5.1	8.1	6.1	8.8			
2008	2.8	2.3	5.5	6.3	6.4	6.3	4.8	5.4	7.2	9.9	11.0		
2009	2.5	2.5	5.7	6.5	5.9	6.5	7.1	6.9	8.5	9.3	9.2		
2010	2.7	1.8	5.4	4.9	5.6	5.7	6.1	6.0	7.8	7.2	10.5		
2011	2.1	2.4	6.1	5.2	5.7	7.0	5.3	7.6	7.4	7.7	11.3		
2012	2.5	3.0	4.9	6.4	5.9	7.5	7.2	6.3	8.3	9.5	10.6		
2013	2.2	2.7	4.9	4.9	6.9	6.5	5.8	6.7	8.7	8.4	10.8	10.5	
2014	1.9	2.9	5.6	5.2	5.7	5.8	7.6	8.0	7.3	8.8	9.8	10.0	
2015	1.9	1.6	3.9	5.2	5.6	7.5	7.8	9.8	8.6	10.0	9.6	11.2	
2016	1.3	2.0	6.0	4.5	6.4	7.5	6.8	7.9	8.5	8.7	9.7	14.5	
2017	1.6	1.1	4.4	6.4	5.5	6.9	6.4	8.7	8.0	10.0	10.0	11.1	
2018	1.2	1.4	3.5	6.0	5.0	5.5	6.4	8.0	8.0	9.9	10.4	11.1	12.3
2019	1.7	0.4	4.3	3.6	5.8	4.7	6.3	7.6	8.6	8.7	9.0	11.3	11.9
2020	2.7	1.3	3.1	4.6	7.8	6.9	8.2	12.2	11.8	13.1	11.1	12.8	12.6

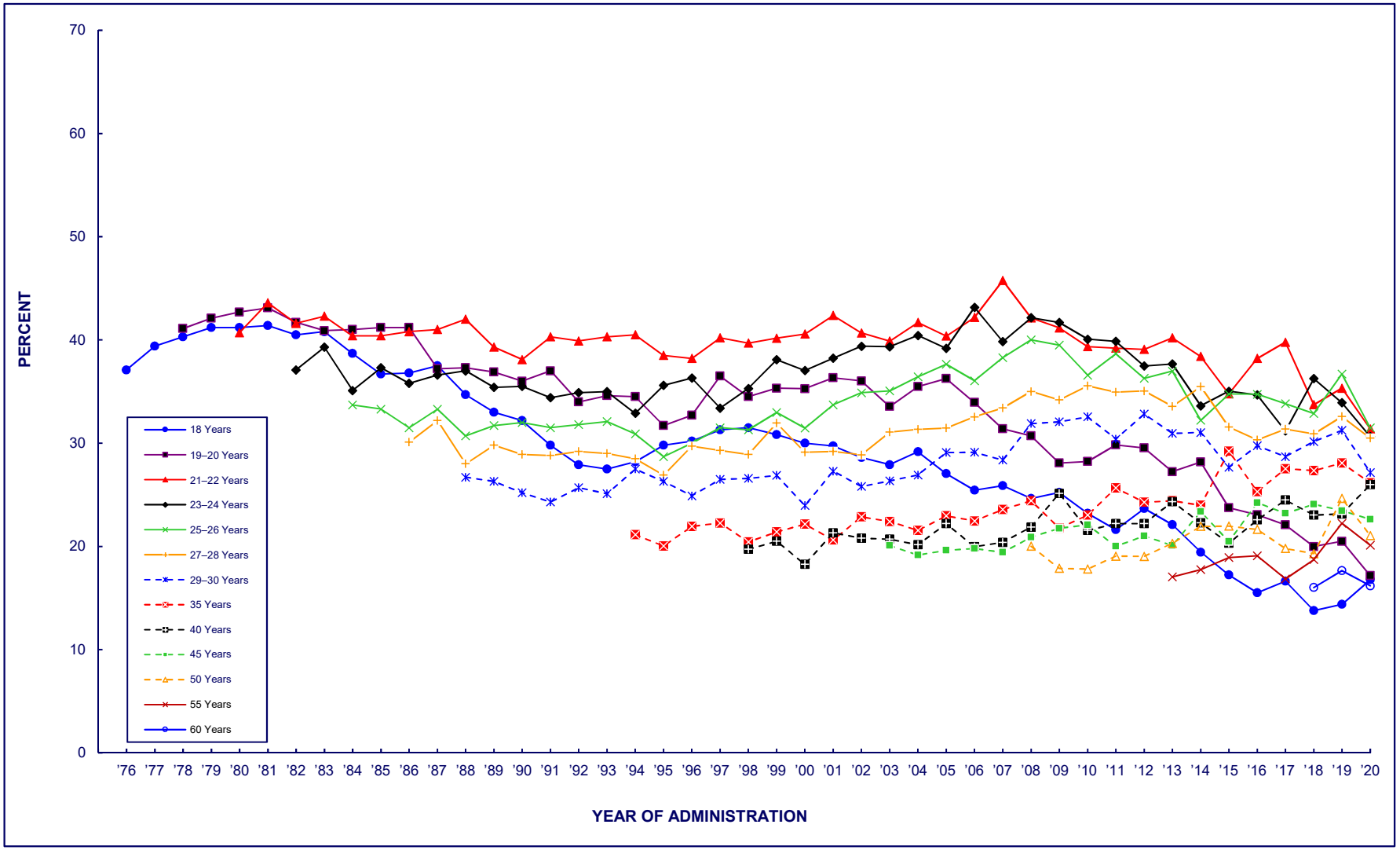
Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-18d

ALCOHOL

Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-18d (cont.)

ALCOHOL

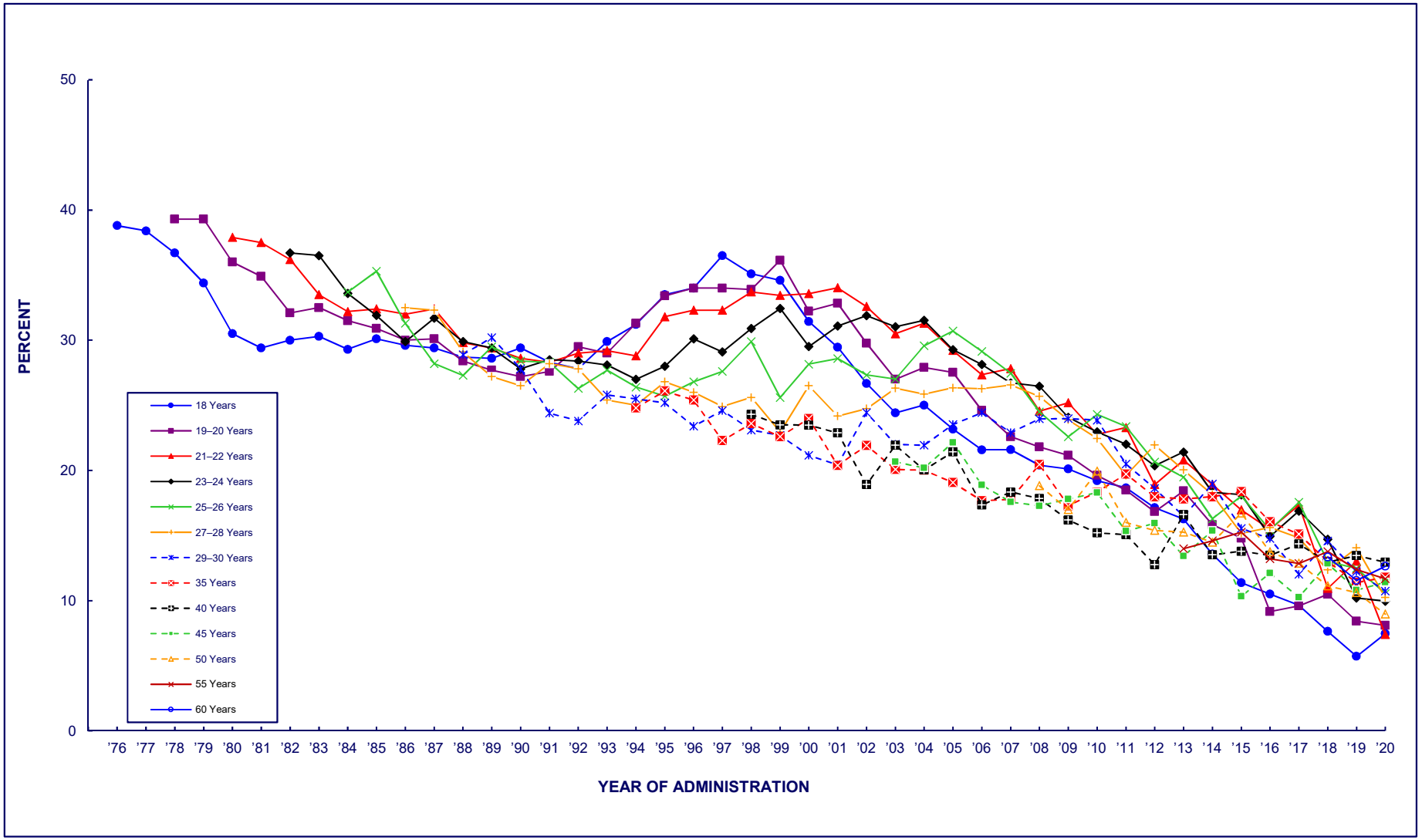
Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	37.1												
1977	39.4												
1978	40.3	41.1											
1979	41.2	42.1											
1980	41.2	42.7	40.7										
1981	41.4	43.1	43.6										
1982	40.5	41.7	41.6	37.1									
1983	40.8	40.9	42.3	39.3									
1984	38.7	41.0	40.4	35.1	33.7								
1985	36.7	41.2	40.4	37.3	33.3								
1986	36.8	41.2	40.8	35.8	31.5	30.1							
1987	37.5	37.2	41.0	36.6	33.3	32.2							
1988	34.7	37.3	42.0	37.0	30.7	28.0	26.7						
1989	33.0	36.9	39.3	35.4	31.7	29.8	26.3						
1990	32.2	36.0	38.1	35.5	32.0	28.9	25.2						
1991	29.8	37.0	40.3	34.4	31.5	28.8	24.3						
1992	27.9	34.0	39.9	34.9	31.8	29.2	25.7						
1993	27.5	34.6	40.3	35.0	32.1	29.0	25.1						
1994	28.2	34.5	40.5	32.9	30.9	28.5	27.5	21.1					
1995	29.8	31.7	38.5	35.6	28.7	26.9	26.3	20.0					
1996	30.2	32.7	38.2	36.3	30.0	29.7	24.9	21.9					
1997	31.3	36.5	40.2	33.4	31.5	29.3	26.5	22.3					
1998	31.5	34.5	39.7	35.3	31.3	28.9	26.6	20.4	19.7				
1999	30.8	35.3	40.2	38.1	33.0	32.0	26.9	21.4	20.5				
2000	30.0	35.3	40.6	37.0	31.5	29.1	24.0	22.2	18.3				
2001	29.7	36.3	42.4	38.2	33.7	29.2	27.3	20.6	21.3				
2002	28.6	36.0	40.7	39.4	34.9	28.9	25.8	22.9	20.8				
2003	27.9	33.6	39.9	39.3	35.1	31.1	26.4	22.4	20.7	20.1			
2004	29.2	35.5	41.7	40.4	36.4	31.3	26.9	21.6	20.2	19.2			
2005	27.1	36.3	40.4	39.2	37.7	31.5	29.1	23.0	22.2	19.6			
2006	25.4	33.9	42.2	43.2	36.0	32.5	29.1	22.5	20.0	19.8			
2007	25.9	31.4	45.8	39.8	38.3	33.4	28.4	23.6	20.4	19.4			
2008	24.6	30.7	42.1	42.2	40.0	35.0	31.9	24.4	21.9	20.9	20.0		
2009	25.2	28.1	41.2	41.7	39.5	34.2	32.1	21.8	25.1	21.8	17.9		
2010	23.2	28.2	39.3	40.1	36.6	35.6	32.6	23.0	21.6	22.1	17.8		
2011	21.6	29.8	39.2	39.9	38.7	35.0	30.4	25.7	22.2	20.0	19.1		
2012	23.7	29.5	39.1	37.5	36.3	35.1	32.8	24.3	22.2	21.0	19.0		
2013	22.1	27.2	40.2	37.7	37.0	33.6	30.9	24.4	24.3	20.1	20.3	17.0	
2014	19.4	28.2	38.4	33.6	32.2	35.5	31.0	24.0	22.3	23.4	21.9	17.7	
2015	17.2	23.7	34.8	35.0	34.8	31.6	27.7	29.2	20.3	20.5	22.0	18.9	
2016	15.5	23.1	38.2	34.7	34.7	30.3	29.8	25.3	22.6	24.2	21.7	19.1	
2017	16.6	22.1	39.8	31.2	33.8	31.4	28.7	27.5	24.5	23.2	19.8	16.9	
2018	13.8	20.0	33.7	36.3	32.9	30.9	30.2	27.3	23.0	24.1	19.3	18.7	16.0
2019	14.4	20.5	35.3	33.9	36.7	32.6	31.2	28.1	23.1	23.5	24.6	22.2	17.7
2020	16.8	17.2	31.4	30.6	31.5	30.5	27.2	26.2	26.0	22.6	21.1	20.1	16.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-19a
CIGARETTES
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-19a (cont.)
CIGARETTES
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	38.8												
1977	38.4												
1978	36.7	39.3											
1979	34.4	39.3											
1980	30.5	36.0	37.9										
1981	29.4	34.9	37.5										
1982	30.0	32.1	36.2	36.7									
1983	30.3	32.5	33.5	36.5									
1984	29.3	31.5	32.2	33.6	33.7								
1985	30.1	30.9	32.4	31.9	35.3								
1986	29.6	30.0	32.0	29.9	31.3	32.5							
1987	29.4	30.1	32.4	31.7	28.2	32.3							
1988	28.7	28.4	29.8	29.9	27.3	29.1	28.9						
1989	28.6	27.7	29.4	29.4	29.5	27.2	30.2						
1990	29.4	27.2	28.6	27.8	28.4	26.5	27.8						
1991	28.3	27.6	28.3	28.5	28.3	28.2	24.4						
1992	27.8	29.5	29.0	28.4	26.3	27.8	23.8						
1993	29.9	29.0	29.2	28.1	27.7	25.4	25.8						
1994	31.2	31.3	28.8	27.0	26.4	25.0	25.5	24.8					
1995	33.5	33.4	31.8	28.0	25.7	26.8	25.2	26.1					
1996	34.0	34.0	32.3	30.1	26.8	26.0	23.4	25.4					
1997	36.5	34.0	32.3	29.1	27.6	24.9	24.6	22.3					
1998	35.1	33.9	33.7	30.9	29.9	25.6	23.1	23.6	24.3				
1999	34.6	36.1	33.4	32.4	25.6	22.9	22.7	22.6	23.5				
2000	31.4	32.2	33.6	29.5	28.2	26.5	21.2	24.0	23.5				
2001	29.5	32.8	34.0	31.1	28.6	24.2	20.4	20.4	22.9				
2002	26.7	29.8	32.6	31.9	27.3	24.7	24.4	21.9	18.9				
2003	24.4	27.0	30.5	31.0	27.0	26.3	22.0	20.1	21.9	20.7			
2004	25.0	27.9	31.3	31.5	29.6	25.9	21.9	20.0	20.0	20.2			
2005	23.2	27.5	29.2	29.3	30.7	26.3	23.5	19.1	21.4	22.1			
2006	21.6	24.6	27.3	28.1	29.1	26.3	24.4	17.7	17.3	18.9			
2007	21.6	22.6	27.8	26.7	27.5	26.6	22.9	17.8	18.3	17.6			
2008	20.4	21.8	24.5	26.5	24.5	25.7	24.0	20.4	17.8	17.3	18.8		
2009	20.1	21.2	25.2	24.1	22.6	23.9	24.0	17.3	16.2	17.8	17.0		
2010	19.2	19.6	22.8	23.0	24.3	22.5	23.9	18.3	15.2	18.3	19.9		
2011	18.7	18.5	23.3	22.0	23.4	19.6	20.5	19.7	15.1	15.3	16.0		
2012	17.1	16.8	18.9	20.4	20.7	22.0	18.6	18.0	12.8	15.9	15.4		
2013	16.3	18.4	20.8	21.4	19.5	20.0	16.5	17.8	16.6	13.4	15.3	14.0	
2014	13.6	15.8	18.9	18.3	16.3	18.1	19.0	18.0	13.5	15.4	14.5	14.6	
2015	11.4	14.8	17.0	18.1	18.0	15.2	15.5	18.4	13.8	10.3	16.7	15.3	
2016	10.5	9.2	15.5	14.9	15.4	15.6	14.8	16.1	13.5	12.1	13.7	13.2	
2017	9.7	9.6	17.3	16.9	17.6	14.8	12.0	15.1	14.3	10.3	12.9	12.9	
2018	7.6	10.5	10.9	14.7	13.0	12.4	14.6	13.0	12.9	12.9	11.1	13.8	13.4
2019	5.7	8.4	13.0	10.2	12.5	14.1	12.2	11.4	13.5	10.8	10.6	12.4	11.5
2020 [1,2]	7.5	8.1	7.4	10.0	10.5	10.2	10.7	11.8	13.0	11.4	9.0	11.7	12.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]For the estimate of 30-Day Cigarettes in 2020, there was a significant difference (p<.05) among those age 45 between the typical mail condition (13.8%) and the new web-push condition (8.5%) of survey administration.

[2]For the estimate of 30-Day Cigarettes in 2020, there was a significant difference (p<.01) among those age 60 between the typical mail condition (15.1%) and the new web-push condition (9.1%) of survey administration.

FIGURE 5-19b
CIGARETTES
Trends in 30-Day Prevalence of Daily Use
among Respondents of Modal Ages 18 through 60, by Age Group

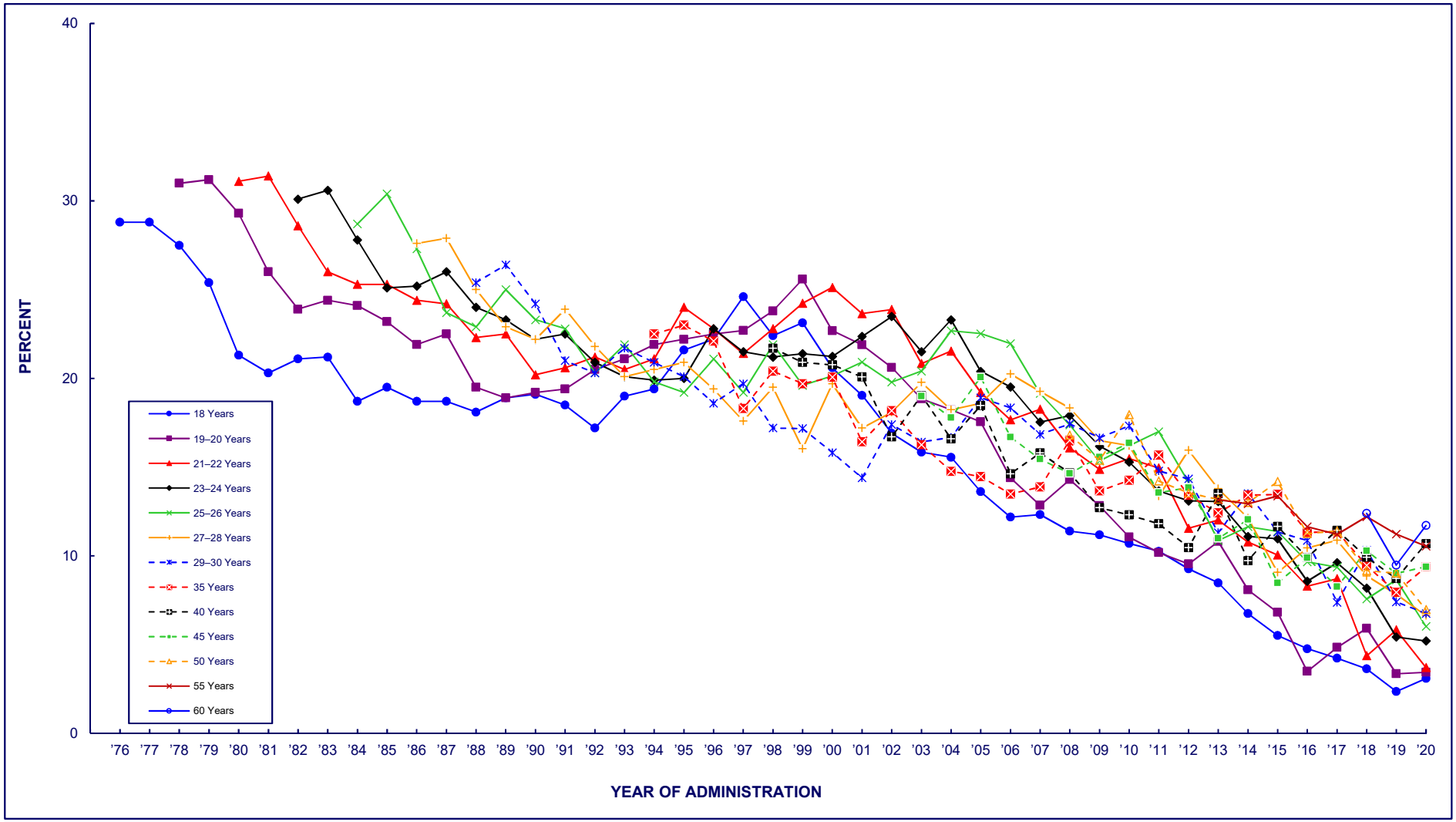


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FIGURE 5-19b (cont.)
CIGARETTES
Trends in 30-Day Prevalence of Daily Use among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	28.8												
1977	28.8												
1978	27.5	31.0											
1979	25.4	31.2											
1980	21.3	29.3	31.1										
1981	20.3	26.0	31.4										
1982	21.1	23.9	28.6	30.1									
1983	21.2	24.4	26.0	30.6									
1984	18.7	24.1	25.3	27.8	28.7								
1985	19.5	23.2	25.3	25.1	30.4								
1986	18.7	21.9	24.4	25.2	27.3	27.6							
1987	18.7	22.5	24.2	26.0	23.7	27.9							
1988	18.1	19.5	22.3	24.0	22.9	25.0	25.4						
1989	18.9	18.9	22.5	23.3	25.0	22.9	26.4						
1990	19.1	19.2	20.2	22.2	23.3	22.2	24.2						
1991	18.5	19.4	20.6	22.5	22.8	23.9	21.0						
1992	17.2	20.5	21.2	20.9	20.3	21.8	20.3						
1993	19.0	21.1	20.5	20.1	21.9	20.1	21.7						
1994	19.4	21.9	21.1	19.9	19.8	20.5	20.9	22.5					
1995	21.6	22.2	24.0	20.0	19.2	20.9	20.1	23.0					
1996	22.2	22.5	22.8	22.8	21.1	19.4	18.6	22.1					
1997	24.6	22.7	21.4	21.5	19.2	17.6	19.7	18.3					
1998	22.4	23.8	22.8	21.2	21.9	19.5	17.2	20.4	21.7				
1999	23.1	25.6	24.2	21.4	19.6	16.0	17.2	19.7	20.9				
2000	20.6	22.7	25.1	21.2	20.1	19.7	15.8	20.1	20.8				
2001	19.0	21.9	23.6	22.4	20.9	17.2	14.4	16.4	20.1				
2002	16.9	20.6	23.9	23.5	19.8	18.1	17.4	18.2	16.7				
2003	15.8	18.8	20.8	21.5	20.4	19.8	16.4	16.3	19.0	19.0			
2004	15.6	18.2	21.5	23.3	22.7	18.2	16.7	14.8	16.6	17.8			
2005	13.6	17.6	19.2	20.4	22.5	18.6	18.9	14.5	18.5	20.1			
2006	12.2	14.4	17.7	19.5	22.0	20.2	18.3	13.5	14.6	16.7			
2007	12.3	12.9	18.3	17.5	19.2	19.3	16.8	13.9	15.8	15.4			
2008	11.4	14.3	16.1	17.9	17.4	18.3	17.4	16.5	14.7	14.6	16.8		
2009	11.2	12.8	14.9	16.2	15.3	16.5	16.7	13.7	12.7	15.6	15.4		
2010	10.7	11.1	15.5	15.3	16.2	16.2	17.3	14.3	12.3	16.4	18.0		
2011	10.3	10.2	15.0	13.7	17.0	13.4	14.8	15.7	11.8	13.6	14.2		
2012	9.3	9.5	11.5	13.1	14.1	16.0	14.3	13.4	10.5	13.8	13.5		
2013	8.5	10.8	12.0	13.1	10.9	13.8	11.3	12.4	13.5	11.0	13.2	13.2	
2014	6.7	8.1	10.8	11.1	11.6	12.1	13.5	13.4	9.7	12.0	13.0	12.9	
2015	5.5	6.8	10.0	11.0	11.4	9.1	11.3	13.5	11.6	8.5	14.2	13.4	
2016	4.8	3.5	8.3	8.6	9.7	10.4	10.9	11.3	9.9	9.9	11.3	11.6	
2017	4.2	4.8	8.7	9.6	9.4	10.9	7.4	11.4	11.4	8.3	11.4	11.2	
2018	3.6	5.9	4.4	8.2	7.6	8.9	10.3	9.5	9.9	10.3	9.2	12.2	12.4
2019	2.4	3.4	5.8	5.4	8.6	7.8	7.4	7.9	8.7	9.0	9.0	11.2	9.5
2020 [1,2]	3.1	3.4	3.7	5.2	6.0	6.6	6.8	9.4	10.7	9.4	7.0	10.5	11.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

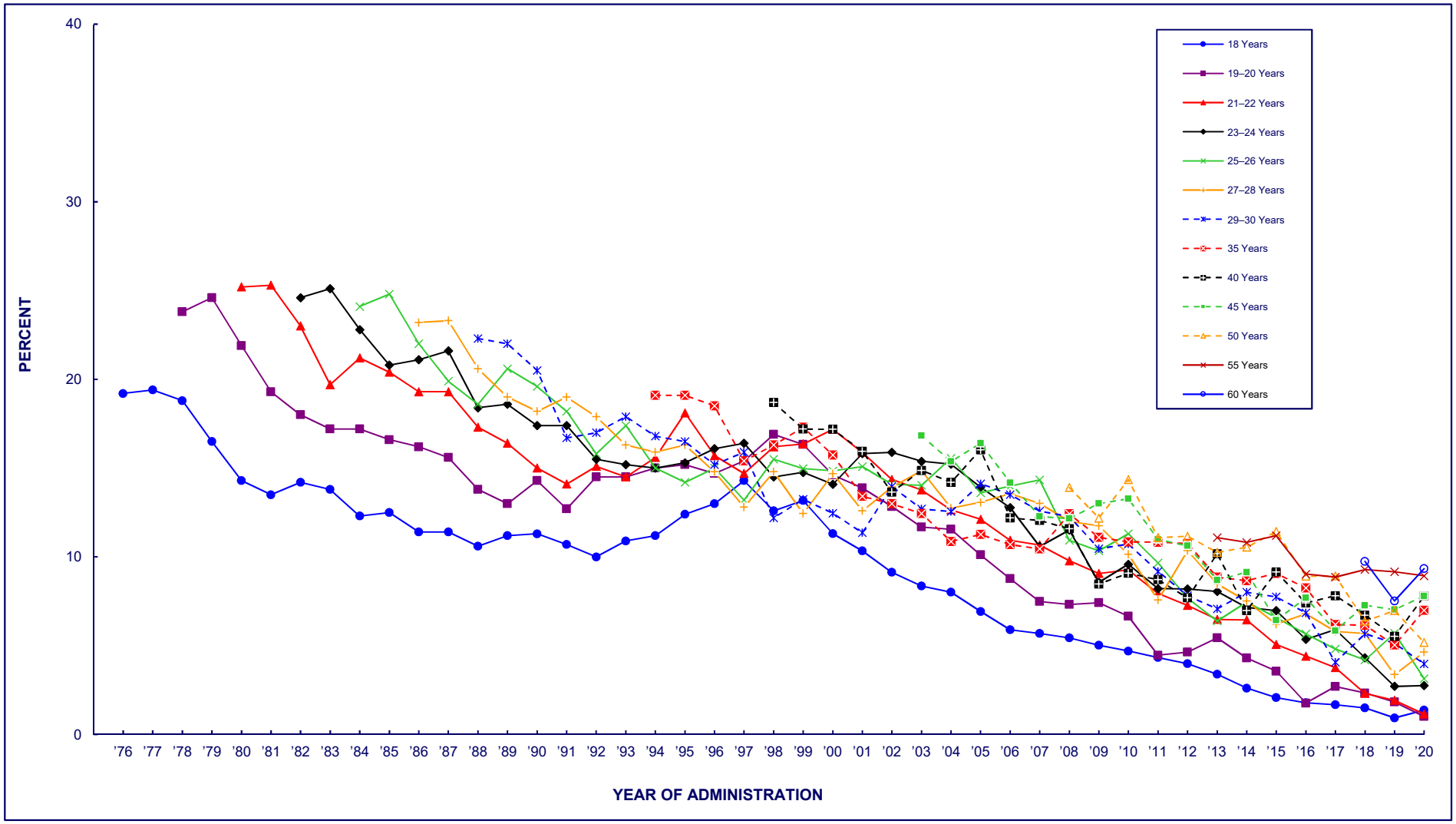
[1]For the estimate of Daily Cigarettes in 2020, there was a significant difference (p<.01) among those age 45 between the typical mail condition (12.4%) and the new web-push condition (5.6%) of survey administration.

[2]For the estimate of Daily Cigarettes in 2020, there was a significant difference (p<.01) among those age 60 between the typical mail condition (14.3%) and the new web-push condition (8.0%) of survey administration.

FIGURE 5-19c

CIGARETTES

Trends in 30-Day Prevalence of Smoking a Half Pack or More per Day among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-19c (cont.)
CIGARETTES
Trends in 30-Day Prevalence of Smoking a Half Pack or More per Day among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976	19.2												
1977	19.4												
1978	18.8	23.8											
1979	16.5	24.6											
1980	14.3	21.9	25.2										
1981	13.5	19.3	25.3										
1982	14.2	18.0	23.0	24.6									
1983	13.8	17.2	19.7	25.1									
1984	12.3	17.2	21.2	22.8	24.1								
1985	12.5	16.6	20.4	20.8	24.8								
1986	11.4	16.2	19.3	21.1	22.0	23.2							
1987	11.4	15.6	19.3	21.6	19.9	23.3							
1988	10.6	13.8	17.3	18.4	18.6	20.6	22.3						
1989	11.2	13.0	16.4	18.6	20.6	19.0	22.0						
1990	11.3	14.3	15.0	17.4	19.6	18.2	20.5						
1991	10.7	12.7	14.1	17.4	18.2	19.0	16.7						
1992	10.0	14.5	15.1	15.5	15.8	17.9	17.0						
1993	10.9	14.5	14.5	15.2	17.4	16.3	17.9						
1994	11.2	15.0	15.6	15.0	15.0	15.9	16.8	19.1					
1995	12.4	15.2	18.1	15.3	14.2	16.3	16.5	19.1					
1996	13.0	14.7	15.7	16.1	15.0	14.8	15.2	18.5					
1997	14.3	15.4	14.7	16.4	13.2	12.8	15.9	15.4					
1998	12.6	16.9	16.2	14.5	15.5	14.8	12.2	16.3	18.7				
1999	13.2	16.3	16.4	14.8	15.0	12.4	13.2	17.3	17.2				
2000	11.3	14.6	17.2	14.1	14.8	14.7	12.5	15.7	17.2				
2001	10.3	13.9	15.9	15.8	15.1	12.6	11.4	13.4	15.9				
2002	9.1	12.8	14.4	15.9	14.1	13.9	14.0	13.0	13.6				
2003	8.4	11.7	13.8	15.4	14.0	14.8	12.7	12.4	14.9	16.8			
2004	8.0	11.6	12.7	15.2	15.6	12.8	12.5	10.9	14.2	15.4			
2005	6.9	10.1	12.1	13.9	13.6	13.1	14.1	11.3	16.0	16.4			
2006	5.9	8.8	10.9	12.8	14.0	13.6	13.5	10.7	12.2	14.2			
2007	5.7	7.5	10.7	10.6	14.3	13.0	12.6	10.5	12.1	12.3			
2008	5.4	7.3	9.8	11.5	10.9	12.0	12.3	12.4	11.6	12.2	13.9		
2009	5.0	7.4	9.1	8.6	10.3	11.8	10.5	11.1	8.5	13.0	12.2		
2010	4.7	6.7	9.3	9.6	11.3	10.1	10.7	10.8	9.1	13.3	14.4		
2011	4.3	4.5	7.9	8.2	9.7	7.6	9.2	10.8	8.7	11.0	11.1		
2012	4.0	4.6	7.3	8.2	7.7	10.4	7.8	10.8	7.7	10.6	11.2		
2013	3.4	5.4	6.5	8.1	6.4	8.5	7.1	8.9	10.2	8.7	10.3	11.1	
2014	2.6	4.3	6.4	7.1	7.5	7.5	8.0	8.7	7.0	9.1	10.5	10.8	
2015	2.1	3.6	5.1	7.0	6.6	6.2	7.7	9.1	9.2	6.4	11.4	11.2	
2016	1.8	1.8	4.4	5.4	5.7	6.8	6.9	8.3	7.4	7.7	8.9	9.0	
2017	1.7	2.7	3.8	5.9	4.8	5.8	4.1	6.2	7.8	5.8	8.9	8.9	
2018	1.5	2.3	2.3	4.3	4.2	5.7	5.7	6.2	6.7	7.3	6.4	9.3	9.7
2019	0.9	1.8	1.9	2.7	5.7	3.4	5.1	5.0	5.5	7.0	7.0	9.2	7.5
2020 [1]	1.4	1.0	1.2	2.8	3.1	4.6	4.0	7.0	7.8	7.8	5.2	8.9	9.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

[1]For the estimate of Smoking Half Pack or More per Day in 2020, there was a significant difference (p<.01) among those age 45 between the typical mail condition (10.3%) and the new web-push condition (4.7%) of survey administration.

FIGURE 5-20
VAPING MARIJUANA
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

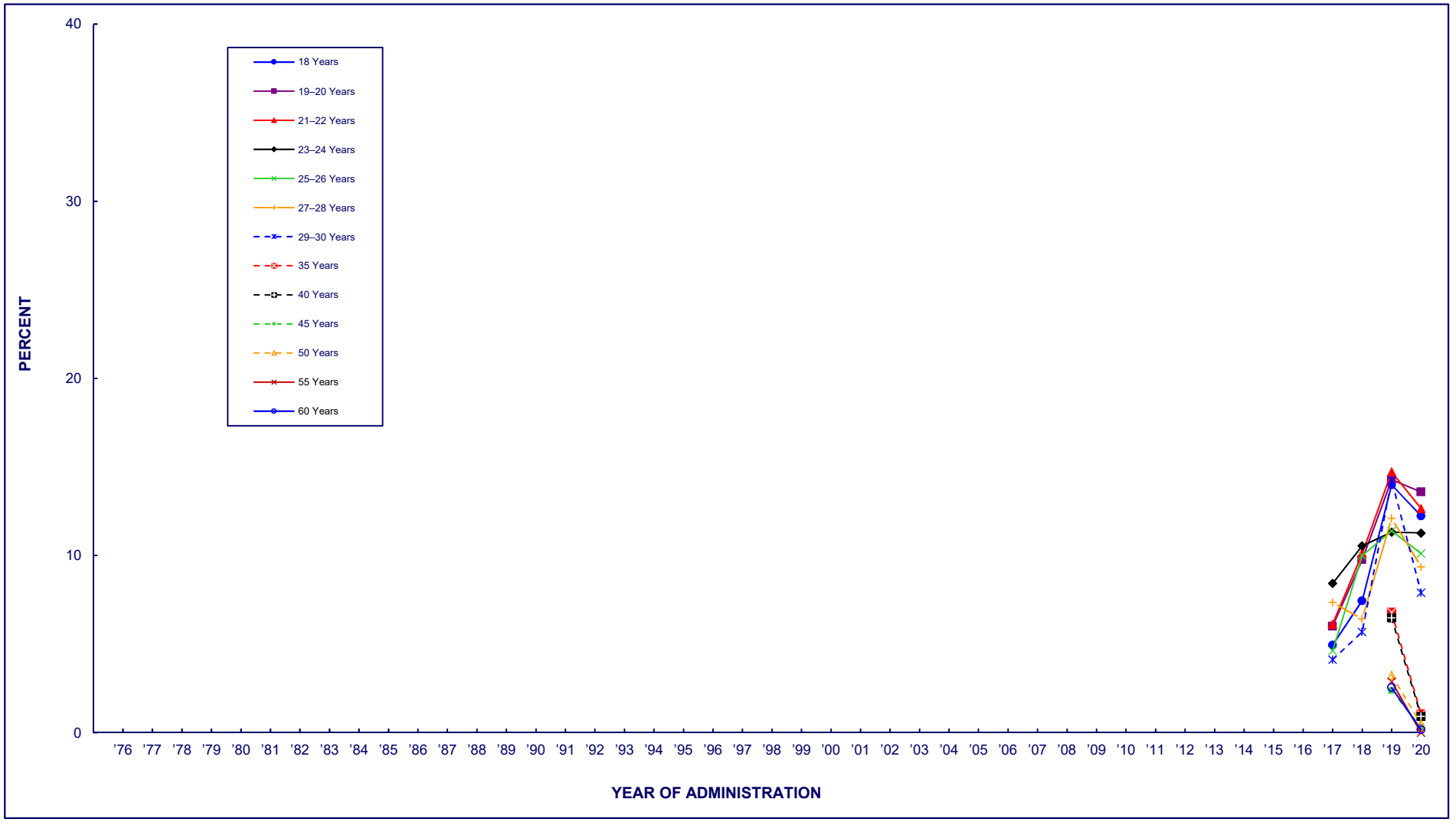


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FIGURE 5-20 (cont.)
VAPING MARIJUANA
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976													
1977													
1978													
1979													
1980													
1981													
1982													
1983													
1984													
1985													
1986													
1987													
1988													
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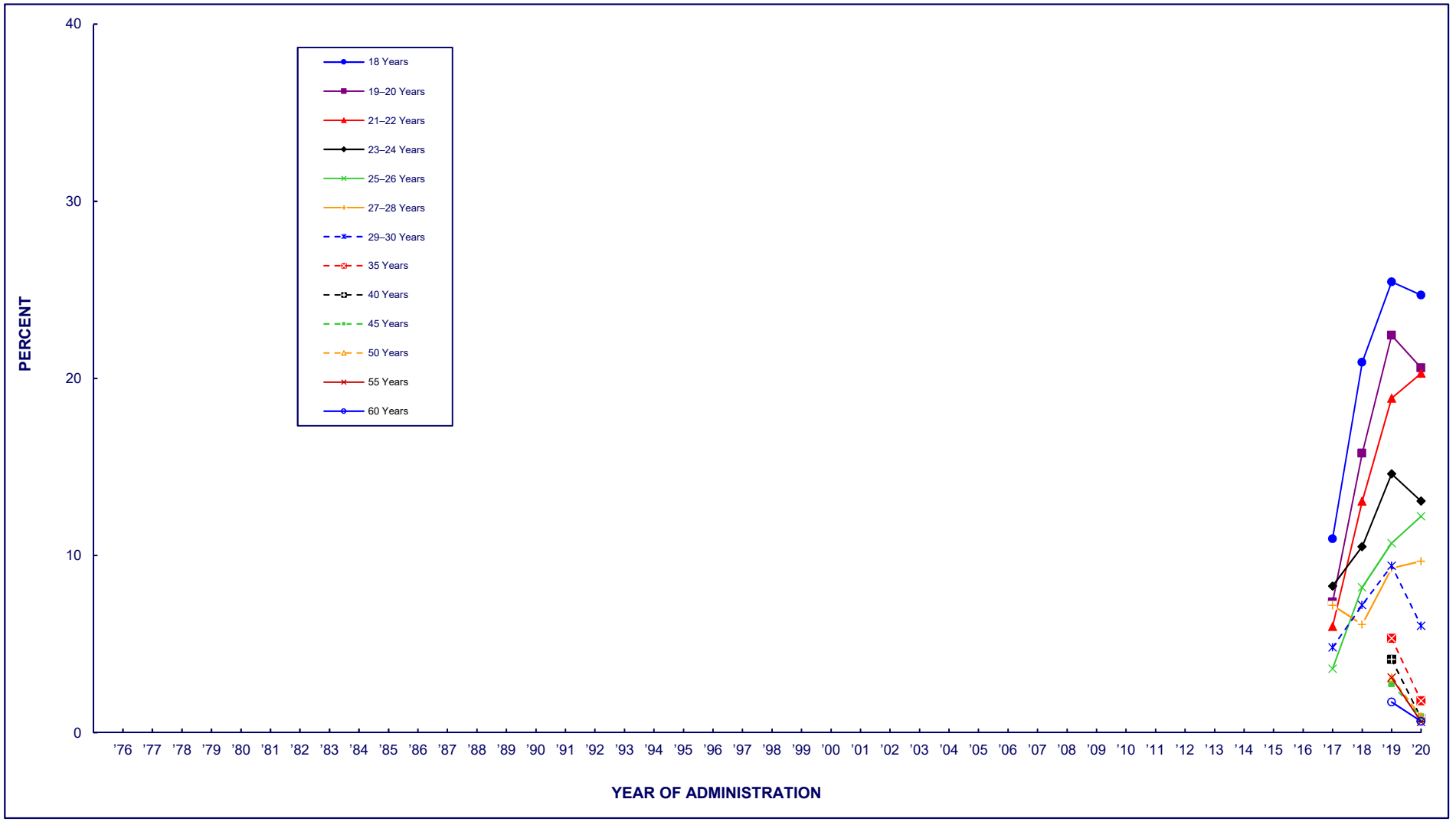
2011													
2012													
2013													
2014													
2015													
2016													
2017	4.9	6.0	6.1	8.4	4.6	7.4	4.1						
2018	7.5	9.8	10.1	10.5	10.0	6.4	5.7						
2019	14.0	14.3	14.7	11.3	11.4	12.1	14.3	6.8	6.5	2.4	3.2	2.9	2.5
2020	12.2	13.6	12.6	11.3	10.1	9.4	7.9	1.1	0.9	0.3	0.5	*	0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

FIGURE 5-21
VAPING NICOTINE
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group



(Figure continued on next page.)

FIGURE 5-21 (cont.)
VAPING NICOTINE
Trends in 30-Day Prevalence
among Respondents of Modal Ages 18 through 60, by Age Group

Year	Age 18	Ages 19–20	Ages 21–22	Ages 23–24	Ages 25–26	Ages 27–28	Ages 29–30	Age 35	Age 40	Age 45	Age 50	Age 55	Age 60
1976													
1977													
1978													
1979													
1980													
1981													
1982													
1983													
1984													
1985													
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2011													
2012													
2013													
2014													
2015													
2016													
2017	11.0	7.4	6.0	8.3	3.6	7.2	4.8						
2018	20.9	15.8	13.1	10.5	8.2	6.1	7.2						
2019	25.5	22.4	18.9	14.6	10.7	9.3	9.4	5.3	4.1	2.7	3.1	3.1	1.7
2020	24.7	20.6	20.3	13.1	12.2	9.7	6.0	1.8	0.8	0.9	0.9	0.6	0.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available.

Chapter 6

ATTITUDES AND BELIEFS ABOUT DRUGS AMONG YOUNG ADULTS

One of the most important theoretical contributions of MTF has been to demonstrate the extent to which attitudes and beliefs about drugs can help explain the use of drugs. Earlier volumes in this monograph series, as well as other publications from the study, have demonstrated that shifts in certain attitudes and beliefs—in particular the degree of risk of harm perceived to be associated with use of a particular drug—are important in explaining changes in actual drug-using behavior. Indeed, on a number of occasions in these volumes and elsewhere we have accurately predicted such changes in use by using perceived risk as a *leading indicator of use.*[1] In this chapter, we review trends in these attitudes and beliefs held by young adults since 1980 through 2020.

PERCEIVED HARMFULNESS OF DRUGS

Figures 6-1 through 6-25 present three separate trend lines for four-year age strata: Respondents who are one to four years beyond high school (modal ages 19-22), five to eight years beyond high school (modal ages 23-26), and nine to twelve years beyond high school (modal ages 27-30). For comparison purposes, data are also included for high school 12th graders, listed as modal age 18. Data for attitudes and beliefs in 2020 are not presented for 12th graders due to insufficient sample sizes; this is because school-based data collections were shut down in March 2020 due to the COVID-19 pandemic before a full sample of 12th graders was obtained and these items are on only one of the six questionnaire forms. Nonetheless, 12th grade data prior to 2020 is still included for trend comparison purposes. Figures 6-1 to 6-3 present trends in the percentages of young adults aged 18 to 30 who perceive a "great risk" of harm (physically or in other ways) associated with three different levels of marijuana use—trying it once or twice (experimental), using it occasionally, and using it regularly.[2] Subsequent figures do the same for selected levels of use of various other licit and illicit drugs. Table 6-1 provides the tabular information underlying the figures and includes significance tests of the one-year trends between 2019 and 2020.

For most of the life of the study, these questions were contained in one questionnaire form only, limiting the numbers of follow-up cases. Accordingly, we have used the four-year age bands to increase the available sample sizes to about 250-600 weighted cases per year for each age band, thereby improving the reliability of the estimates. (The numbers of weighted cases are given at the end of Table 6-1. The actual numbers of respondents are somewhat larger.) Still, these are

[1] See also: Bachman, J. G., Johnston, L. D., O'Malley, P. M., & Humphrey, R. H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior, 29,* 92–112; Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior, 31,* 173–184; Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1998). Explaining recent increases in students' marijuana use: Impacts of perceived risks and disapproval, 1976 through 1996. *American Journal of Public Health, 88,* 887–892; Johnston, L. D. (1981). Characteristics of the daily marijuana user. In R. de Silva, R. L. DuPont, & G. K. Russell (Eds.), *Treating the marijuana-dependent person* (pp. 12–15). New York: The American Council on Marijuana; Johnston, L. D. (1985). The etiology and prevention of substance use: What can we learn from recent historical changes? In C. L. Jones & R. J. Battjes (Eds.), *Etiology of drug abuse: Implications for prevention* (NIDA Research Monograph No. 56, DHHS Publication No. ADM 85 1335, pp. 155–177). Rockville, MD: National Institute on Drug Abuse; Keyes, K. M., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., Bachman, J. G., Li, G., & Hasin, D. (2011).The social norms of birth cohorts and adolescent marijuana use in the United States, 1976-2007. *Addiction, 106*(10), 1790-1800.

[2] Beginning in 2018, the wording of this question was changed from "smoke marijuana" to "use marijuana."

relatively small sample sizes for young adults compared to those available regarding attitudes for 8th, 10th, and 12th graders (prior to 2020), and thus the change estimates are relatively less stable.

Beginning with 2012 we expanded the numbers of forms from which these data are drawn; this increased the sample sizes from that point forward, thus improving the reliability of both the point estimates and the trend estimates. Because the questions are contained in different numbers of forms for the different drugs, the sample sizes vary between drugs, as is noted in the tables. In general, for each question, we include data from all available forms.

Because of the nature of the MTF design, trend data are available for a longer period for 19-22 year olds (since 1980) than for 23-26 year olds (since 1984) or 27-30 year olds (since 1988). Also displayed in Table 6-1 are comparison data for 12th graders, shown here as 18 year olds, from 1980 through 2019. (See also Table 8-3 in *Volume I* for the longer-term trends in 12th graders' levels of perceived risk.) Questions about these attitudes and beliefs are not included in the questionnaires for respondents over age 30 due to the length limitations imposed by using a single questionnaire form for respondents at ages 35 and older.

As noted earlier in this volume, for 2018 and 2019 data collections of 19-30 year olds, MTF randomly assigned half to receive the typical mail survey protocol and half to be pushed to web-based surveys (see Chapter 3). In comparing the attitudes between the two conditions, there were very few significant differences (about 3% in 2018 and 2% in 2019 of the over 500 comparisons), with almost no overlap across the two years in instances of significant differences across drugs and age groups, and thus we report combined estimates as weighted averages in both 2018 and 2019. Exceptions (i.e., when there are significant differences between the two conditions) are noted in Tables 6-1 and 6-2. As discussed in Chapter 3, all young adults received web-push survey procedures in 2020. In addition to conducting significance tests of one-year trends (2019-2020) in the full young adult sample, we provided supplemental tests of the one-year trends, comparing the web-push sample in 2019 to the full (all web-push) sample in 2020; these supplemental findings are listed as footnotes in Tables 6-1 and 6-2 and as footnotes in the text when appropriate (only when there were differences in significance tests). The most common outcome when considering these potential differences was consistency in significant tests; when there was a difference, in all cases, it was a difference of magnitude, not direction.

- Table 6-1 and Figures 6-1 to 6-25 illustrate considerable differences in the degree of risk of harm young adults have associated with various drugs. In general, the results closely have paralleled the distinctions in degree of risk across various drugs made by 12th graders.

- ***Marijuana*** was seen as the least risky of the illicit drugs,[3] although sharp distinctions were made between different levels of marijuana use (Table 6-1, Figures 6-1 through 6-3). In 2020, experimental use of marijuana (i.e., trying it once or twice) was perceived as being of great risk by only 5-8% of the young adults ages 19-30, whereas regular use was perceived to carry great risk by a considerably higher percentage (19-22%). Since 2006, there have been very substantial declines in perceived risk of regular marijuana use; in 2006, 55-56% of the young adult age groups saw great risk, and by 2020, 19-22% did so. These substantial declines suggest a possible period effect that has affected all age groups,

[3] See Chapter 3 for discussion of legal status of marijuana and our terminology.

indicative of a wide-ranging cultural change towards marijuana use. This change likely instigated and was further reinforced by increasing discussion about marijuana and the enactment of legislation at the state level liberalizing marijuana laws, including for medical use and for recreational use by adults. While actual law changes are specific to individual states, the discussions are prominent nationwide, and can affect perceived risk across the nation. Levels of *perceived risk of regular marijuana use* in 2019 and 2020 were *the lowest observed* since each of the young adult age groups were first included in the study, going back to 1980 in the case of 19-22 year olds. In 2020, the percent who report great risk associated with regular marijuana use decreased nonsignificantly for 19-22 year olds (to 21%) and 23-26 year olds (to 19%), and was level for 27-30 year olds (at 22%). And likely not coincidentally, the prevalence of daily marijuana use in 2020 was at a new high among young adults at 9.8% (as discussed in Chapter 5).

- Regarding longer-term trends, in the mid-1980s and early 1990s, fewer of the older age groups attached great risk to regular use of ***marijuana*** than did the younger respondents (Figure 6-3). Indeed, there was a regular negative ordinal relationship between age and perceived risk for some years after 1980, when the first such comparisons were available. Although at first this looked like an age effect, the MTF design allowed us to recognize it as a cohort effect; the younger cohorts initially perceived marijuana as more dangerous than the older cohorts did and persisted in such beliefs as they grew older. Newer cohorts, however, showed lower levels of perceived risk that they then carried up the age spectrum. As a result, in the past few years, age differences have been slight.

  The decline in perceived risk in regular use that began in the 1990s was greater in the younger age bands and least among the 27-30 year olds. We believe that much of the eventual decline in perceived risk in the older age bands resulted directly from replacement of earlier cohorts by later, less concerned ones. The credibility of this view is strengthened by the 1993-1995 reversal of the relationship between age and perceived risk of regular use. This reversal is consistent with an underlying cohort effect and could not simply reflect a consistent age-related change in these attitudes. The decline in perceived risk of regular marijuana use ended in a somewhat staggered fashion—among 12th graders in 1999, among 19-22 year olds in 2001, among 23-26 year olds in 2002, and among 27-30 year olds in 2004. This was also indicative of a cohort effect playing out in these attitudes. In 2007 all four age strata showed declines of three to four percentage points in perceived risk of regular marijuana use; although no one of these declines was statistically significant taken alone, the consistency across all four groups suggests that the shift was real. Since then the declines have continued, though somewhat erratically; but all young adult age groups showed substantial declines between 2006 and 2020 (and 12th graders through 2019) in perceived risk of regular marijuana use, suggesting a possible period effect. Indeed, the age bands 18, 23-26, and 27-30 all showed significant one-year declines in perceived risk of regular marijuana use from 2014 to 2015, with continuing (but nonsignificant) declines for all age groups in 2016, and continuing significant declines in the older two age groups and nonsignificant declines in the two younger age groups in 2017. In 2018, there was a significant decline in the 19-22 age group, a nonsignificant decline for the 23-26 age group, and essentially no change for the 27-30 age group. In 2019, it was level among 19-26 year olds and declined significantly for the 27-30 age group (reaching an all-time low for this

age-group). As mentioned above, it declined nonsignificantly among 19-22 and 23-26 year olds, reaching all-time lows for these two age groups, and was level among 27-30 year olds. *Thus, for all age-groups, all-time lows over the past four decades were reached in 2019 or 2020.*

- In 2020, we added new questions to the young adult surveys regarding perceived risk of ***vaping marijuana***. For the three young adult age groups respectively, 15%, 14% and 20% perceived vaping marijuana *occasionally* as being of great risk of harm, and 24%, 24%, and 31% perceived great risk of harm of *regular* marijuana vaping. Thus, young adults perceive vaping marijuana occasionally as being riskier (14-20% in 2020) than using marijuana occasionally in general (6.5-9.8% in 2020), and this was also true regarding regular marijuana vaping (24-31%) and regular marijuana use in general (19-22% in 2020).

- Young adults (ages 19-30) viewed experimental use of any of the ***other illicit drugs*** as distinctly riskier than the experimental use of marijuana (which was at 5% to 8% in 2020). For example, in approximate rank ordering of various substances, about 28-39% of young adults thought trying ***sedatives (barbiturates)*** involved great risk (perceived risk of tranquilizers is not asked, but likely would rank low as well); the corresponding percentages were 28-36% for ***MDMA (ecstasy and Molly),*** 30-39% for ***amphetamines,*** 28-37% for ***LSD,*** 48-54% for ***cocaine***, 60-62% for ***narcotics other than heroin,*** and 71-79% for ***heroin*** (Table 6-1). Note that two classes of prescription drugs, sedatives and amphetamines, have among the lowest levels of perceived risk in this set.

- Items about perceived risk of ***synthetic marijuana*** use were added to the questionnaires in 2012 (Figures 6-4 and 6-5). These drugs are sold over the counter in small packets containing plant material that has been sprayed with any number of chemicals with chemical structures similar to cannabinoids. The percent seeing great risk in trying synthetic marijuana in the three young adult age bands were 29-31% in 2012 and 38-47% in 2020, reflecting a clear increase in perceived risk in all four age groups over that interval. Following increases of 3 to 8 percentage points in perceived risk for all three young adult age groups between 2015 and 2016, it leveled or changed nonsignificantly for each of these age groups between 2016 and 2019. In 2020, it decreased a significant 5.9 percentage points for 19-22 year olds to 38%, and increased nonsignificantly for both 23-26 and 27-30 year olds to 47%. The 2019 (for 19-22 year olds) and 2020 (for 23-26 year olds) estimates are the highest levels since 2012. Correspondingly, as discussed in Chapter 5, use of synthetic marijuana has fallen precipitously since 2012 as perceived risk has risen. By way of contrast, among 12th graders perceived risk has been declining since 2016 for both experimental and occasional use of synthetic marijuana.

- Perceived risk of experimental use of ***LSD*** continued a nonsignificant decline in 2020 for 19-26 year olds, and showed a nonsignificant increase for 27-30 year olds; proportions seeing great risk of harm in experimental use were 28%, 31%, and 37%, respectively. Across the years, the older age groups have been more likely to see LSD as dangerous (Figures 6-6 and 6-7). These age distinctions became sharper through about 2001 for experimental use, as perceived risk declined more in the younger age groups, indicating some important cohort changes in these attitudes, quite likely as a result of generational

forgetting of the dangers of LSD. Generational forgetting is a phenomenon wherein younger replacement cohorts no longer carried the beliefs—nor had the direct or vicarious experience upon which those beliefs were based—that the older cohorts had at that age. (The implications of generational forgetting for prevention are discussed in the last section of this chapter.) The distinctions continued to grow for regular use of LSD through 2015 as perceived risk at age 18 continued a long-term uneven decline. From 2015 through 2020, perceived risk started to decline unevenly for the young adults too, reducing the age gap in perceived risk.

- Perceived risk of *experimenting* with ***MDMA (ecstasy*** and, more recently, ***Molly)*** declined in all young adult age groups in 2020 (significantly so for the 19-22 year olds), reaching, 28%, 29%, and 36%, respectively, in the three age groups (Figure 6-11). These questions were introduced in the follow-up surveys in 1989, but were not asked of 12th graders until 1997 (due to concerns about introducing the secondary school students to a drug with such an alluring name, "ecstasy," which it was initially commonly called). At the beginning of the 1990s, all young adult age groups viewed ecstasy as a fairly dangerous drug, even for experimentation. But, again, the different age bands showed diverging trends during the 1990s, with the oldest two age bands continuing to see ecstasy as quite dangerous, but the 19-22 year olds (and very likely the 12th graders, for whom we did not have data until 1997) coming to see it as less so. In 2000, 38% of 12th graders saw great risk in trying ecstasy versus 49% of 27-30 year olds; in 2001, the corresponding percentages were 46% and 54%. In fact, three of the four age groups showed appreciable increases in perceived risk of ecstasy use in 2001, which led us to predict a decline in use. The increase in perceived risk continued in 2002 in the two youngest age strata, and their use of ecstasy did, indeed, begin to decline, and decline sharply (see chapter 5). Perceived risk of using once or twice continued to rise among 18 year olds, whose levels exceeded the levels seen in the other age bands from 2004 through 2009. From about 2010 through 2016, perceived risk of trying MDMA (ecstasy, Molly) generally converged among the age groups, showing some uneven change for young adults and a leveling for 12th graders; from 2016 through 2020, it declined for young adults and remained fairly level for 18 year olds (through 2019). In 2020, perceived risk of trying MDMA ranged from 28% to 36% for the young adult age groups, constituting new all-time lows (Figure 6-11). It is noteworthy that the perceived risk of using MDMA occasionally has also been in decline in the past few years among young adults (Figure 6-12), with all three young adult age groups showing declines in 2020 to 47%, 45%, and 49%, respectively (the decline was significant for 19-22 year olds); these 2020 percentages were all-time lows (since 2001) (perceived risk of occasional use is not asked of 12th graders).

- Perceived risk of ***salvia*** use (Table 6-1) was included for the first time in 2012 in the young adult questionnaires; the percent seeing great risk in trying salvia ranged from 19% to 23% among the young adults in 2012 and from 19% to 28% in 2020. Among 12th graders, however, in the same period there was a decline in perceived risk from 14% in 2012 for experimental use to 10% in 2019 (see Volume I[4]).

[4] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

- Recent years showed little systematic change in perceived risk of ***cocaine*** use among young adults and not a great deal of difference in this belief among the different age groups (Figures 6-8 through 6-10). In 2020, perceived risk of *experimental use* decreased nonsignificantly for 19-22,[5] decreased significantly for 23-26 year olds, and increased nonsignificantly for 27-30 year olds; among the three groups in 2020, it ranged from 45% to 54%. Regarding previous trends, there was a sharp increase in perceived risk for experimental use in all age strata after 1986: it also occurred for *occasional* and *regular* use, with the increase for regular use starting as early as 1980 for the two older age groups on whom we first had data in 1980. Later there was some decline in perceived risk of trying cocaine and occasional use began among 19-22 year olds after 1994, among 23-26 year olds after 1999, and among 27-30 year olds after 2001, suggesting a cohort effect in this belief (Figures 6-8 and 6-9). Young adults generally reported somewhat higher perceived risk with respect to regular cocaine use than did 12th graders (Figure 6-10). The age differences were smaller for occasional and experimental use. Since the early 1990s, perceived risk of regular use of cocaine gradually declined among 12th graders, likely due to generational forgetting of the dangers of this drug, and resulted in an increasing gap between them and the older age groups (Figure 6-10).

  To illustrate cohort effects in the trends, we note that between 1980 and 1986, among 12th graders and the young adult age groups, the danger associated with using cocaine on a regular basis grew considerably—by 13 and 17 percentage points, respectively. Interestingly, these changed beliefs did not translate into changed behavior until the perceived risk associated with experimental and occasional use began to rise sharply after 1986. When these two measures rose, a sharp decline in actual use occurred. We hypothesized that respondents saw only these lower levels of use as relevant to them and, therefore, saw themselves as vulnerable only to the dangers of such use. (No one starts out planning to be a heavy user; further, in the early 1980s, cocaine was not believed to be addictive among many.) Based on this hypothesis, we included the additional question about occasional use in 1986, just in time to capture a sharp increase in perceived risk later that year. This increase occurred largely in response to the growing media frenzy about cocaine—and crack cocaine, in particular—and to the widely publicized, cocaine-related deaths of several public figures (most notably Len Bias, a collegiate basketball star and a top National Basketball Association draft pick). After stabilizing for a few years, perceived risk began to fall off around 1992 among 12th graders, but not among the older age groups, again suggesting that lasting cohort differences were emerging. Now, 35 years later, none of the young adult age groups has had much exposure to the cocaine epidemic of the mid-1980s, which likely explains why there no longer is much age-related difference in the level of perceived risk, except with regards to regular use, for which 12th graders have been showing a declining level of perceived risk, unlike any of the young adult strata (Figure 6-10). This likely reflects a generational forgetting of the dangers of cocaine by cohorts that are further and further from the peak of the cocaine epidemic in the mid-1980s.

- Perceived harmfulness of ***crack*** use has tended to be very high and was lowest among 12th graders for many years through 2012 (Table 6-1); we no longer ask these questions of young adults. High school seniors have been considerably less likely than any of the older

[5] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was significant (see Table 6-1 footnote 45).

age groups to view occasional and regular use of crack cocaine as dangerous. Trend data (available since 1987) on the risks perceived to be associated with crack use showed increases in 1987-1990 for all age groups, followed by relatively little change in the older age strata. During the 1990s, twelfth graders showed decreases in the perceived risk of experimental use of crack—perhaps reflecting the onset of generational forgetting of its dangers—leaving them as perceiving considerably less risk than the older groups. The young adult age groups showed a staggered decline in this measure, with 19-22 year olds showing a decline after 1994, 23-26 year olds since 1996, and 27-30 year olds after 2001. As a result, the several ages differed more in their levels of perceived risk of crack use, until declines in the older age groups after about 2002. Given this lack of historical or age variation, questions about perceived risk of crack use were dropped from the young adult questionnaires in 2012 to make room for such questions about other drugs.

- Perceived risk of trying ***amphetamines*** (Figure 6-16) continued to show uneven change across the four age groups in 2020, decreasing nonsignificantly for 19-22 year olds (to 31%), increasing nonsignificantly for 23-26 year olds (to 30%), and increasing significantly for 27-30 year olds (to 39%). Regarding earlier trends, perceived risk increased in all four age strata very gradually from 1980, when first measured, through 2010, with little difference among them. In 2011 it dropped in all strata and then held fairly level thereafter through 2019. (Note that in 2011, we changed examples of amphetamines from "uppers, pep pills, bennies, speed" to "uppers, speed, Adderall, Ritalin, etc.", which appears to account for the change in 2011.) Across the years, there was more difference among the age groups with regard to the risk attached to *regular* amphetamine use (Figure 6-17), with the older two strata generally seeing greater risk than the younger two strata, and especially the 12th graders. The younger two strata showed an increase in perceived risk during the 1980s and then some fallback in the early 1990s, before stabilizing. The sharp decline observed for experimental use after 2010 was also seen for regular use from 2009 to 2011 among 12th graders and from 2011 through 2012 among all of the young adult strata; since then, perceived risk of regular use has shown uneven change for all four age groups through 2019/2020.

- Perceived risk questions for ***Adderall*** (6th page of Table 6-1) were added to the young adult questionnaires for the first time in 2012. They showed that perceived risk of using once or twice ranged from 29% to 30% in the three young adult age bands in 2012. It decreased and showed an uneven modest change over the years, with few consistent differences across the range bands. It decreased nonsignificantly in 2020 among all young adult groups; the range in 2020 was 22% to 30%.

- Measures of perceived risk of ***crystal methamphetamine (ice)*** use are no longer included for young adults (Table 6-1). These measures were introduced in 1990, and the results showed what might be an important reason for its lack of rapid spread. More than half of all 12th graders and young adults perceived it as quite dangerous even to try, perhaps because it was likened to crack in many media accounts. (Both drugs come in crystal form, both are typically burned and the fumes inhaled, both are stimulants, and both can produce a strong dependence.) There was rather little age-related difference in perceived risk associated with use of crystal methamphetamine in 1990 and 1991, although the two

youngest age groups were somewhat higher. But as perceived risk fell considerably among 12th graders (and eventually among 19-22 year olds) and held steady or rose in the oldest two age groups, an age-related difference emerged. Twelfth graders have fairly consistently had the lowest level of perceived risk since 2002. Since about 2003 or 2004, perceived risk has risen some among all of the age strata, narrowing the age-related differences that had emerged for a few years. In 2011 perceived risk of trying this drug stood at 67% among 12th graders and at 73-75% in all of the older strata. Given this lack of variation in recent years and low levels of actual use, these questions were discontinued in the young adult (but not in the secondary school) surveys in 2012 to make room for such questions about other drugs.

- In 2012 perceived risk questions about the use of ***bath salts***, over-the-counter synthetic stimulants, were added to the questionnaires (Table 6-1). That year fairly high proportions of the young adults saw great risk of harm in even trying bath salts (45-49%), but considerably fewer of the 18 year olds did (33%). Perceived risk has increased dramatically for bath salts in all four age strata, with increases ranging from 18 percentage points among 12th graders to 19 to 28 percentage points in the three young adult age strata. In 2018 even trying bath salts once or twice was seen as dangerous by between 63% and 77% in the young adult age strata, very high levels. (Some of this shift occurred because fewer respondents chose the "Can't say, drug unfamiliar" option, suggesting that more of them were familiar with the drug and the risks associated with it.) Given the consistently high levels of perceived risk, as well as declines in use (Chapter 5), these questions were discontinued in all age groups in 2019 to make room for such questions about other drugs.

- Perceived risk of *experimental* use of ***heroin*** (Figure 6-15) has shown long-term gradual increases for all age groups, with 2020 percentages at 70%, 79%, and 79%, respectively, for the three young adult age groups. Across the years, young adults have consistently been more cautious than 12th graders about ***heroin*** use, suggesting some age effect (Figures 6-13 through 6-15). In general, there has been relatively little change over the years in the proportions of all age groups seeing *regular* heroin use as dangerous, with the great majority of each group (over 80%) consistently holding this viewpoint.[6] (Perceived risk for regular heroin use peaked in the young adult age groups at about 2004, opening a growing gap with the 12th graders, after which it leveled.) However, with regard to perceived risk of experimental use of heroin, there was a long-term gradual rise in all age strata from the mid-1980s through 2019/2020, with it showing some leveling since 2015 for 12th graders (Figure 6-13). From 1980 to 1986 there was a downward shift among 12th graders in the proportion seeing great risk associated with trying heroin (a trend that began in 1975 noted in *Volume I*) and some decline among 19-22 year olds. Following this decline, young adults showed a gradually increasing caution about heroin use in the latter half of the 1980s—possibly due to heroin injection being associated with the spread of HIV—followed by a leveling through most of the 1990s (note that young adult data does not extend back equally far for all young adult age groups). In 2019, as in all previous years, more young adults than 12th graders saw experimental and occasional heroin use as risky (Figures 6-13 and 6-

[6] As we note in Volume 1, in 2019, 81% of 12th grade students perceived great risk in regular heroin use, which is a lower bound for the range of 80% to 90% where it has fluctuated throughout the study.

14); and this difference has grown some since the early 1990s with regard to regular use, suggesting some generational forgetting of the dangers by the 12th graders (Figure 6-15).

It is noteworthy for public health purposes that in 1996 and 1997, young adults' perceived risk of experimental use of heroin increased some, as happened among 12th graders (as well as among 8th and 10th graders). These various trends could reflect, in chronological order, (a) the lesser attention paid to heroin by the media during the late 1970s and early 1980s as cocaine took center stage; (b) the subsequent great increase in attention paid to intravenous heroin use in the latter half of the 1980s due to the recognition of its importance in the spread of HIV/AIDS; (c) the emergence in the 1990s of heroin so pure that people no longer needed to use a needle to administer it; and (d) the subsequent increased attention given to heroin by the media (partly as a result of some overdose deaths by public figures and partly prompted by the emergence of "heroin chic" in the design industry), as well as through an anti-heroin media campaign launched by the Partnership for a Drug-Free America in June 1996.

- Perceived risk questions about ***narcotics other than heroin*** (without medical supervision) were first asked of the young adults in 2012; between 43% and 47% of the three age groups saw great risk of harm in experimenting with such drugs (Table 6-1). They showed little systematic change through 2017 (with none of the one-year changes being significant). In 2018, perceived risk of experimental use increased nonsignificantly for the three young adult age groups (by 6 to 8 percentage points), and again increased nonsignificantly in 2019 for the these age groups (by 3 to 7 percentage points), resulting in the new highs in 2019 (ranging from 56% to 61%). In 2020, it decreased nonsignificantly for 19-22 year olds and increased nonsignificantly for 23-30 year olds. Thus, historic highs over the past decade were in either 2019 or 2020 for young adults. In contrast, it has changed little for 12th graders (ranging from 42% to 45% in 2013-2019). Many more young adults saw regular use as having great risk of harm with rather little systematic change from 2012 through 2018 (between 78% and 80% in 2018). However, in 2019, perceived risk of regular use increased for all young adult age groups to historic highs since 2012 (by 4 to 7 percentage points): it increased nonsignificantly to 82% among 19-22 year olds, significantly to 88% for 23-26 year olds, and significantly to 86% among 27-30 year olds. In 2020, it decreased nonsignificantly among 19-22 year olds to 79%, decreased nonsignificantly among 23-26 year olds to 85%, and increased nonsignificantly among 27-30 year olds to 86%. Thus, historic highs were reached over the past decade for perceived risk of regular use in either 2019 or 2020 among young adults. In contrast, it has been fairly level among 12th graders (ranging from 71% to 76% from 2000 through 2019). As with heroin use discussed above, young adults have tended to see use of narcotics other than heroin as more risky than have 12th graders.

- Perceived risk for trying ***barbiturates (sedatives)*** has been quite steady since 1980, with little consistent differences among the age strata, although the 23- to 30- year-olds did perceive higher risk from about 1995-2006 than did the younger two age strata, but their concerns declined back such that the four strata have been quite close since (Figures 6-18 and 6-19). Perceived risk for *regular use* has shown a growing divergence between the young adults and the 12th graders. The three young adult strata have shown a gradual

decline since around 1990, whereas the 12th graders have shown a sharper decline since 1992, resulting in a wider gap by 2019 (45% of 12th graders seeing great risk with regular use vs. 58-64% among young adults). This may have resulted from generational forgetting of the dangers of regular use. In 2020, there were nonsignificant increases for the three young adult groups to 59%, 70%, and 70%, respectively.

- In 2020, a minority of young adults saw ***binge drinking*** (having 5 or more drinks in a row) on weekends as dangerous (36-37%) (Figure 6-23). None of the changes in 2020 were significant, which has been true for the past several years for one-year changes, and there have been few differences among the young adult age groups. Regarding earlier trends, the belief that binge drinking carries great risk increased over the 1980s in these age groups, rising among 12th graders from 36% in 1980 to 49% in 1992. Among 19-22 year olds, it rose from a low of 30% in 1981 to 42% in 1992; the increases among the older groups were smaller. The increase in this belief could well help to explain the important decline in actual binge drinking, and could in turn be explained by the media campaigns against drunk driving in the 1980s and the increase in the drinking age in a number of states.[7] Following a staggered pattern, perceived risk of harm reached a peak among 18 year olds in 1992, among 19-22 year olds in 1993, among 23-26 year olds in 1994, and among 27-30 year olds in 1995, suggesting some cohort effect in this important belief. This staggered pattern of additional peaks occurred again in 1996 for 18 year olds, in 1998 for 19-22 year olds, and in 1999 for the two older groups. It also appears that this cohort effect followed a period effect of increased perceived risk that took place for all age groups earlier in the 1980s. From 1998 through 2019/2020, perceived risk of binge drinking has not changed much among the 19-30 age groups.

- The perception that having ***one or two drinks per day*** is dangerous continues to be low for young adults, with 2020 percentages of 15% for each of the three age groups (Figure 6-21); there was a significant 4.4 percentage point decrease in this belief among 19-22 year olds,[8] and small nonsignificant decreases among 23-30 year olds. Regarding longer-term trends, between 1980 and 1991, a very gradually increasing proportion of all four age groups viewed having one or two drinks per day as being risky, but then they all showed a parallel decrease in perceived risk of this behavior during the relapse phase of the drug epidemic through at least 2000. It seems likely that the earlier increase was due to the general rising concern about the consequences of alcohol use, particularly drunk driving, and that the subsequent decline in perceived risk was due at least in part to increasing reports of cardiovascular health benefits of light-to-moderate daily alcohol consumption. From about 2001 through 2019, there has been little systematic change in this belief in any of the age strata, and there has been little difference by age across the entire 35-plus-year interval, although in the 1980s 12th graders had the lowest levels of perceived risk whereas since 2006 they have usually had the highest levels. And, since 1980, 18 year olds have

[7] See O'Malley, P. M., & Johnston, L. D. (1999). Drinking and driving among U.S. high school seniors: 1984–1997. *American Journal of Public Health, 89*, 678–684; O'Malley, P. M., & Johnston, L. D. (2003). Unsafe driving by high school seniors: National trends from 1976 to 2001 in tickets and accidents after use of alcohol, marijuana and other illegal drugs. *Journal of Studies on Alcohol, 64,* 305–312; and O'Malley, P. M., & Johnston, L. D. (2013). Driving after drug use or alcohol use by American high school seniors, 2001-2011. *American Journal of Public Health, 103*(11), 2027-2034.

[8] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-1 footnote 48).

consistently seen the least risk from ***heavy daily drinking*** and the most risk from weekend ***binge drinking*** (Figures 6-22 and 6-23).

- In 2020, more than four fifths (80-87%) of young adults perceived regular ***pack-a-day or more cigarette smoking*** as entailing high risk (Figure 6-24), with none of the changes in 2020 being significant. In recent years, 18 year olds consistently showed lower perceived risk than young adults did (and as reported in *Volume I*, 10th graders were still lower and 8th graders lowest). Clearly, there is an age effect in young people coming to understand the dangers of smoking. Unfortunately, it appears that much of the learning about the risks of smoking happens *after* smoking initiation has occurred and many young people have already become addicted. These beliefs about smoking risks have strengthened very gradually in all age groups from senior year forward during the years we have monitored them (see Table 6-1 and Figure 6-24). The parallel changes in these beliefs across the different age groups indicate a period effect, suggesting that all of the age groups responded to common influences in the larger culture. These influences are discussed at length in *Volume I*[9] in chapter 8 on attitudes and beliefs. The rise in perceived risk slowed between 2002 and 2011, with only slight increases, mainly in the two youngest age strata. Changes since 2011 have been minimal.

- In 2019, we updated our measure regarding perceived risk of ***vaping nicotine*** to ask about perceived risk of vaping an e-liquid with nicotine (rather than of using e-cigarettes) among young adults (we made this change in 2017 for 12th graders). In 2019, perceived risk of occasionally vaping an e-liquid with nicotine was 20%, 19%, and 20% across the three young adult age groups; in 2020, it was 21%, 23%, and 26%, showing nonsignificant increases among 19-22 year olds and 23-26 year olds,[10] and a significant increase among 27-30 year olds (Table 6-1). Perceived risk of regularly vaping an e-liquid with nicotine was 42%, 42%, and 41%, respectively, in the three young adult age groups in 2019; in 2020, it was 49%, 50%, and 52%, respectively, showing significant increases for each age group (by 7-11 percentage points) (Table 6-1). These levels contrast starkly with the 80-87% seen for smoking one or more packs of cigarettes a day.

  Between 2014 and 2018, we included items concerning perceived risk of using ***e-cigarettes*** regularly in the 12th grade and young adult surveys. In 2014, regular e-cigarette use was seen as dangerous by 14% of the 12th graders and 17% to 22% of the young adults. Perceived risk increased for all age groups in 2015 and again in 2016, with 18% of the 12th graders and 28% to 31% of the young adults reporting regular use as dangerous (2015 to 2016 increases were significant for 19-22 and 23-26 year olds); however, these increases appear to have stalled for all age groups in 2017 and 2018, with percentages of 18% for 12th graders and 25% to 33% for three young adult strata in 2018.

- The regular use of ***smokeless tobacco*** was seen as dangerous by 43-57% of young adults in 2020, showing a significant 9.9 percentage point decline that year among 19-22 year olds[11] and nonsignificant change for 23-30 year olds. These beliefs gradually strengthened

[9] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.
[10] When comparing the 2019 web-push only and 2020 (all web-push) samples, this increase was significant (see Table 6-1 footnote 49).
[11] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was significant (see Table 6-1 footnote 50).

from 1986 through about 2001 in all age groups covered (Figure 6-25 and Table 6-1), particularly among the two older age groups. As with cigarettes, the change appears to reflect a secular trend (period effect) because of its parallel occurrence in all age groups, at least through 2019. Perceived risk has not changed among the young adults in any systematic fashion since 2001; these data are based on only one questionnaire form, so year-to-year nonsignificant fluctuations can appear to be relatively large. It has been declining gradually among 12th graders since 2006 through 2019.

PERSONAL DISAPPROVAL OF DRUG USE

For most of the life of the study, follow-up respondents were asked the same questions asked of 12th graders in one of the six questionnaire forms concerning the extent to which they personally disapprove of various drug-using behaviors among "people (who are 18 or older)." Trends in the answers of young adults in the three age bands of 19 to 22, 23 to 26, and 27 to 30 are contained in Table 6-2 and in Figures 6-26 through 6-44. Comparison data for 12th graders are also provided for 1980 onward. (See Table 8-6 in *Volume I* for the longer-term trends in 12th graders' levels of disapproval associated with using the various drugs.) As with the perceived risk questions, starting in 2012 the estimates were based on all questionnaire forms on which each disapproval question was located in order to increase sample size and, therefore, reduce sampling error. Each question is footnoted in Table 6-2 to indicate on how many forms it was contained in 2012 and thereafter. All summaries below pertain to Table 6-2 and the related figures.

- In general, disapproval levels of adult use of the various drugs ranked similarly across substances for both 12th graders and young adults. The great majority of young adults disapproved of using, or even experimenting with, all of the ***illicit drugs other than marijuana.*** For example, 90% or more of young adults in 2020 disapproved of *regular* use of each of the following drugs: ***LSD, cocaine, heroin,*** and ***amphetamines.*** Fully 57% to 98% of young adults disapproved of even *experimenting* with each of these same drugs. Many of these attitudes differed rather little as a function of age group in 2020.

- For ***marijuana***, disapproval tends to be lower compared to disapproval of other substances. As of 2020, the majority of young adults continue to disapprove of *regular* marijuana use, but such disapproval is declining: it was 56%, 51%, and 55% in the three young adult age groups, respectively, showing significant one-year declines for 19-22 and 23-26 year olds.[12] Similarly, disapproval of *occasional* marijuana use continued to decline in 2020 among 19-22 year olds (to 34%) and 23-26 year olds (to 27%, a significant decline[13]), while remaining level among 27-30 year olds (33%); and the same was true regarding *experimental* marijuana use with continued declines in 2020 for 19-22 year olds (to 26%), 23-26 year olds (to 20%, a significant decline[14]), with it increasingly slightly for 27-30 year olds (to 25%). The 2020 disapproval levels are at all-time lows for 19-26 year olds, and the 2019 levels are at all-time lows for 27-30 year olds. Among the three young adult age groups, disapproval of regular marijuana use (Figure 6-28) increased in the 1980s, was fairly stable from 1990 through 2008, and has been declining steadily since then. The 12th

[12] When comparing the 2019 web-push only and 2020 (all web-push) samples, the decreases for these age groups were not significant (see Table 6-2 footnotes 53 and 54).
[13] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-2 footnote 52).
[14] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-2 footnote 51).

graders showed some earlier decline in disapproval in the 1990s before leveling but have tracked closely with the young adult groups in their declining levels of disapproval since then. Thus since 2007 there has been a considerable decline in disapproval of regular (and occasional) marijuana use in all four age groups; the pattern is consistent with a secular trend, which would alert us to a possible increase in marijuana use. Indeed, such an increase in use has been occurring among 19-30 year olds since 2010 through 2020 (see Table 5-2).

- In 2020, we added new questions to the young adult surveys regarding disapproval of ***vaping marijuana***. For the three young adult age groups respectively, 45%, 43%, and 49% disapproved of vaping marijuana *occasionally*, and 64%, 60%, and 67% disapproved of vaping marijuana *regularly*. Thus, more young adults disapprove of vaping marijuana occasionally (43-49% in 2020) than disapprove of using marijuana occasionally in general (27-34% in 2020), and this was true regarding *regular* marijuana vaping (60-67%) and regular marijuana use in general (51-56% in 2020).

- Disapproval of experimental use of ***LSD*** has been declining among 12th graders and young adults in recent years (Figure 6-29). In 2020, disapproval of experimental use of LSD continued to decline, reaching new all-time lows among all age groups. It declined for the three young adult age groups to 63%[15], to 57% (a significant decline[16]), and to 64%, respectively. Still, the majority disapprove of such *experimental* use, which has been true since 1980, when these data were first available. Beginning around 1990, all age groups decreased some in their disapproval of trying LSD (starting from very high levels of disapproval at 90-91%). The decline was steepest among 12th graders, but there was a reversal in this group's disapproval in 1997, and then an increase through 2006. Disapproval in the older age groups declined less and in staggered fashion; this trend showed some evidence of a reversal among 19-22 year olds and 23-26 year olds since 2001 and 2002, respectively. The pattern again suggested lasting cohort-related differences in these attitudes. From about 2010 through 2020, disapproval levels generally showed consistent declines, reaching the all-time lows in 2020 (ranging from 57% to 64%). Disapproval of *regular* LSD use has been near the top of the scale for more than three decades, ranging from 90% to 92%.

- In 2020, experimenting with ***MDMA*** (***ecstasy***, ***Molly***) was disapproved of by 71% to 74% of the young adults; none of the changes in 2020 were significant,[17] as has been the case for one-year changes in the last few years (Table 6-2, Figure 6-33), though disapproval of experimenting with ***MDMA*** has been trending down among young adults since 2018. First measured among young adults in 2001, disapproval of MDMA use was negatively associated with age in the early 2000s. In 2001 disapproval of trying MDMA was quite high, and from 2001 to 2010, disapproval rose to even higher levels in all age groups, with some uneven decline since then. Due to the advent of Molly—reputedly a stronger form of MDMA than ecstasy—the question for young adults was changed to MDMA in 2015 with both ecstasy and Molly given as examples (there was no evidence that the addition of Molly

[15] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was significant (see Table 6-2 footnote 55).
[16] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-2 footnote 56).
[17] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease for 19-22 year olds was significant (see Table 6-2 footnote 70).

as an example had the effect of raising the disapproval level, as might have been expected; indeed, there was a slight, nonsignificant decline in disapproval of occasional use in 2015).

- Disapproval of all three levels of ***heroin*** use (experimental, occasional, and regular use) has remained very high and fairly stable since MTF began, though there was a very gradual increase in disapproval in all age strata from the mid-1980s through around 2005, followed by a leveling. In 2020, disapproval of occasional and regular use was 97% to 98% in all young adult age groups; disapproval of trying heroin was 93% to 96% across the three age groups. For public health purposes, a noteworthy minor exception to the general pattern of trends for disapproval of heroin use was a little slippage in disapproval of experimental use that occurred among 12th graders (but not young adults) from 1991 through 1996 (from 96% to 92%) a period during which heroin prevalence was rising.

- Disapproval of *regular* ***cocaine*** use rose gradually among 19-22 year olds, from 89% in 1981 to 99% in 1990, with little change thereafter (97% in 2020, and the older young adult age groups had similar trends) (Table 6-2, Figure 6-32). In fact, all three young adult age bands ranged from 94% to 97% in disapproving of regular use in 2020. Disapproval of even *experimental* cocaine use is also quite high, with 2020 percentages at 83%, 72%, and 72%, respectively, across the three age groups, representing a nonsignificant increase among 19-22 year olds, a significant decrease among 23-26 year olds,[18] and a nonsignificant decrease among 27-30 year olds.[19] Regarding long-term trends, disapproval of *experimental* use increased during the 1980s, peaking first among 12th graders at 94% in 1991. It then peaked in 1995 among 19-22 year olds (at 94%) and 23-26 year olds (at 92%). Finally, it peaked in 1999 at 90% among 27-30 year olds, suggesting both a period and a cohort effect at work. All age groups had some modest falloff in disapproval since those peak levels were attained. The last five years have shown uneven declines for the two older age groups. This recent decline in disapproval among older young adults could signal some future resurgence in cocaine use.

- Disapproval of experimenting with ***amphetamines*** was at all-time lows in 2020 for young adults, declining significantly among 19-22 year olds (to 68%) and 23-26 year olds (to 61%)[20] and nonsignificantly among 27-30 year olds (to 65%)[21] (Figure 6-38). Regarding long-term trends, disapproval of *experimental use* rose gradually in the 1980s as use was falling; thereafter, disapproval leveled in the mid-80% range through 2010, with almost no difference among the age strata. For example, trying amphetamines once or twice was disapproved of by 73-74% of 19-26 year olds in 1984, compared to 84% by 1990. After a long period of level disapproval, all strata showed a slight drop in disapproval in 2011, followed by another leveling for most age groups, followed by another sharp drop of 10 percentage points in 2014 among 19-22 year old age group (which contains most of the college students). In the past few years, there has been some further decline, reaching historic low levels in 2020 for young adults, respectively; for 12th graders, the 2019 percentage was the lowest over the past two decades.

[18] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-2 footnote 71).
[19] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was significant (see Table 6-2 footnote 72).
[20] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-2 footnote 75).
[21] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was significant (see Table 6-2 footnote 76).

Disapproval of *regular* amphetamine use (Figure 6-39) started out very high among all age strata in the early 1980s and rose even higher by the early 1990s, where it remained for all age strata until 2011; after that there was a slight decline, but a leveling by 2012 that has largely continued into 2020 with disapproval above 89% for all young adult age groups.

Some of the decline and age-group differences in disapproval of amphetamine use in all four age groups since 2010 is likely explained by a change in the question wording. Adderall and Ritalin were included in the question for the first time in 2011 as examples of amphetamines. There had been very little difference among the various age strata in either their levels or trends in disapproval until the significant decline in 2014, which brought the college-age group (19-22 year olds) considerably below the other age groups in their disapproval of experimenting with amphetamines. Since then, age differences among the young adults have been inconsistent, although disapproval of amphetamine use has remained highest among 12th graders.

- To make room for questions regarding disapproval of other drugs, questions regarding disapproval of ***sedatives (barbiturates)*** were dropped in 2020 from young adult surveys. There has been very little historical or age variation in disapproval of regular use (above 94% for all years and age groups). There has been some important trending and age variation in disapproval of experimental use of sedatives (barbiturates). In 2019, it was at 86%, 82%, 81%, and 76% across the four age groups, respectively, continuing its modest decline over the past five years among all age groups except 19-22 year olds (who showed uneven change since 2014). Over the years, disapproval of sedatives has moved very much in parallel with that for amphetamines**.** Disapproval increased significantly during the 1980s, accompanied by declining use. Disapproval of trying sedatives was at 84-85% in 1984 compared to 89-91% by 1990. Disapproval of sedative use slipped some among 12th graders after 1992 and among 19-22 year olds after 1994, with the 23-26 year olds following suit after 1996, and the 27-30 year old stratum in 2004. This pattern of staggered change again suggests cohort effects, reflecting lasting cohort differences in these attitudes. In 2019, disapproval of experimental use of sedatives stood between 76% and 86%, while disapproval of regular use was above 95%.

- In the past several years, the trends for disapproval of ***alcohol use*** have shown little systematic change. However, the longer-term story for disapproval of alcohol use is quite an interesting one, in that changes in the minimum drinking age seem to have led to modest changes in norms for the affected cohorts. Between 1980 and 1992, an increasing proportion of 12th graders favored *total abstention*; the percent who disapproved of drinking even just one or two drinks rose from 16% in 1980 to 33% in 1992. This percentage fell back slightly over the years and stood at 26% in 2019 (a significant decline from 2018). Among 19-22 year olds there was a modest increase in disapproving of any use (Figure 6-40) between 1985 and 1989 (from 15% to 22%), where it held for some years; it decreased nonsignificantly in 2020 to 12%. For 23-30 year olds, there has been slight uneven decline in recent years, with it being 10% in 2020. These differing trends may reflect the fact that during the 1980s, the drinking age was raised in a number of states so that by 1987 it was 21 in all states; this change would have had the greatest effect on 12th graders, who may have incorporated the legal restrictions into their normative structure

and, as they entered young adulthood, brought these new norms with them. But the changes may be exhibited only among respondents in the cohorts that were underage after the time that the new law raising the minimum drinking age went into effect.

Disapproval of ***having one or two drinks nearly every day*** (Figure 6-41) has not shown any such cohort effects, because all age groups have generally moved in parallel, at similar levels of disapproval through 2004. The three youngest age bands (which include 12th graders through 26 year olds) showed an increase in disapproval of having one to two drinks daily up until about 1990 suggesting some secular trending (little data were yet available on the oldest age group), but disapproval has declined a fair amount in all of the age groups after that, with differing trends following. Starting in 2004, a bit of a gap opened up between 12th graders and young adults that enlarged further through 2019, as 12th graders showed some increase and then leveling in disapproval of having one to two drinks daily and young adults, especially the oldest group, continued to show declines. In 2020, disapproval dropped significantly for 19-22 year olds (to 58%) and 23-26 year olds (to 49%),[22] and remained level for 27-30 year olds (50%).

The pattern of cross-time changes in disapproval of having one or two drinks nearly every day for young adults closely parallels what was observed for the perceived risk associated with this behavior. This holds especially in terms of overall declines among the older group. The level of disapproval has been much higher for having five or more drinks nearly every day, as would be expected (91% or above in 2020 for all age groups). Declines in disapproval of both daily drinking measures over the years among the young adults may well be due to widely publicized reports that some cardiovascular benefits may result from having one or two drinks per day.

- Disapproval of ***binge drinking*** on weekends (Figure 6-43) has shown quite a bit of variation over the years as well as age differences. In 2020, disapproval was 61% to 65% for the three young adult age bands (representing nonsignificant decline from 2019). Trends have been uneven over the years, but in general, disapproval has slowly increased for 12th graders from the most recent low of 63% in 1999 to 75% in 2019, has slowly increased for 19-22 year olds from the most recent low of 58% in 2002 to 65% in 2020, has shown little systematic change for 23-26 year olds since 1984 (ranging between 56% and 71%), and has slowly decreased for 27-30 year olds from the most recent high of 74% in 2004 to 65% in 2020. Thus, age group differences have been widening in recent years.

  It is important to note that the age-based trends in disapproval often mirrored the corresponding trends in prevalence of binge drinking. In particular, from the early 1980s for the two youngest age groups there was a considerable increase in disapproval that continued through 1992 for 12th graders (who then showed some drop-off) and through 1996 among 19-22 year olds (who then also showed some drop-off). As Figure 5-18d from the previous chapter illustrates, the prevalence of binge drinking declined substantially among 12th graders and 19-22 year olds between 1981 and the early 1990s, as norms became more restrictive. There was little or no change in disapproval among the 27-30 year olds, either in their levels of disapproval or in their prevalence of heavy drinking, until the

[22] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 6-2 footnote 78).

early 2000s, when their disapproval began to drop and occasions of binge drinking began to increase.

- Disapproval of ***pack-or-more-a-day cigarette smoking*** was at or near all-time highs in 2020, at, 86%, 85%, and 84% across the three young adult age groups, respectively (Figure 6-44). Regarding long-term trends, 12th graders showed some increase in disapproval of pack-or-more-a-day smoking between 1982 (69%) and 1992 (74%). Their disapproval fell through 1997 (to 67%) as their smoking increased; disapproval then increased for several years (to 82% in 2006) before leveling and then increasing through 2019 (88%), as smoking declined. The 19-22 year olds showed a similar increase in disapproval from 66% in 1982 to 86% in 2020. All four age strata showed some upward drift in their level of disapproval of smoking since about 1999 (reaching 84-86% in 2020), suggesting a secular change in attitudes during this period.

- In 2019, we included new measures regarding personal disapproval of ***vaping an e-liquid with nicotine*** among young adults (included for 12th graders beginning in 2017). In 2019, disapproval of *occasionally* vaping an e-liquid with nicotine was 57% among 12th graders and 72%, 68%, and 68% among the three young adult age groups, respectively; in 2020, it increased for all young adult age groups to 76%, 72%d,[23] and 76% (a significant increase), respectively (Table 6-2). Regarding disapproval of *regularly* vaping an e-liquid with nicotine, in 2019 it was 70% among 12th graders and 84%, 82%, and 82%, respectively, among the three young adult age groups; in 2020 it increased nonsignificantly for the three young adult age groups to 85%, 84%, and 85%, respectively (Table 6-2).

COHORT DIFFERENCES AND THEIR IMPLICATIONS FOR PREVENTION AND THEORY

An important theoretical point to be made, based on the strong evidence reported here for cohort effects in perceived risk and disapproval of many of the drugs under study, is that among the causes of cohort differences in actual use are lasting cohort differences in these critical *attitudes* and *beliefs.* In other words, *the attitudes and beliefs brought into adulthood from adolescence tend to persevere and continue to shape individual and population drug use over the life course.*

A second point has to do with the causes of these attitudinal cohort effects. We noted earlier that the older respondents are more likely than the younger ones to see as dangerous the use of LSD, heroin, narcotics other than heroin, amphetamines, cocaine, and sedatives (barbiturates). Some years ago, Lloyd Johnston (the Founding Principal Investigator of MTF) proposed a framework for a theory of drug epidemics in which direct learning (from personal use) and vicarious learning (from observing use by others in both the immediate and mass media environments) play important roles in changing these key attitudes.[24] To the extent that the data on perceived risk represent cohort effects (enduring differences between class cohorts), these findings would be consistent with this theoretical perspective. Clearly, use of these particular drugs was greater when the older cohorts were growing up, and public attention and concern regarding the consequences of these drugs were greatest in the 1970s and early to mid-1980s. In the early 1970s, LSD was alleged to cause brain

[23] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was significant (see Table 6-2 footnote 79).
[24] Johnston, L. D. (1991). Toward a theory of drug epidemics. In L. Donohew, H. E. Sypher, & W. J. Bukoski (Eds.), Persuasive communication and drug abuse prevention (pp. 93–131). Hillsdale, NJ: Lawrence Erlbaum.

and chromosomal damage, as well as bad trips, flashbacks, and behavior that could prove dangerous. Methamphetamine use was discouraged with the slogan "speed kills." In addition, there was an epidemic of heroin use in the early 1970s. In the early 1980s there was an epidemic of cocaine use, and it reached a pinnacle in 1986 with the widely reported deaths of sports stars and others from cocaine. Later cohorts (through the mid-1990s, at least) were not exposed to those experiences while growing up, and thus did not see the risks in the same way that the older cohorts did. While there may have been a secular trend toward greater perceived risk for drugs in general, in the case of LSD there may have also been an operating cohort effect (with younger cohorts seeing less danger) offsetting the secular trend among 12th graders; the net effect was a decrease in 12th graders' perceived risk of LSD use after 1980.

This vicarious learning explanation has a very practical implication for national strategy for preventing future epidemics. Because fewer in their immediate social circles and fewer public role models may be using these drugs and exhibiting the adverse consequences of use during certain historical periods, future cohorts of youth may have less opportunity to learn about the adverse consequences of these drugs in the normal course of growing up. Unless those hazards are convincingly communicated to them in *other ways*—for example, through school prevention programs, by their parents, and through the mass media, including public service advertising—they will become more susceptible to a new epidemic of use of the same or similar drugs.

For example, in *Volume I*,[25] we reported an increase in use of several drugs in 8th, 10th, and 12th grades in 1994 through 1997. This increase suggests that this form of generational forgetting may well have occurred during those years. For the cohorts that follow such a rise in use, there is once again an increased opportunity for vicarious learning from the adverse experiences of those around them, but by that time, members of affected cohorts have had to learn the hard way what consequences await those who become involved with the various drugs. In the early 2000s we saw drug use subside to some degree, which once again set the stage for generational forgetting of the dangers of many of these drugs. Over the past few years, we have seen substantial softening of attitudes among teens and young adults regarding marijuana, and also some softening in attitudes toward occasional or regular use of MDMA (ecstasy, Molly), LSD, and cocaine, which suggests a real possibility of future increases in use among young adults.

[25] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.

TABLE 6-1
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Try marijuana once or twice [6]	18	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6	23.1	27.1	24.5	21.9	19.5	16.3	15.6	14.9	16.7
	19–22	8.3	7.8	9.7	9.7	12.8	11.2	13.0	12.9	16.8	16.9	17.8	19.1	19.7	19.4	18.8	13.3	16.9	14.8	13.4
	23–26	—	—	—	—	9.6	10.0	12.4	14.5	16.0	14.0	17.7	14.0	15.0	13.0	15.0	15.8	18.5	15.1	16.7
	27–30	—	—	—	—	—	—	—	—	14.6	16.0	17.0	15.7	15.1	14.0	14.8	16.1	16.2	16.1	16.4
Use marijuana occasionally [6,14,44,57]	18	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5	36.9	40.6	39.6	35.6	30.1	25.6	25.9	24.7	24.4
	19–22	13.9	14.2	16.9	16.7	21.7	20.6	22.4	23.0	28.7	29.1	30.1	30.2	29.5	30.3	31.3	25.5	25.6	22.0	22.0
	23–26	—	—	—	—	15.8	16.3	20.9	20.8	26.8	25.3	30.4	26.2	27.4	24.0	25.5	27.7	27.3	26.4	26.8
	27–30	—	—	—	—	—	—	—	—	24.2	25.7	28.7	27.4	27.5	26.8	28.1	28.3	28.1	26.0	25.8
Use marijuana regularly [6,33]	18	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5	77.8	78.6	76.5	72.5	65.0	60.8	59.9	58.1	58.5
	19–22	43.9	47.8	52.4	58.4	62.2	66.8	67.6	69.4	72.4	74.9	73.0	75.0	69.3	69.2	65.0	62.1	61.3	60.7	53.4
	23–26	—	—	—	—	52.9	57.5	59.4	65.3	68.3	72.1	71.0	70.9	67.3	64.1	63.2	64.2	62.7	64.1	62.7
	27–30	—	—	—	—	—	—	—	—	67.5	69.1	69.2	67.5	68.8	69.4	65.6	69.2	67.3	65.0	63.6
Try synthetic marijuana once or twice [7,39,58]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take synthetic marijuana occasionally [7]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try LSD once or twice [8]	18	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0	44.7	46.6	42.3	39.5	38.8	36.4	36.2	34.7	37.4
	19–22	44.8	44.4	45.0	44.7	46.0	44.3	47.6	49.4	49.2	49.5	49.3	48.0	45.6	42.4	42.3	40.3	44.4	40.1	38.7
	23–26	—	—	—	—	48.3	46.9	47.9	51.5	53.7	50.7	52.0	50.1	49.7	49.0	46.8	45.8	46.1	46.6	45.7
	27–30	—	—	—	—	—	—	—	—	53.3	55.6	54.6	52.5	53.0	51.5	53.5	52.5	50.1	52.0	52.0
Take LSD regularly [8]	18	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3	84.5	84.3	81.8	79.4	79.1	78.1	77.8	76.6	76.5
	19–22	83.4	85.3	86.2	86.0	84.5	86.4	87.1	85.6	85.4	85.5	85.8	86.6	87.0	81.3	81.0	80.5	82.4	83.6	78.6
	23–26	—	—	—	—	89.0	86.6	88.7	90.0	89.2	89.0	88.2	89.1	87.3	85.3	87.5	86.3	84.7	85.6	82.1
	27–30	—	—	—	—	—	—	—	—	89.1	91.2	92.0	87.1	88.5	89.0	89.2	88.4	87.0	87.2	90.5
Try PCP once or twice [8]	18	—	—	—	—	—	—	—	55.6	58.8	56.6	55.2	51.7	54.8	50.8	51.5	49.1	51.0	48.8	46.8
	19–22	—	—	—	—	—	—	—	63.6	63.8	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	64.8	63.2	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	65.9	—	—	—	—	—	—	—	—	—	—
Try MDMA (ecstasy, Molly) once or twice [8,59]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.8	34.5
	19–22	—	—	—	—	—	—	—	—	—	45.2	47.1	48.8	46.4	45.0	51.1	48.3	46.7	45.5	42.7
	23–26	—	—	—	—	—	—	—	—	—	49.5	47.2	47.4	45.5	41.9	50.6	49.3	50.4	50.5	47.7
	27–30	—	—	—	—	—	—	—	—	—	44.9	48.7	47.7	44.2	51.7	47.3	50.0	50.6	48.8	50.4
Take MDMA (ecstasy, Molly) occasionally [8,60]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try salvia once or twice [4,11,37]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take salvia occasionally [11,25,38]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine once or twice [8,34,45,61]	18	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9	59.4	59.4	56.8	57.6	57.2	53.7	54.2	53.6	54.6
	19–22	31.4	30.4	33.3	28.7	33.1	33.2	35.5	45.9	51.9	51.5	58.1	58.7	56.1	60.5	63.8	57.7	61.9	55.5	55.4
	23–26	—	—	—	—	31.3	31.1	35.9	48.0	47.1	51.3	51.5	50.5	53.5	54.1	56.0	58.7	57.2	63.1	60.2
	27–30	—	—	—	—	—	—	—	—	45.3	53.0	51.6	52.6	51.8	54.7	53.5	56.4	53.6	54.6	60.5
Take cocaine occasionally [8,15]	18	—	—	—	—	—	—	54.2	66.8	69.2	71.8	73.9	75.5	75.1	73.3	73.7	70.8	72.1	72.4	70.1
	19–22	—	—	—	—	—	—	53.8	61.3	67.1	72.6	74.6	72.6	74.9	75.4	78.0	73.4	76.6	76.1	71.2
	23–26	—	—	—	—	—	—	50.9	62.6	63.2	69.9	69.9	70.3	69.9	72.8	70.3	76.0	71.3	76.5	74.2
	27–30	—	—	—	—	—	—	—	—	62.6	66.6	66.6	69.1	69.9	69.1	69.9	70.0	67.8	73.8	73.2
Take cocaine regularly [8]	18	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2	91.1	90.4	90.2	90.1	89.3	87.9	88.3	87.1	86.3
	19–22	65.2	69.3	71.5	75.2	75.1	82.9	82.0	88.0	90.3	89.1	93.9	93.5	92.9	91.7	92.2	91.5	92.2	91.6	88.7
	23–26	—	—	—	—	75.6	76.9	83.0	88.9	90.9	91.2	91.2	92.7	89.9	91.9	92.6	93.3	90.6	93.2	92.9
	27–30	—	—	—	—	—	—	—	—	88.9	92.0	91.4	90.9	92.0	91.6	92.1	91.3	91.6	92.7	93.0

(Table continued on next page.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Try marijuana once or twice [6]	18	15.7	13.7	15.3	16.1	16.1	15.9	16.1	17.8	18.6	17.4	18.5	17.1	15.6	14.8	14.5	12.5	12.3	12.9	11.9	12.1	10.7	§	—
	19–22	12.5	14.3	11.9	13.3	17.1	15.3	15.6	14.4	10.8	17.4	13.2	16.8	13.4	12.9	11.8	9.3	10.6	9.4	9.8	8.3	7.0	7.0	0.0
	23–26	16.4	13.1	13.0	15.1	15.3	13.6	13.0	13.9	13.0	12.5	10.6	12.7	10.5	10.1	9.7	9.6	9.5	9.0	6.9	6.2	5.9	5.0	-0.8
	27–30	16.1	14.4	17.3	16.2	18.0	13.8	14.5	14.5	16.6	11.4	12.3	11.5	12.4	12.5	10.2	8.8	7.9	7.3	6.9	8.1	6.2	7.7	+1.5
Use marijuana occasionally [6,14,44,57]	18	23.9	23.4	23.5	23.2	26.6	25.4	25.8	25.9	27.1	25.8	27.4	24.5	22.7	20.6	19.5	16.4	15.8	17.1	14.1	14.3	13.5	§	—
	19–22	19.8	25.8	18.0	21.0	24.1	23.2	24.3	22.1	22.3	23.6	23.1	19.9	19.6	20.6	19.1	15.4	15.6	13.0	13.3	11.1	10.2	8.8	-1.3
	23–26	26.4	24.9	20.5	24.5	22.2	22.7	21.6	22.3	20.2	18.5	18.1	19.3	15.5	17.1	14.4	14.8	13.7	14.1	9.7	9.2	9.3	6.5	-2.8 ss
	27–30	25.3	25.8	25.0	30.2	27.9	25.1	24.8	21.8	25.6	21.6	21.7	18.6	19.3	19.7	16.0	14.8	12.1	11.1	9.9	10.8	7.7	9.8	+2.1 s
Use marijuana regularly [6,33]	18	57.4	58.3	57.4	53.0	54.9	54.6	58.0	57.9	54.8	51.7	52.4	46.8	45.7	44.1	39.5	36.1	31.9	31.1	29.0	26.7	30.5	§	—
	19–22	55.2	58.0	49.6	56.7	57.8	57.2	55.3	54.5	50.4	51.6	46.4	49.8	43.0	43.5	39.4	35.1	33.3	30.0	27.3	22.1	23.5	21.1	-2.5
	23–26	60.1	60.3	55.1	53.7	56.7	54.2	53.6	55.9	52.5	52.4	43.0	47.1	39.3	40.1	35.9	34.5	30.6	30.2	23.3	21.1	21.8	19.1	-2.7
	27–30	66.1	64.0	61.7	63.5	64.7	59.3	57.0	54.9	51.5	51.2	47.4	48.5	42.2	43.5	40.3	35.3	30.6	29.4	24.7	24.8	21.2	21.9	+0.7
Try synthetic marijuana once or twice [7,39,58]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	23.5	25.9	32.5	33.0	35.6	33.0	30.4	28.4	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	30.6	33.1	36.1	39.3	42.6	42.7	40.4	44.1	38.2	-5.9 s
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	29.1	29.4	38.5	40.4	45.1	40.8	45.0	44.3	46.7	+2.5
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	28.9	32.7	35.1	37.3	45.4	41.7	45.8	41.9	46.8	+4.9
Take synthetic marijuana occasionally [7]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	32.7	36.2	39.4	40.9	43.9	40.0	37.1	35.4	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	38.5	40.1	44.5	47.6	53.9	52.6	50.0	52.7	48.6	-4.1
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	37.3	38.6	47.2	49.5	53.0	50.8	56.4	53.1	58.7	+5.6
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	36.3	41.0	43.1	46.6	53.2	52.2	54.4	51.5	57.1	+5.6
Try LSD once or twice [8]	18	34.9	34.3	33.2	36.7	36.2	36.2	36.5	36.1	37.0	33.9	37.1	35.6	34.7	33.1	34.9	35.5	33.2	31.7	30.0	29.0	28.3	§	—
	19–22	38.1	37.9	37.5	35.3	39.7	39.2	38.7	43.5	40.9	46.5	38.5	40.9	43.5	43.5	40.3	40.1	39.4	36.5	34.5	34.3	28.5	27.5	-1.0
	23–26	49.3	44.9	48.5	45.7	43.8	40.7	39.9	38.1	42.8	43.8	43.0	48.7	44.1	47.2	43.0	42.4	38.0	42.5	32.1	36.4	31.8	30.5	-1.4
	27–30	49.9	46.4	46.7	44.9	47.5	47.2	47.9	44.9	44.6	42.4	41.7	41.5	45.2	45.8	45.2	45.6	47.6	43.7	41.3	38.5	34.4	36.9	+2.5
Take LSD regularly [8]	18	76.1	75.9	74.1	73.9	72.3	70.2	69.9	69.3	67.3	63.6	67.8	65.3	65.5	66.8	66.8	62.7	60.7	58.2	56.1	55.2	57.9	§	—
	19–22	82.2	81.6	79.2	81.1	78.6	78.4	77.8	78.9	77.5	73.9	74.8	72.8	74.4	78.0	76.6	74.7	72.7	75.7	65.1	64.7	61.0	59.6	-1.5
	23–26	85.4	84.1	86.0	85.3	84.3	83.5	80.8	82.0	80.3	80.2	82.0	83.1	81.4	78.9	79.0	76.0	71.7	73.9	68.7	70.1	64.6	65.6	+1.0
	27–30	87.8	85.3	86.9	85.3	87.5	83.9	87.9	82.2	85.7	82.9	80.2	87.0	83.0	83.2	83.8	80.3	79.9	73.2	71.7	71.7	62.0	65.4	+3.5
Try PCP once or twice [8]	18	44.8	45.0	46.2	48.3	45.2	47.1	46.6	47.0	48.0	47.4	49.7	52.4	53.9	51.6	53.9	53.8	54.4	55.1	53.6	51.7	52.6	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try MDMA (ecstasy, Molly) once or twice [8,59]	18	35.0	37.9	45.7	52.2	56.3	57.7	60.1	59.3	58.1	57.0	53.3	50.6	49.0	49.4	47.5	47.8	49.5	48.8	49.1	48.2	46.3	§	—
	19–22	37.6	37.9	40.5	46.8	50.1	52.3	53.8	51.0	50.3	51.4	51.4	50.7	49.9	45.9	52.4	50.7	47.7	51.2	43.9	45.2	38.9	28.3	-10.6 s
	23–26	50.0	46.7	45.7	45.6	45.9	44.9	51.2	46.4	51.4	46.3	46.4	47.5	54.2	43.7	49.1	56.5	48.8	50.5	43.2	43.7	31.5	28.6	-2.9
	27–30	50.9	48.9	53.6	52.0	58.8	49.1	50.2	46.5	51.9	43.5	43.5	52.0	51.3	44.3	51.4	52.0	54.5	52.1	51.3	46.6	39.9	35.6	-4.3
Take MDMA (ecstasy, Molly) occasionally [8,60]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—
	19–22	—	—	72.5	77.8	81.7	78.3	80.0	82.5	79.3	81.9	79.2	76.2	71.6	76.7	75.3	72.9	66.9	72.1	64.2	67.6	58.7	47.0	-11.6 s
	23–26	—	—	72.5	71.9	73.6	77.4	77.2	77.0	78.7	78.6	76.2	79.1	76.9	76.6	69.8	77.6	69.1	69.1	69.8	62.5	49.4	44.5	-4.9
	27–30	—	—	75.2	76.5	79.9	76.9	74.7	70.4	72.0	71.3	71.4	69.7	77.8	75.0	76.8	71.6	73.1	69.0	71.0	64.7	52.0	48.8	-3.1
Try salvia once or twice [4,11,37]	18	—	—	—	—	—	—	—	—	—	—	—	39.8	38.7	13.8	12.9	14.1	13.1	13.0	10.2	9.8	10.0	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5	21.4	25.9	23.7	23.8	23.6	18.9	21.5	18.6	-2.8
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	18.6	19.6	24.5	23.5	30.9	21.0	26.5	23.3	22.9	-0.4
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	18.8	20.6	18.4	21.7	25.2	21.3	25.8	22.5	28.2	+5.7
Take salvia occasionally [11,25,38]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	21.3	20.0	17.6	16.3	13.8	12.0	12.7	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	29.2	30.6	32.6	32.6	28.3	29.8	23.5	27.2	25.2	-2.0
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	26.6	25.5	31.1	31.2	38.6	33.6	35.1	28.5	30.0	+1.5
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	24.7	25.7	25.4	28.8	32.3	29.2	35.7	29.4	34.5	+5.1
Try cocaine once or twice [8,34,45,61]	18	52.1	51.1	50.7	51.2	51.0	50.7	50.5	52.5	51.3	50.3	53.1	52.8	54.0	51.6	54.4	53.7	51.1	52.7	49.5	47.9	47.7	§	—
	19–22	52.8	56.7	48.9	55.5	55.0	55.5	55.6	54.0	55.8	56.7	54.9	56.8	56.2	57.0	56.3	56.3	57.4	55.8	51.2	50.2	53.0	48.0	-5.0
	23–26	62.6	63.1	62.4	61.0	55.4	52.1	53.0	52.5	56.9	55.0	56.6	56.7	54.9	60.3	50.9	57.3	49.1	55.2	48.1	47.9	55.6	45.2	-10.4 s
	27–30	61.7	59.9	60.9	58.8	56.4	61.4	56.5	58.1	54.8	56.1	52.0	51.6	54.7	51.8	53.8	50.1	53.1	53.2	50.1	56.4	48.5	54.0	+5.5
Take cocaine occasionally [8,15]	18	70.1	69.5	69.9	68.3	69.1	67.2	66.7	69.8	68.8	67.1	71.4	67.8	69.7	69.0	70.2	68.1	66.3	68.6	64.6	62.1	64.2	§	—
	19–22	68.0	72.4	70.0	69.9	70.3	70.2	72.1	71.0	71.5	72.4	67.2	72.9	70.3	78.0	76.5	74.9	76.4	71.5	73.3	70.2	67.3	62.5	-4.8
	23–26	77.8	76.2	74.2	75.4	68.3	74.1	70.4	68.5	70.9	67.2	74.9	71.6	71.6	76.9	75.8	75.8	69.5	70.7	67.3	68.4	67.7	62.2	-5.5
	27–30	75.4	76.5	78.1	74.3	72.6	75.3	76.2	74.6	72.1	73.9	65.4	71.5	71.0	73.2	77.9	70.7	71.5	69.6	71.9	71.2	64.4	66.6	+2.1
Take cocaine regularly [8]	18	85.8	86.2	84.1	84.5	83.0	82.2	82.8	84.6	83.3	80.7	84.4	81.7	83.8	82.6	83.3	80.6	79.1	78.3	74.9	75.2	74.7	§	—
	19–22	88.5	90.7	85.1	88.3	87.4	87.1	89.2	86.2	86.7	87.0	88.6	87.9	86.3	92.3	91.4	89.7	90.4	89.6	92.2	88.5	85.7	82.9	-2.9
	23–26	92.7	92.9	91.1	91.5	88.5	91.5	88.0	90.9	88.0	86.5	89.2	90.9	88.0	91.2	91.2	92.4	86.4	92.0	85.5	87.1	87.6	89.9	+2.3
	27–30	92.4	92.3	94.5	91.2	92.9	91.3	94.0	90.0	89.9	91.1	88.8	92.7	87.2	91.2	91.7	88.7	90.0	91.6	89.5	88.8	90.0	88.7	-1.3

(List of drugs continued.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Try crack once or twice [8]	18	—	—	—	—	—	—	—	57.0	62.1	62.9	64.3	60.6	62.4	57.6	58.4	54.6	56.0	54.0	52.2
	19–22	—	—	—	—	—	—	—	59.4	67.3	68.5	69.4	66.9	65.4	63.5	70.1	61.9	65.2	62.0	59.3
	23–26	—	—	—	—	—	—	—	59.1	63.5	69.8	67.3	66.9	67.1	64.2	69.3	64.8	68.6	64.7	67.3
	27–30	—	—	—	—	—	—	—	—	66.5	64.9	68.7	66.8	64.3	68.8	65.6	66.4	66.7	68.5	66.5
Take crack occasionally [8]	18	—	—	—	—	—	—	—	70.4	73.2	75.3	80.4	76.5	76.3	73.9	73.8	72.8	71.4	70.3	68.7
	19–22	—	—	—	—	—	—	—	75.0	77.3	81.8	82.3	82.7	81.9	83.6	84.3	78.8	83.5	79.1	79.1
	23–26	—	—	—	—	—	—	—	70.3	74.0	79.9	81.1	83.9	84.4	81.6	83.2	81.4	85.9	80.8	84.2
	27–30	—	—	—	—	—	—	—	—	76.4	76.7	82.6	81.8	79.1	83.6	78.6	81.1	81.3	85.3	81.7
Take crack regularly [8]	18	—	—	—	—	—	—	—	84.6	84.8	85.6	91.6	90.1	89.3	87.5	89.6	88.6	88.0	86.2	85.3
	19–22	—	—	—	—	—	—	—	89.6	91.1	94.1	94.9	95.6	93.4	96.2	96.0	94.2	94.7	93.3	92.8
	23–26	—	—	—	—	—	—	—	88.0	89.2	91.5	94.2	95.4	94.1	93.4	94.9	95.5	96.1	91.4	95.6
	27–30	—	—	—	—	—	—	—	—	89.6	89.5	95.3	94.4	93.3	93.5	93.0	94.0	94.3	96.0	94.3
Try cocaine powder once or twice [9]	18	—	—	—	—	—	—	—	45.3	51.7	53.8	53.9	53.6	57.1	53.2	55.4	52.0	53.2	51.4	48.5
	19–22	—	—	—	—	—	—	—	44.0	48.6	51.1	54.5	52.7	56.2	49.7	62.0	55.8	57.1	53.8	53.0
	23–26	—	—	—	—	—	—	—	41.0	43.6	48.4	48.9	47.4	45.9	45.6	52.5	48.9	57.2	53.6	54.1
	27–30	—	—	—	—	—	—	—	—	42.0	45.1	46.2	43.3	42.3	49.9	47.1	48.2	48.9	49.1	49.8
Take cocaine powder occasionally [9]	18	—	—	—	—	—	—	—	56.8	61.9	65.8	71.1	69.8	70.8	68.6	70.6	69.1	68.8	67.7	65.4
	19–22	—	—	—	—	—	—	—	58.0	59.0	63.2	70.0	69.9	72.6	70.6	75.4	73.0	77.4	70.7	73.0
	23–26	—	—	—	—	—	—	—	50.0	53.2	62.2	63.3	67.0	65.8	64.0	68.8	68.8	76.1	72.8	77.0
	27–30	—	—	—	—	—	—	—	—	53.6	52.7	60.9	59.2	61.2	64.3	61.0	65.9	68.2	69.7	68.5
Take cocaine powder regularly [9]	18	—	—	—	—	—	—	—	81.4	82.9	83.9	90.2	88.9	88.4	87.0	88.6	87.8	86.8	86.0	84.1
	19–22	—	—	—	—	—	—	—	86.6	87.6	91.3	92.5	93.8	92.1	94.0	94.9	93.5	93.8	92.8	91.5
	23–26	—	—	—	—	—	—	—	82.9	84.1	88.5	92.4	93.8	91.3	92.4	92.8	92.1	94.8	90.8	93.7
	27–30	—	—	—	—	—	—	—	—	85.1	86.7	92.7	91.1	91.5	92.5	90.7	92.7	91.7	93.0	92.3
Try heroin once or twice [7,16]	18	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8	55.4	55.2	50.9	50.7	52.8	50.9	52.5	56.7	57.8
	19–22	57.8	56.8	54.4	52.5	58.7	51.0	55.5	57.9	58.9	59.6	58.3	59.9	59.8	58.9	60.8	58.9	61.0	63.9	60.7
	23–26	—	—	—	—	58.2	59.2	60.8	66.6	65.4	62.3	64.1	62.4	63.7	65.0	63.3	64.1	63.5	67.3	67.3
	27–30	—	—	—	—	—	—	—	—	66.0	69.7	67.5	66.1	66.5	69.3	69.6	66.4	66.4	67.9	69.7
Take heroin occasionally [7,17,46]	18	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	75.5	76.6	74.9	74.2	72.0	72.1	71.0	74.8	76.3	76.9
	19–22	77.5	77.8	73.6	74.5	74.9	73.6	77.2	77.6	77.5	79.8	80.8	80.2	81.6	78.8	79.0	77.9	82.1	84.7	80.4
	23–26	—	—	—	—	81.2	80.7	78.9	84.5	82.4	80.8	83.4	84.4	81.5	82.1	80.8	85.3	82.4	86.5	83.9
	27–30	—	—	—	—	—	—	—	—	86.0	86.8	85.3	84.3	84.9	86.2	86.8	83.1	83.8	85.8	86.6
Take heroin regularly [7]	18	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5	90.2	89.6	89.2	88.3	88.0	87.2	89.5	88.9	89.1
	19–22	87.2	89.9	87.5	88.6	86.8	90.2	90.7	90.2	89.6	90.8	91.2	91.5	92.2	89.2	91.2	89.9	94.0	93.7	92.4
	23–26	—	—	—	—	92.0	90.1	90.6	92.8	91.5	91.3	91.0	92.6	91.3	91.6	93.0	93.5	92.7	94.4	93.4
	27–30	—	—	—	—	—	—	—	—	92.7	93.5	93.0	90.7	91.3	92.6	93.8	92.4	92.1	93.8	95.0
Try narcotics other than heroin once or twice [8,24,36]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take narcotics other than heroin regularly [8]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try amphetamines once or twice [2,8,18,62]	18	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8	32.2	36.3	32.6	31.3	31.4	28.8	30.8	31.0	35.3
	19–22	24.6	24.6	27.8	24.8	26.9	23.9	27.1	27.4	31.7	28.9	35.6	32.8	34.5	33.3	36.3	32.9	36.8	30.1	31.7
	23–26	—	—	—	—	29.6	29.4	29.4	34.1	33.2	32.5	35.3	31.0	32.7	32.6	32.9	34.3	34.9	37.8	40.9
	27–30	—	—	—	—	—	—	—	—	35.2	37.5	36.9	36.5	36.2	34.0	37.5	36.0	36.2	34.5	37.6
Take amphetamines regularly [2,8,47]	18	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2	71.2	74.1	72.4	69.9	67.0	65.9	66.8	66.0	67.7
	19–22	71.9	69.9	68.3	69.9	68.4	68.5	72.3	72.0	73.9	71.3	74.0	77.1	73.5	73.5	71.6	72.2	75.8	72.3	71.9
	23–26	—	—	—	—	75.8	77.2	75.6	78.2	77.4	76.7	77.8	79.4	76.4	76.2	73.6	80.5	78.5	79.1	77.5
	27–30	—	—	—	—	—	—	—	—	80.6	82.9	83.3	79.4	80.3	79.8	78.4	77.7	75.6	77.4	81.1
Try crystal methamphetamine (ice) [8]	18	—	—	—	—	—	—	—	—	—	—	—	61.6	61.9	57.5	58.3	54.4	55.3	54.4	52.7
	19-22	—	—	—	—	—	—	—	—	—	—	57.8	58.6	57.7	57.5	61.4	58.9	61.1	56.4	55.8
	23–26	—	—	—	—	—	—	—	—	—	—	56.5	56.0	55.6	52.0	61.0	57.8	64.1	60.7	58.2
	27–30	—	—	—	—	—	—	—	—	—	—	59.6	57.2	52.7	60.3	57.9	58.5	59.1	59.8	59.9

(Years Cont.)

(Table continued on next page.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Try crack once or twice [8]	18	48.2	48.4	49.4	50.8	47.3	47.8	48.4	47.8	47.3	47.5	48.4	50.2	51.7	52.0	55.6	54.5	53.6	53.9	51.6	51.3	50.2	§	—
	19–22	56.1	52.9	54.1	54.1	55.1	56.8	56.6	55.3	51.9	54.9	54.9	53.7	56.6	—	—	—	—	—	—	—	—	—	—
	23–26	64.6	63.2	59.8	60.9	58.5	56.4	60.6	54.7	58.4	50.5	50.6	58.4	61.6	—	—	—	—	—	—	—	—	—	—
	27–30	65.0	62.9	69.3	67.4	66.0	62.6	61.9	56.8	64.1	56.2	56.2	62.2	60.4	—	—	—	—	—	—	—	—	—	—
Take crack occasionally [8]	18	67.3	65.8	65.4	65.6	64.0	64.5	63.8	64.8	63.6	65.2	64.7	64.3	66.2	66.5	69.5	68.5	67.8	66.2	65.3	64.4	62.7	§	—
	19–22	75.5	74.9	72.3	75.3	75.3	76.0	75.0	72.8	77.7	75.7	75.7	73.6	74.8	—	—	—	—	—	—	—	—	—	—
	23–26	81.6	84.0	80.1	82.2	77.1	76.4	78.6	76.8	79.8	75.2	75.2	77.7	82.8	—	—	—	—	—	—	—	—	—	—
	27–30	79.8	81.6	84.4	81.5	81.9	82.1	79.5	82.8	79.1	77.3	77.3	80.1	79.6	—	—	—	—	—	—	—	—	—	—
Take crack regularly [8]	18	85.4	85.3	85.8	84.1	83.2	83.5	83.3	82.8	82.6	83.4	84.0	83.8	83.9	84.0	85.4	82.0	81.2	81.9	79.8	79.8	79.0	§	—
	19–22	92.3	91.1	89.6	91.1	93.8	93.3	92.5	90.3	90.3	93.6	93.6	93.1	90.8	—	—	—	—	—	—	—	—	—	—
	23–26	94.4	95.6	93.4	94.7	92.2	92.5	93.1	93.3	93.1	91.8	91.8	93.7	94.1	—	—	—	—	—	—	—	—	—	—
	27–30	95.2	93.5	96.8	94.2	94.4	94.0	95.2	94.1	93.6	93.1	93.1	93.9	92.6	—	—	—	—	—	—	—	—	—	—
Try cocaine powder once or twice [9]	18	46.1	47.0	49.0	49.5	46.2	45.4	46.2	45.8	45.1	45.1	46.5	48.2	48.0	48.1	49.9	49.9	49.0	49.3	45.1	44.9	45.4	§	—
	19–22	47.9	48.0	47.1	47.9	49.4	48.7	50.2	48.7	46.8	48.3	48.3	44.4	51.3	52.2	51.3	52.8	52.9	52.6	50.4	49.2	—	—	—
	23–26	53.8	53.2	53.9	52.5	50.8	46.0	53.3	45.8	48.1	44.1	44.2	43.9	47.4	52.5	47.4	48.9	49.2	48.4	47.0	44.8	—	—	—
	27–30	49.7	52.2	53.3	54.4	56.6	52.5	52.9	49.0	53.6	47.2	47.2	52.1	48.3	53.5	48.3	51.2	49.8	48.5	45.5	47.2	—	—	—
Take cocaine powder occasionally [9]	18	64.2	64.7	63.2	64.4	61.4	61.6	60.8	61.9	59.9	61.6	62.6	62.6	64.2	62.6	65.4	64.8	62.8	62.9	60.1	59.8	59.9	§	—
	19–22	69.3	69.3	64.4	68.9	69.3	68.6	68.1	66.4	67.1	68.5	68.5	63.7	64.5	69.4	64.5	69.7	70.3	68.2	67.8	67.6	—	—	—
	23–26	70.8	76.0	70.5	73.7	67.9	64.6	69.9	66.7	69.9	64.5	64.5	65.5	68.2	73.0	68.2	65.9	66.6	64.1	63.9	63.4	—	—	—
	27–30	70.1	71.3	73.5	71.9	71.7	71.5	71.7	73.1	69.3	64.9	65.0	68.9	68.8	71.0	68.8	67.3	64.8	64.2	62.7	64.3	—	—	—
Take cocaine powder regularly [9]	18	84.6	85.5	84.4	84.2	82.3	81.7	82.7	82.1	81.5	82.5	83.4	81.8	83.3	83.3	83.9	81.5	80.1	80.7	78.8	77.6	77.4	§	—
	19–22	92.4	90.7	89.8	91.0	92.0	91.6	90.7	89.1	89.5	92.3	92.3	90.7	91.0	88.3	90.2	88.6	89.6	89.8	87.3	87.3	—	—	—
	23–26	93.6	94.2	92.2	93.4	89.1	89.4	91.2	92.9	92.3	90.5	90.5	91.0	93.8	90.6	88.7	86.1	88.1	87.3	88.4	87.6	—	—	—
	27–30	93.1	91.5	94.0	93.3	94.1	93.1	93.9	92.4	92.5	90.1	90.2	92.1	91.5	92.2	90.9	89.2	91.4	89.2	85.3	87.3	—	—	—
Try heroin once or twice [7,16]	18	56.0	54.2	55.6	56.0	58.0	56.6	55.2	59.1	58.4	55.5	59.3	58.3	59.1	59.4	61.7	62.8	64.0	64.5	63.0	61.8	62.6	§	—
	19–22	63.5	63.2	64.0	63.1	64.6	67.3	66.5	65.0	69.6	67.7	67.3	64.2	66.5	66.8	68.9	66.1	70.4	70.5	70.9	73.4	73.1	70.8	-2.3
	23–26	68.0	70.7	71.9	69.8	70.6	67.5	69.2	67.0	68.3	70.1	69.2	75.6	71.3	74.8	69.2	70.8	72.0	74.2	73.7	76.2	78.4	79.1	+0.6
	27–30	70.1	67.4	68.2	70.9	72.3	68.4	74.4	70.8	70.2	70.2	67.6	69.6	69.1	70.4	72.7	71.7	74.5	72.6	74.3	77.8	75.6	79.2	+3.6
Take heroin occasionally [7,17,46]	18	77.3	74.6	75.9	76.6	78.5	75.7	76.0	79.1	76.2	75.3	79.7	74.8	77.2	78.0	78.2	77.9	78.0	78.7	74.6	75.0	75.7	§	—
	19–22	82.5	82.0	83.6	82.2	84.9	85.1	83.8	84.3	85.4	84.5	83.3	81.3	82.9	82.1	85.0	83.3	85.8	85.9	86.3	84.2	84.1	79.4	-4.7 s
	23–26	88.5	86.6	88.4	90.0	88.3	86.7	87.5	85.2	86.5	88.0	87.8	90.0	88.6	84.2	85.1	85.9	86.0	87.4	87.1	87.6	88.2	86.6	-1.6
	27–30	87.1	86.5	86.4	87.9	87.4	88.6	91.2	88.3	88.5	87.7	87.7	90.1	85.8	86.2	88.6	83.7	88.2	85.0	89.4	87.6	87.6	88.4	+0.7
Take heroin regularly [7]	18	89.9	89.2	88.3	88.5	89.3	86.8	87.5	89.7	87.8	86.4	89.9	85.5	87.9	88.6	87.6	85.7	84.8	85.4	83.3	81.4	81.2	§	—
	19–22	92.8	94.0	91.3	92.6	93.9	94.3	94.9	94.2	93.6	92.3	92.6	90.8	91.8	93.8	93.5	94.0	93.3	93.2	94.9	93.5	91.1	90.4	-0.7
	23–26	93.7	94.8	95.9	96.3	96.5	96.0	94.8	95.8	93.1	95.7	94.5	97.1	94.2	92.5	95.0	96.2	92.5	95.3	94.8	94.5	95.3	95.9	+0.6
	27–30	93.7	94.2	94.5	95.9	94.9	95.0	97.3	95.3	94.8	95.4	93.9	97.2	94.7	93.6	96.2	96.1	95.6	94.5	95.9	94.1	95.3	95.5	+0.2
Try narcotics other than heroin once or twice [8,24,36]	18	—	—	—	—	—	—	—	—	—	—	—	40.4	39.9	38.4	43.1	42.7	44.1	43.6	42.0	43.2	45.0	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	47.3	46.1	49.8	50.6	49.9	47.8	54.0	60.9	59.5	-1.4
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	45.3	44.1	45.2	46.4	45.8	45.7	53.3	55.8	61.8	+6.0
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	43.0	47.3	48.5	45.6	45.8	43.7	52.0	57.5	59.7	+2.1
Take narcotics other than heroin regularly [8]	18	—	—	—	—	—	—	—	—	—	—	—	74.9	75.5	73.9	75.8	72.7	73.9	72.4	70.8	71.6	73.1	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	70.3	74.9	76.0	76.2	76.2	73.2	78.3	82.3	79.3	-3.0
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	78.2	75.6	75.8	75.6	76.3	77.8	80.4	87.5	84.5	-3.0
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	76.2	75.7	76.0	74.9	76.7	78.1	79.5	85.9	86.4	+0.4
Try amphetamines once or twice [2,8,18,62]	18	32.2	32.6	34.7	34.4	36.8	35.7	37.7	39.5	41.3	39.2	41.9	40.6	34.8	34.3	36.3	34.1	34.0	31.1	31.9	29.2	29.7	§	—
	19–22	33.7	35.0	34.2	38.1	40.2	36.8	38.3	40.0	38.4	42.1	39.3	40.8	34.7	31.9	33.8	32.8	34.5	32.2	36.8	33.0	33.6	30.6	-3.0
	23–26	41.8	39.9	41.6	38.0	38.3	33.2	39.1	37.0	38.0	40.8	40.7	42.2	31.4	37.8	31.4	37.4	33.5	34.0	26.1	34.2	27.8	29.7	+1.8
	27–30	36.3	39.4	38.5	39.0	40.5	39.2	38.2	39.7	37.4	36.5	36.2	38.5	36.9	35.3	34.0	30.4	32.1	30.5	31.6	33.4	28.2	38.7	+10.6 ss
Take amphetamines regularly [2,8,47]	18	66.4	66.3	67.1	64.8	65.6	63.9	67.1	68.1	68.1	65.4	69.0	63.6	58.7	60.0	59.5	55.1	54.3	51.3	50.0	51.1	48.4	§	—
	19–22	72.4	73.4	71.1	72.7	75.0	72.4	74.1	72.1	73.8	74.2	74.7	76.9	66.1	69.8	63.9	65.3	63.8	61.5	60.4	58.0	59.7	56.3	-3.4
	23–26	78.7	79.0	77.7	77.9	80.1	75.1	80.1	78.3	77.0	76.5	73.9	80.8	69.7	68.3	64.9	68.5	59.0	65.8	57.8	61.1	57.2	65.7	+8.5 s
	27–30	82.6	80.8	79.9	79.8	81.5	77.6	78.9	78.9	77.6	78.9	80.1	81.3	75.1	73.5	67.8	65.6	65.1	62.6	64.9	66.0	61.9	66.7	+4.8
Try crystal methamphetamine (ice) [8]	18	51.2	51.3	52.7	53.8	51.2	52.4	54.6	59.1	60.2	62.2	63.4	64.9	66.5	67.8	72.2	70.2	70.0	70.0	69.3	67.1	67.1	§	—
	19-22	50.6	49.2	52.5	56.5	60.0	60.3	63.1	63.5	65.0	70.0	70.0	70.7	74.2	—	—	—	—	—	—	—	—	—	—
	23–26	61.3	60.1	59.2	57.7	58.6	55.9	63.9	63.9	66.6	65.6	65.6	70.1	74.6	—	—	—	—	—	—	—	—	—	—
	27–30	61.0	59.7	66.4	62.5	66.6	62.8	62.6	64.9	67.9	62.0	62.0	70.2	72.9	—	—	—	—	—	—	—	—	—	—

(List of drugs continued.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Try bath salts (synthetic stimulants) once or twice [8,22]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take bath salts (synthetic stimulants) occasionally [8]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Adderall once or twice [8,23]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take Adderall occasionally [8]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try sedatives/ barbiturates once or twice [3,8,19,20,63]	18	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	32.2	32.4	35.1	32.2	29.2	29.9	26.3	29.1	26.9	29.0
	19–22	27.6	26.4	30.5	25.4	29.9	25.0	30.7	29.6	32.7	30.5	36.4	33.5	33.5	33.4	35.0	30.5	34.1	31.4	27.7
	23–26	—	—	—	—	32.2	29.9	30.2	35.5	35.8	32.9	37.9	31.8	33.5	32.8	34.0	34.8	35.8	37.3	40.3
	27–30	—	—	—	—	—	—	—	—	37.2	38.7	39.0	37.0	38.2	36.5	40.5	36.6	37.2	35.7	36.7
Take sedatives/ barbiturates regularly [3,8,21,35]	18	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	70.5	70.2	70.5	70.2	66.1	63.3	61.6	60.4	56.8	56.3
	19–22	74.0	73.3	72.7	71.3	71.6	71.7	74.5	73.0	74.0	71.7	75.5	75.5	73.6	71.1	69.4	66.4	70.7	69.5	65.1
	23–26	—	—	—	—	77.4	77.0	74.9	79.9	79.8	76.6	80.5	77.7	76.3	75.0	74.3	77.6	77.1	75.2	73.9
	27–30	—	—	—	—	—	—	—	—	81.5	83.7	84.0	79.6	78.6	80.2	78.3	77.7	74.1	77.1	79.9
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) [9]	18	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	6.0	8.3	9.1	8.6	8.2	7.6	5.9	7.3	6.7	8.0
	19–22	3.0	3.4	3.1	2.3	4.7	3.1	5.4	3.5	3.9	5.9	6.1	5.4	5.8	6.6	6.5	4.5	3.3	3.2	4.2
	23–26	—	—	—	—	5.5	3.0	6.5	6.6	4.2	5.1	5.7	4.4	5.6	3.2	4.5	4.3	4.8	4.4	4.4
	27–30	—	—	—	—	—	—	—	—	5.0	6.3	4.4	6.6	5.6	4.7	4.1	6.7	4.7	4.0	6.2
Take one or two drinks nearly every day [12,48]	18	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5	31.3	32.7	30.6	28.2	27.0	24.8	25.1	24.8	24.3
	19–22	22.7	22.9	23.2	23.2	25.0	26.3	27.3	26.1	26.5	28.1	30.1	29.1	30.2	28.0	27.5	24.0	23.0	24.2	22.1
	23–26	—	—	—	—	27.8	27.4	26.9	30.2	29.1	27.8	31.1	30.4	31.6	25.9	26.2	26.1	22.0	20.2	21.0
	27–30	—	—	—	—	—	—	—	—	27.4	31.7	32.2	31.7	30.9	28.0	27.4	27.2	24.0	24.8	20.8
Take four or five drinks nearly every day [12,64]	18	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	69.8	70.9	69.5	70.5	67.8	66.2	62.8	65.6	63.0	62.1
	19–22	71.2	72.7	73.3	72.7	76.2	74.1	74.0	76.4	72.8	75.7	76.1	75.5	71.8	72.1	70.3	72.5	68.5	71.4	70.4
	23–26	—	—	—	—	76.7	77.9	80.1	77.2	81.8	76.9	79.7	80.2	78.0	76.7	77.5	75.2	72.0	75.1	69.3
	27–30	—	—	—	—	—	—	—	—	79.3	81.7	84.7	79.1	79.9	79.1	76.6	82.2	76.1	79.3	75.7
Have five or more drinks once or twice each weekend [9]	18	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0	47.1	48.6	49.0	48.3	46.5	45.2	49.5	43.0	42.8
	19–22	34.2	30.1	33.5	36.6	37.9	40.2	34.6	36.7	36.9	42.4	40.6	40.8	41.8	42.4	41.9	39.9	40.7	36.6	42.0
	23–26	—	—	—	—	38.4	39.7	39.1	39.8	35.8	37.7	40.2	39.3	37.6	36.2	40.2	37.9	39.1	37.4	41.1
	27–30	—	—	—	—	—	—	—	—	41.0	42.3	44.1	42.2	45.1	42.9	43.2	44.6	41.5	40.0	40.2
Smoke one or more packs of cigarettes per day [6]	18	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2	69.4	69.2	69.5	67.6	65.6	68.2	68.7	70.8
	19–22	66.5	61.7	64.0	62.1	69.1	71.4	70.4	70.6	71.0	73.4	72.5	77.9	72.6	76.0	71.2	71.6	73.8	76.3	77.2
	23–26	—	—	—	—	71.1	70.1	75.7	73.6	75.5	71.4	78.5	75.3	76.3	78.4	76.4	76.0	76.0	77.6	76.5
	27–30	—	—	—	—	—	—	—	—	72.8	75.2	77.8	75.4	77.6	75.0	75.3	75.6	73.0	80.3	80.9
Vape an e-liquid with nicotine occasionally [31,49,65]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly [31,66,67,68]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape marijuana occasionally [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape marijuana regularly [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Try bath salts (synthetic stimulants) once or twice [8,22]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	33.2	59.5	59.2	57.5	54.9	51.3	50.7	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	44.5	62.7	68.8	65.2	69.6	68.4	63.3	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	46.7	66.3	67.3	69.4	70.9	68.6	74.8	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	48.7	64.5	73.7	72.4	73.3	72.1	77.0	—	—	—
Take bath salts (synthetic stimulants) occasionally [8]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	45.0	69.9	68.8	67.4	64.2	61.5	60.7	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	52.6	70.1	76.1	75.3	78.8	78.6	72.5	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	54.0	75.3	76.7	77.7	78.7	78.8	81.8	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	55.9	71.5	78.4	77.4	80.7	81.4	85.4	—	—	—
Try Adderall once or twice [8,23]	18	—	—	—	—	—	—	—	—	—	—	—	33.3	31.2	27.2	31.8	33.6	34.3	32.5	32.0	34.0	34.3	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	30.0	27.7	31.5	27.5	30.6	32.9	32.0	29.9	27.7	-2.2
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	28.9	32.9	32.2	29.8	32.9	27.5	30.1	25.9	21.9	-4.0
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	29.4	32.7	35.9	33.2	37.0	32.4	36.8	32.9	29.6	-3.3
Take Adderall occasionally [8]	18	—	—	—	—	—	—	—	—	—	—	—	41.6	40.8	35.3	38.8	41.5	41.6	40.9	40.6	40.1	41.8	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	38.8	39.8	41.8	40.2	43.0	45.4	47.3	47.3	43.3	-4.0
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7	44.8	44.9	41.3	42.5	37.1	42.6	41.9	37.6	-4.3
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	44.1	45.0	45.3	44.2	47.7	46.5	49.3	43.4	41.7	-1.6
Try sedatives/ barbiturates once or twice [3,8,19,20,63]	18	26.1	25.0	25.7	26.2	27.9	24.9	24.7	28.0	27.9	25.9	29.6	28.0	27.8	27.8	29.4	29.6	28.9	27.4	26.9	26.3	25.2	§	—
	19–22	28.5	30.3	30.0	30.7	32.7	26.7	26.9	28.9	28.1	31.9	26.2	28.7	30.1	32.8	30.5	32.7	32.1	33.5	37.1	30.6	30.9	28.0	-2.9
	23–26	39.4	37.0	38.5	34.7	36.5	22.2	29.8	26.3	25.9	28.4	31.1	36.2	28.8	35.9	31.8	34.8	33.9	31.3	30.6	29.7	34.4	34.9	+0.5
	27–30	35.2	36.3	40.9	37.3	38.6	31.4	31.7	28.8	28.0	27.8	27.5	27.4	34.4	28.7	31.9	25.0	34.2	34.8	30.4	37.2	28.2	39.3	+11.1 ss
Take sedatives/ barbiturates regularly [3,8,21,35]	18	54.1	52.3	50.3	49.3	49.6	54.0	54.1	56.8	55.1	50.2	54.7	52.1	52.4	53.9	53.3	50.5	50.6	47.0	44.0	45.1	45.0	§	—
	19–22	64.7	64.6	61.8	64.5	63.8	60.2	64.4	61.3	63.2	64.0	59.4	64.6	63.6	68.2	64.7	66.9	63.0	63.8	64.6	59.6	58.0	59.3	+1.3
	23–26	75.1	73.8	73.1	73.1	72.8	63.9	67.0	67.6	64.8	66.8	64.4	69.6	64.9	71.4	67.6	72.3	64.5	65.2	62.9	68.8	62.9	70.0	+7.1
	27–30	80.7	75.5	78.2	75.4	79.0	70.1	75.2	68.0	70.0	70.4	69.0	71.1	71.4	70.7	72.6	64.2	67.0	66.6	64.4	71.6	64.3	70.0	+5.7
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) [9]	18	8.3	6.4	8.7	7.6	8.4	8.6	8.5	9.3	10.5	10.0	9.4	10.8	9.4	8.7	9.9	8.6	10.3	9.5	9.3	10.2	9.7	§	—
	19–22	5.7	5.4	4.8	6.6	7.5	5.1	3.8	7.7	5.1	7.9	4.1	6.8	7.2	6.4	5.8	5.7	4.9	4.9	6.5	5.9	5.0	4.1	-0.9
	23–26	6.6	3.5	5.5	5.1	5.7	4.7	5.3	5.1	4.8	6.5	5.7	5.5	4.0	3.5	4.3	5.4	5.1	3.9	4.1	3.3	2.7	2.6	-0.1
	27–30	5.9	4.7	5.5	3.1	6.9	4.6	7.3	4.2	6.2	3.4	4.1	4.7	6.6	4.8	4.0	3.8	3.5	3.4	3.3	3.8	2.6	3.4	+0.7
Take one or two drinks nearly every day [12,48]	18	21.8	21.7	23.4	21.0	20.1	23.0	23.7	25.3	25.1	24.2	23.7	25.4	24.6	23.7	23.1	21.1	21.5	21.6	21.6	22.8	21.0	§	—
	19–22	23.9	22.1	19.6	22.7	19.8	21.3	22.1	22.0	19.0	24.4	20.6	20.8	20.1	23.1	20.0	22.4	19.9	18.6	17.8	18.3	19.2	14.9	-4.4 s
	23–26	26.0	21.7	23.5	23.4	19.1	22.9	19.9	22.5	21.2	21.0	21.1	20.8	14.4	18.4	18.8	17.5	17.2	17.4	15.4	16.8	16.5	15.2	-1.3
	27–30	25.3	22.0	22.7	21.7	21.4	21.8	23.7	20.2	21.5	21.5	20.6	18.2	16.9	19.8	17.4	16.5	15.9	15.9	15.4	17.1	15.3	15.1	-0.3
Take four or five drinks nearly every day [12,64]	18	61.1	59.9	60.7	58.8	57.8	59.2	61.8	63.4	61.8	60.8	62.4	61.1	62.3	63.6	62.4	61.2	59.1	59.1	58.7	59.1	59.7	§	—
	19–22	69.9	69.9	64.5	71.1	66.4	65.3	63.0	66.6	68.8	68.5	67.1	65.6	67.4	69.6	68.7	67.9	70.2	70.4	65.1	66.8	67.3	63.9	-3.4
	23–26	72.8	71.7	75.8	74.9	71.1	74.2	71.2	72.4	70.2	70.0	67.8	68.3	69.9	73.1	69.7	69.2	71.2	70.7	70.1	70.0	74.9	66.3	-8.6 sss
	27–30	75.1	77.4	72.8	76.2	70.6	72.1	77.5	73.0	76.5	77.1	71.6	71.6	73.8	71.2	68.3	72.6	69.4	71.1	70.0	70.5	72.1	68.7	-3.4
Have five or more drinks once or twice each weekend [9]	18	43.1	42.7	43.6	42.2	43.5	43.6	45.0	47.6	45.8	46.3	48.0	46.3	47.6	48.8	45.8	45.4	46.9	48.4	45.7	44.7	46.4	§	—
	19–22	37.2	38.9	37.2	37.8	40.4	38.1	37.5	37.2	43.4	41.7	35.2	40.7	40.1	41.6	40.6	43.8	41.8	43.6	39.6	40.3	39.1	37.0	-2.2
	23–26	40.2	34.9	39.0	36.8	36.3	37.9	36.8	38.4	39.7	37.0	36.2	35.8	33.6	39.5	40.2	38.7	40.8	39.7	37.8	38.6	36.9	36.1	-0.8
	27–30	41.9	37.9	41.6	40.6	42.5	40.5	44.0	39.1	40.4	40.4	40.1	38.6	42.0	41.6	37.2	41.2	40.6	39.6	42.0	40.2	38.8	36.8	-2.0
Smoke one or more packs of cigarettes per day [6]	18	70.8	73.1	73.3	74.2	72.1	74.0	76.5	77.6	77.3	74.0	74.9	75.0	77.7	78.2	78.2	78.0	75.9	76.5	74.9	73.9	75.6	§	—
	19–22	75.7	77.1	76.6	80.6	77.8	81.1	80.5	80.8	79.3	79.5	80.3	79.7	81.5	82.3	82.8	82.8	83.5	84.8	83.8	82.4	82.5	79.9	-2.6
	23–26	80.9	79.7	83.9	85.1	83.6	84.1	81.6	86.4	80.7	83.6	82.0	83.2	84.8	83.1	82.9	82.8	85.1	84.2	84.3	84.9	85.0	84.0	-1.0
	27–30	80.7	78.4	82.7	80.6	82.0	81.7	84.1	83.8	84.3	86.6	83.6	89.3	86.6	84.6	84.1	83.9	85.9	85.4	86.3	84.2	86.3	86.7	+0.4
Vape an e-liquid with nicotine occasionally [31,49,65]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16.4	15.8	17.7	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.9	21.4	+1.5
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.3	22.9	+3.6
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.4	26.2	+5.8 ss
Vape an e-liquid with nicotine regularly [31,66,67,68]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.0	27.7	35.2	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.6	49.2	+7.6 ss
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.8	49.7	+7.9 ss
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.9	52.1	+11.2 sss
Vape marijuana occasionally [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.9	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.7	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.2	—
Vape marijuana regularly [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.4	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.8	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.2	—

↓
(List of drugs continued.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying "great risk" [a]

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	(Years Cont.)
Use smokeless tobacco regularly [8,50]	18	—	—	—	—	—	—	25.8	30.0	33.2	32.9	34.2	37.4	35.5	38.9	36.6	33.2	37.4	38.6	40.9	
	19–22	—	—	—	—	—	—	29.7	34.1	31.1	37.1	33.5	38.9	40.1	43.3	37.6	42.3	40.9	46.5	47.4	
	23–26	—	—	—	—	—	—	37.0	38.5	35.8	37.9	40.1	38.9	41.6	44.6	42.9	46.6	47.2	46.2	48.4	
	27–30	—	—	—	—	—	—	—	—	42.8	42.8	43.8	44.3	44.1	47.3	46.3	44.2	43.6	50.2	52.6	
Approximate Weighted N Per Form =	18	*3,234*	*3,604*	*3,557*	*3,305*	*3,262*	*3,250*	*3,020*	*3,315*	*3,276*	*2,796*	*2,553*	*2,549*	*2,684*	*2,759*	*2,591*	*2,603*	*2,449*	*2,579*	*2,564*	
	19–22	*590*	*585*	*583*	*585*	*579*	*547*	*581*	*570*	*551*	*565*	*552*	*533*	*527*	*480*	*490*	*500*	*469*	*464*	*431*	
	23–26					*540*	*512*	*545*	*531*	*527*	*498*	*511*	*505*	*518*	*503*	*465*	*446*	*438*	*420*	*413*	
	27–30									*513*	*587*	*490*	*486*	*482*	*473*	*443*	*450*	*422*	*434*	*416*	

(Table continued on next page.)

TABLE 6-1 (cont.)
Trends in Perceived Risk
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Age Group	Percentage saying "great risk" [a]																						
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Use smokeless tobacco regularly [8,50]	18	41.1	42.2	45.4	42.6	43.3	45.0	43.6	45.9	44.0	42.9	40.8	41.2	42.6	44.3	41.6	40.7	38.5	38.1	38.4	40.2	39.9	§	—
	19–22	47.0	52.0	48.4	53.6	50.8	49.9	47.6	46.4	48.9	48.7	44.6	45.8	46.0	56.7	52.8	47.8	47.8	48.7	51.4	47.8	52.4	42.5	-9.9 s
	23–26	53.1	49.8	59.8	61.4	58.9	57.8	55.8	59.1	55.3	51.0	52.2	54.2	53.7	59.4	53.5	53.4	47.3	52.5	54.6	50.6	56.5	54.8	-1.7
	27–30	53.6	49.9	53.2	56.7	58.2	55.7	58.9	57.5	61.4	61.7	53.6	59.2	62.5	59.6	58.5	51.6	57.1	59.8	55.8	57.3	55.0	57.4	+2.4
Approximate Weighted N Per Form =	18	*2,306*	*2,130*	*2,173*	*2,198*	*2,466*	*2,491*	*2,512*	*2,407*	*2,450*	*2,389*	*2,290*	*2,440*	*2,408*	*2,331*	*2,098*	*2,067*	*2,174*	*1,992*	*2,175*	*2,243*	*1,000*	§	
	19–22	*447*	*424*	*430*	*395*	*402*	*447*	*412*	*411*	*375*	*377*	*393*	*363*	*374*	*345*	*337*	*314*	*315*	*270*	*281*	*283*	*265*	*282*	
	23–26	*418*	*400*	*392*	*382*	*401*	*426*	*408*	*361*	*351*	*375*	*345*	*363*	*366*	*323*	*337*	*319*	*296*	*284*	*264*	*267*	*267*	*303*	
	27–30	*400*	*377*	*384*	*369*	*380*	*388*	*374*	*358*	*344*	*350*	*337*	*343*	*319*	*335*	*320*	*282*	*312*	*259*	*284*	*266*	*268*	*272*	

Source. The Monitoring the Future study, the University of Michigan.

TABLE 6-2
Trends in Proportions Disapproving of Drug Use among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage disapproving [e]

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Trying marijuana once or twice [10,26,51]	18	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6	67.8	68.7	69.9	63.3	57.6	56.7	52.5	51.0	51.6	48.8
	19–22	38.2	36.1	37.0	42.0	44.1	46.6	51.6	52.8	55.8	62.4	59.6	60.4	57.8	60.6	63.5	57.1	55.4	56.2	55.9	54.0
	23–26	—	—	—	—	41.2	38.6	42.6	49.1	48.7	52.5	57.5	58.8	55.0	54.6	52.3	51.9	56.3	54.5	55.3	55.7
	27–30	—	—	—	—	—	—	—	—	49.0	50.9	53.8	54.6	51.9	56.8	55.7	57.5	54.1	59.0	55.7	52.6
Using marijuana occasionally [10,52]	18	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2	80.5	79.4	79.7	75.5	68.9	66.7	62.9	63.2	64.4	62.5
	19–22	49.6	49.1	51.3	56.0	60.4	62.6	66.7	67.2	69.5	77.3	76.3	77.0	74.8	75.8	76.9	70.4	68.9	70.2	67.8	66.4
	23–26	—	—	—	—	54.8	52.8	57.0	64.9	63.4	69.4	73.7	73.3	74.0	71.9	70.9	68.1	72.5	69.2	70.4	71.1
	27–30	—	—	—	—	—	—	—	—	65.3	67.1	68.9	73.0	67.2	72.2	69.4	72.5	70.5	74.5	72.4	71.5
Using marijuana regularly [10,27,40,53,54]	18	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8	91.0	89.3	90.1	87.6	82.3	81.9	80.0	78.8	81.2	78.6
	19–22	74.3	77.2	80.0	81.8	84.9	86.7	89.2	88.7	89.1	91.2	93.1	91.3	89.5	90.2	90.1	86.8	87.7	88.1	85.3	84.5
	23–26	—	—	—	—	80.6	81.3	83.3	87.4	86.9	90.4	91.0	89.6	90.2	92.1	90.3	90.1	88.9	88.1	87.5	86.1
	27–30	—	—	—	—	—	—	—	—	87.6	87.5	89.7	89.6	87.2	89.4	88.7	91.9	89.9	92.1	89.2	90.0
Trying LSD once or twice [8,41,55,56]	18	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7	89.8	90.1	88.1	85.9	82.5	81.1	79.6	80.5	82.1	83.0
	19–22	87.4	84.8	85.9	88.4	88.1	89.1	90.4	90.0	90.9	89.3	90.5	88.4	84.6	88.5	86.8	84.2	83.0	83.1	80.8	83.2
	23–26	—	—	—	—	87.3	87.1	88.0	89.9	91.4	91.0	90.7	89.1	88.8	86.9	87.3	87.1	86.7	87.9	84.1	84.8
	27–30	—	—	—	—	—	—	—	—	91.0	87.2	89.7	87.9	85.6	88.8	88.2	87.4	88.7	88.7	87.3	86.6
Taking LSD regularly [8,69]	18	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4	96.3	96.4	95.5	95.8	94.3	92.5	93.2	92.9	93.5	94.3
	19–22	98.2	97.4	97.7	97.6	97.6	98.8	98.5	98.0	98.1	97.5	99.1	97.5	97.0	97.8	97.7	96.8	97.0	97.4	96.3	97.0
	23–26	—	—	—	—	99.2	98.0	98.5	99.0	98.0	98.4	98.3	98.4	98.3	98.1	97.7	96.7	97.7	96.1	97.6	98.0
	27–30	—	—	—	—	—	—	—	—	98.8	97.1	98.9	98.9	97.5	98.5	98.7	98.6	98.1	97.5	97.4	97.9
Trying MDMA (ecstasy, Molly) once or twice [8,70]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	82.2	82.5	82.1
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Taking MDMA (ecstasy, Molly) occasionally [8]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trying cocaine once or twice [8,71,72]	18	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5	91.5	93.6	93.0	92.7	91.6	90.3	90.0	88.0	89.5	89.1
	19–22	73.0	69.3	69.9	74.1	72.5	77.6	78.9	82.3	85.3	88.8	90.1	91.2	90.6	92.7	93.9	94.2	92.0	91.7	89.9	90.9
	23–26	—	—	—	—	70.2	70.5	72.1	80.0	82.9	85.5	88.3	88.0	87.3	89.2	89.2	91.8	90.7	91.5	89.0	91.3
	27–30	—	—	—	—	—	—	—	—	82.1	81.0	85.5	86.9	83.9	85.7	86.6	86.6	88.3	89.2	90.3	90.4
Taking cocaine regularly [8,73]	18	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4	96.7	97.3	96.9	97.5	96.6	96.1	95.6	96.0	95.6	94.9
	19–22	91.6	89.3	91.9	94.6	95.0	96.3	97.0	97.2	97.9	97.4	98.9	97.9	98.4	97.8	98.8	98.2	97.9	98.0	97.8	97.6
	23–26	—	—	—	—	95.7	95.3	97.3	98.1	97.6	98.3	98.4	98.5	98.7	98.4	98.8	97.7	97.8	96.9	98.5	98.3
	27–30	—	—	—	—	—	—	—	—	98.1	97.0	99.3	99.0	97.2	98.7	99.0	98.9	98.5	97.9	97.8	98.8
Trying heroin once or twice [8]	18	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4	95.1	96.0	94.9	94.4	93.2	92.8	92.1	92.3	93.7	93.5
	19–22	96.3	95.4	95.6	95.2	95.1	96.2	96.8	96.3	97.1	96.4	98.3	95.9	95.9	96.3	96.6	95.6	95.2	95.6	95.1	95.5
	23–26	—	—	—	—	96.7	94.9	96.4	97.1	97.4	96.7	96.8	96.9	96.3	95.4	96.5	95.9	96.1	95.2	94.6	96.3
	27–30	—	—	—	—	—	—	—	—	97.9	95.8	97.5	96.6	94.8	97.3	94.7	96.3	96.0	96.9	95.9	96.7
Taking heroin occasionally [8]	18	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2	96.7	97.3	96.8	97.0	96.2	95.7	95.0	95.4	96.1	95.7
	19–22	98.6	97.8	98.3	98.3	98.6	98.7	98.3	98.3	98.3	97.9	99.2	98.2	98.1	98.1	98.3	97.7	97.9	97.8	98.2	97.2
	23–26	—	—	—	—	99.2	98.2	98.8	99.1	98.4	98.3	98.1	99.0	98.7	98.4	98.6	97.7	98.7	97.4	97.5	98.5
	27–30	—	—	—	—	—	—	—	—	99.2	97.3	99.0	98.9	97.0	98.9	98.7	98.9	98.0	98.7	97.6	98.8
Taking heroin regularly [8]	18	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4	97.5	97.8	97.2	97.5	97.1	96.4	96.3	96.4	96.6	96.4
	19–22	99.2	98.5	98.6	98.7	98.7	99.1	98.9	98.6	98.4	98.3	99.5	98.5	98.3	98.4	98.8	98.4	98.3	98.1	98.3	98.2
	23–26	—	—	—	—	99.4	98.8	99.1	99.4	98.7	98.7	98.5	99.3	99.2	98.9	98.8	98.7	98.9	97.6	98.5	98.7
	27–30	—	—	—	—	—	—	—	—	99.4	97.6	99.4	99.0	97.8	99.0	99.4	99.1	98.6	98.4	98.1	98.8

(Table continued on next page.)

TABLE 6-2 (cont.)
Trends in Proportions Disapproving of Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Trying marijuana once or twice [10,26,51]	18	52.5	49.1	51.6	53.4	52.7	55.0	55.6	58.6	55.5	54.8	51.6	51.3	48.8	49.1	48.0	45.5	43.1	39.0	41.1	34.1	§	—
	19–22	55.2	49.3	48.7	54.2	48.3	50.3	51.2	47.6	52.7	46.7	50.5	49.0	46.0	44.2	39.7	37.4	36.7	33.6	29.7	28.4	25.9	-2.6
	23–26	54.8	51.2	52.4	47.8	53.4	47.7	47.5	54.6	46.2	44.9	42.5	38.8	40.9	38.1	37.8	34.6	36.3	29.2	26.0	23.4	19.9	-3.6 s
	27–30	58.0	54.4	56.9	54.9	55.4	52.1	52.0	50.9	49.3	49.3	48.5	46.5	42.7	38.7	35.1	33.0	31.5	27.8	30.0	24.3	25.3	+1.0
Using marijuana occasionally [10,52]	18	65.8	63.2	63.4	64.2	65.4	67.8	69.3	70.2	67.3	65.6	62.0	60.9	59.1	58.9	56.7	52.9	50.5	46.7	49.2	41.4	§	—
	19–22	70.7	64.6	62.3	68.0	64.3	67.9	62.6	64.1	63.3	59.8	61.3	61.7	58.2	54.9	50.7	50.0	45.9	42.7	38.1	37.8	33.9	-3.8
	23–26	68.6	67.4	64.0	63.8	69.3	65.6	62.2	68.0	64.5	62.4	59.1	53.1	55.8	51.3	51.3	49.1	46.8	41.5	35.2	33.6	27.1	-6.5 sss
	27–30	72.2	70.9	69.1	71.2	69.1	68.2	68.7	67.5	63.7	63.7	62.7	63.7	58.3	55.0	50.0	47.3	44.0	39.8	39.1	32.9	32.9	+0.1
Using marijuana regularly [10,27,40,53,54]	18	79.7	79.3	78.3	78.7	80.7	82.0	82.2	83.3	79.6	80.3	77.7	77.5	77.8	74.5	73.4	70.7	68.5	64.7	66.7	63.4	§	—
	19–22	86.6	84.5	82.8	84.8	82.7	84.4	82.5	83.7	83.6	80.8	80.7	78.1	77.0	75.7	71.3	71.0	70.6	67.3	61.1	60.7	56.1	-4.6 s
	23–26	83.9	86.4	81.7	82.3	87.4	84.3	81.9	85.3	84.3	80.2	78.3	76.4	76.7	73.6	71.4	70.4	68.8	65.0	60.8	56.9	50.5	-6.4 ss
	27–30	89.5	89.3	88.8	87.7	88.6	86.3	86.4	86.8	86.0	84.4	81.7	83.2	77.8	75.9	75.0	71.8	69.0	63.5	61.9	56.5	55.1	-1.5
Trying LSD once or twice [8,41,55,56]	18	82.4	81.8	84.6	85.5	87.9	87.9	88.0	87.8	85.5	88.2	86.5	86.3	87.2	86.6	85.0	81.7	82.4	78.0	80.5	76.1	§	—
	19–22	82.3	81.4	83.7	86.2	85.0	87.6	85.4	88.5	86.5	83.0	86.7	83.3	84.0	83.5	77.8	75.5	70.3	72.5	78.5	70.4	62.7	-7.8
	23–26	80.3	83.0	79.2	80.1	84.0	84.0	84.5	87.6	81.8	85.0	82.6	80.1	83.3	79.7	79.8	76.8	73.9	73.9	66.5	66.3	56.5	-9.8 s
	27–30	87.2	85.7	82.7	85.6	82.5	82.2	82.0	84.1	82.7	84.5	85.1	85.1	82.4	81.4	82.2	77.9	80.0	71.8	72.2	67.2	63.5	-3.7
Taking LSD regularly [8,69]	18	94.2	94.0	94.0	94.4	94.6	95.6	95.9	94.9	93.5	95.3	94.3	94.9	95.2	95.3	94.7	92.5	92.4	92.7	93.4	93.8	§	—
	19–22	96.8	96.5	96.9	98.4	97.3	98.9	97.8	97.7	96.8	96.8	96.6	96.5	96.0	96.7	97.0	95.2	95.4	93.9	95.9	91.7	91.1	-0.7
	23–26	97.0	97.1	97.9	96.9	97.1	98.7	97.0	98.4	97.4	98.2	96.5	95.9	97.4	96.1	95.8	96.6	93.1	95.9	95.5	93.7	91.8	-1.9
	27–30	98.6	98.2	98.0	98.2	98.2	97.2	96.7	97.2	97.1	98.6	98.6	97.1	97.3	97.2	97.3	96.0	96.4	94.0	92.8	94.6	89.6	-5.0 s
Trying MDMA (ecstasy, Molly) once or twice [8,70]	18	81.0	79.5	83.6	84.7	87.7	88.4	89.0	87.8	88.2	88.2	86.3	83.9	87.1	84.9	83.1	84.5	84.0	85.1	85.6	89.8	§	—
	19–22	—	81.5	80.3	87.2	83.5	90.3	87.5	88.5	89.5	89.1	91.4	85.9	87.9	83.9	83.7	79.7	83.2	78.2	81.1	82.9	74.1	-8.7
	23–26	—	80.6	80.6	80.2	83.1	83.9	83.9	87.4	83.9	85.0	86.9	85.1	85.2	79.9	83.6	79.1	82.8	79.9	80.5	71.4	71.2	-0.1
	27–30	—	84.2	84.0	86.3	83.2	82.4	82.2	81.8	82.7	83.0	81.9	86.6	83.7	84.5	81.9	84.6	81.5	78.6	79.2	71.0	73.7	+2.7
Taking MDMA (ecstasy, Molly) occasionally [8]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	92.8	91.8	95.6	93.8	96.7	94.0	95.3	94.8	95.2	95.3	91.8	94.4	92.3	94.6	90.7	90.2	93.1	92.7	93.5	87.0	-6.5
	23–26	—	90.5	91.8	92.1	93.3	94.4	93.7	94.3	94.0	95.4	94.3	92.5	93.3	92.1	93.5	90.7	91.6	91.7	88.4	88.3	83.9	-4.4
	27–30	—	91.7	93.0	94.3	91.0	92.1	93.4	92.8	94.1	93.6	92.6	94.5	93.5	93.0	93.9	93.2	92.0	88.1	88.7	86.0	84.3	-1.7
Trying cocaine once or twice [8,71,72]	18	88.2	88.1	89.0	89.3	88.6	88.9	89.1	89.6	89.2	90.8	90.5	91.1	91.0	92.3	90.0	89.0	88.4	88.0	88.9	88.5	§	—
	19–22	89.9	87.7	87.9	89.3	87.7	92.3	88.2	89.2	85.8	87.8	87.1	90.1	89.7	90.5	86.7	86.0	84.3	85.6	86.8	80.3	83.1	+2.8
	23–26	87.1	90.1	85.8	86.4	87.4	88.3	84.4	87.6	84.5	86.2	86.0	82.7	86.0	85.7	84.8	82.9	77.5	80.8	77.4	79.3	72.0	-7.4 s
	27–30	89.4	90.3	88.5	91.5	88.0	87.0	85.8	87.7	87.4	88.3	87.3	87.0	85.6	82.5	85.0	79.1	83.7	75.8	78.6	78.4	71.5	-6.9
Taking cocaine regularly [8,73]	18	95.5	94.9	95.0	95.8	95.4	96.0	96.1	96.2	94.8	96.5	96.0	96.0	96.8	96.7	96.3	95.2	94.8	94.8	95.8	96.5	§	—
	19–22	98.0	97.2	97.0	98.2	98.5	98.7	98.9	99.0	97.6	97.6	97.6	97.2	97.6	97.4	97.8	97.8	97.2	97.0	97.1	95.2	96.5	+1.3
	23–26	97.8	97.5	97.5	97.6	98.1	98.9	97.3	98.1	98.0	98.7	97.6	97.3	98.8	97.8	97.7	97.5	94.5	97.0	96.7	96.1	95.7	-0.5
	27–30	98.7	98.4	97.8	98.8	98.8	97.8	97.2	97.9	97.3	99.0	99.0	98.4	98.5	98.0	97.6	98.0	96.9	96.1	97.0	97.6	94.3	-3.2
Trying heroin once or twice [8]	18	93.0	93.1	94.1	94.1	94.2	94.3	93.8	94.8	93.3	94.7	93.9	94.3	95.8	95.6	94.7	94.2	94.1	93.7	95.0	95.7	§	—
	19–22	94.1	94.2	95.0	96.4	95.9	98.8	95.6	97.6	95.7	95.5	95.8	96.7	95.9	96.3	96.5	96.1	94.9	96.8	95.7	93.8	93.3	-0.5
	23–26	93.1	95.0	94.8	95.0	95.0	96.1	93.7	97.2	95.6	94.9	94.5	95.5	95.7	94.7	97.2	96.5	93.4	96.6	96.9	97.7	96.4	-1.3
	27–30	95.9	96.4	94.4	97.6	94.9	95.6	93.9	96.4	96.2	95.4	96.3	95.7	95.9	94.8	95.3	95.2	95.9	95.5	96.3	96.0	93.5	-2.5
Taking heroin occasionally [8]	18	96.0	95.4	95.6	95.9	96.4	96.3	96.2	96.8	95.3	96.9	96.2	96.3	97.0	96.9	96.6	95.3	95.5	95.5	96.4	96.7	§	—
	19–22	98.0	97.9	97.9	98.3	98.9	99.4	98.2	98.8	97.3	97.9	97.5	97.7	97.4	98.0	97.8	97.5	97.4	97.7	97.9	95.8	97.3	+1.5
	23–26	98.2	97.8	97.5	97.2	98.5	98.3	97.7	98.8	98.3	98.5	97.1	99.0	99.0	98.1	98.1	98.1	96.6	97.7	97.7	99.5	97.7	-1.8
	27–30	98.6	98.4	98.6	98.7	98.1	97.7	97.1	98.1	98.2	98.6	99.3	98.1	97.9	97.7	97.3	98.0	98.3	97.4	98.2	98.0	96.3	-1.7
Taking heroin regularly [8]	18	96.6	96.2	96.2	97.1	97.1	96.7	96.9	97.1	95.9	97.4	96.4	96.7	97.4	97.4	97.1	96.4	95.7	95.9	96.8	97.3	§	—
	19–22	98.5	98.2	98.3	98.8	99.0	99.2	98.9	99.1	98.3	98.1	97.6	97.9	98.3	98.4	97.9	98.1	97.6	97.7	98.0	96.3	97.9	+1.7
	23–26	98.8	98.4	98.3	98.6	98.9	98.9	98.0	99.0	99.1	99.2	97.6	99.3	99.1	98.3	98.9	98.1	97.0	98.4	97.9	99.1	97.7	-1.4
	27–30	98.7	98.7	98.4	99.3	98.8	99.1	97.5	98.2	98.4	99.0	99.3	98.6	98.3	97.9	97.6	98.5	98.9	98.0	98.5	98.4	96.7	-1.7

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(List of drugs continued.)

TABLE 6-2 (cont.)
Trends in Proportions Disapproving of Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage disapproving [e]

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Trying amphetamines once or twice [2,8,28,42,74,75,76]	18	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3	85.3	86.5	86.9	84.2	81.3	82.2	79.9	81.3	82.5	81.9
	19–22	74.5	70.5	68.9	74.0	73.0	75.6	78.9	79.9	81.8	85.3	84.4	83.9	83.8	87.2	88.3	85.0	84.4	83.3	84.6	84.9
	23–26	—	—	—	—	74.2	74.2	74.6	80.3	83.5	83.3	84.1	84.8	83.4	84.8	82.7	86.0	86.4	85.7	83.5	84.5
	27–30	—	—	—	—	—	—	—	—	83.5	81.0	84.3	83.7	80.9	83.5	82.0	83.1	85.8	86.3	85.9	86.4
Taking amphetamines regularly [2,8]	18	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2	95.5	96.0	95.6	96.0	94.1	94.3	93.5	94.3	94.0	93.7
	19–22	94.8	93.3	94.3	93.4	94.9	96.6	96.9	95.1	97.5	96.8	97.5	97.7	96.7	97.3	97.9	96.8	97.2	97.8	96.7	97.5
	23–26	—	—	—	—	96.6	95.9	96.6	97.0	97.2	98.1	97.9	97.9	97.7	98.4	97.7	97.0	97.9	97.0	98.0	97.0
	27–30	—	—	—	—	—	—	—	—	98.1	96.5	98.6	97.8	96.8	97.7	99.0	98.9	98.2	98.1	97.7	98.2
Trying sedatives/ barbiturates once or twice [3,8]	18	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3	90.5	90.6	90.3	89.7	87.5	87.3	84.9	86.4	86.0	86.6
	19–22	83.5	82.3	83.8	85.1	85.2	86.1	88.3	87.5	90.1	92.0	91.1	90.4	88.8	90.7	91.1	90.5	89.1	86.6	85.8	86.6
	23–26	—	—	—	—	84.0	84.5	84.4	89.8	90.7	89.4	88.8	87.9	88.8	88.5	88.0	89.3	88.3	88.3	87.4	87.3
	27–30	—	—	—	—	—	—	—	—	90.5	88.3	88.4	88.8	86.6	88.9	87.6	88.0	89.4	88.8	88.4	87.6
Taking sedatives/ barbiturates regularly [3,8,29]	18	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3	96.4	97.1	96.5	97.0	96.1	95.2	94.8	95.3	94.6	94.7
	19–22	96.6	95.6	97.3	96.5	96.6	98.1	98.0	97.0	97.9	97.7	98.7	98.0	97.9	98.2	98.7	97.7	97.9	97.7	97.7	97.3
	23–26	—	—	—	—	98.4	98.5	97.7	98.6	98.3	98.3	98.5	98.5	98.6	98.5	98.5	97.4	98.4	97.4	98.5	97.6
	27–30	—	—	—	—	—	—	—	—	98.4	97.1	99.1	98.5	97.7	98.4	99.1	99.0	98.5	97.9	97.7	98.5
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor) [10,30]	18	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3	29.4	29.8	33.0	30.1	28.4	27.3	26.5	26.1	24.5	24.6
	19–22	14.8	14.5	13.9	15.5	15.3	15.4	16.9	16.0	18.4	22.4	17.6	22.2	16.9	20.8	22.2	22.0	22.0	18.3	21.5	18.3
	23–26	—	—	—	—	17.4	16.1	13.2	17.7	13.7	17.5	18.6	19.5	17.4	18.1	17.6	16.5	18.0	15.8	18.6	19.1
	27–30	—	—	—	—	—	—	—	—	19.5	19.1	18.7	18.8	17.9	19.5	18.6	18.2	16.1	17.4	15.2	15.9
Taking one or two drinks nearly every day [10,77,78]	18	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	76.5	77.9	76.5	75.9	77.8	73.1	73.3	70.8	70.0	69.4	67.2
	19–22	67.8	69.7	71.3	73.3	74.3	71.3	77.4	75.3	76.5	80.0	79.7	77.1	76.0	75.0	78.0	74.7	73.5	73.2	70.3	67.3
	23–26	—	—	—	—	71.4	73.7	71.6	72.7	74.6	74.4	77.6	76.9	75.5	74.2	73.3	69.7	70.6	68.4	70.2	73.4
	27–30	—	—	—	—	—	—	—	—	76.0	73.9	73.3	76.1	69.5	73.5	72.4	71.8	71.4	71.8	69.8	67.9
Taking four or five drinks nearly every day [10]	18	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6	91.9	90.6	90.8	90.6	89.8	88.8	89.4	88.6	86.7	86.9
	19–22	95.2	93.4	94.6	94.6	94.6	94.8	94.9	95.7	94.8	96.1	95.8	96.4	95.5	95.1	96.2	95.5	94.2	93.9	92.4	92.4
	23–26	—	—	—	—	96.2	95.0	95.5	96.9	94.3	95.9	96.9	96.1	95.7	95.7	95.7	95.2	96.5	93.8	96.1	95.1
	27–30	—	—	—	—	—	—	—	—	97.4	94.6	96.1	95.3	94.8	94.8	96.4	96.7	96.4	96.2	95.0	97.2
Having five or more drinks once or twice each weekend [10]	18	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5	68.9	67.4	70.7	70.1	65.1	66.7	64.7	65.0	63.8	62.7
	19–22	57.1	56.1	58.2	61.0	59.7	59.4	60.3	61.6	64.1	66.3	67.1	62.4	65.6	63.5	68.1	66.0	69.2	66.5	63.2	63.5
	23–26	—	—	—	—	66.2	68.3	66.5	67.5	65.2	63.2	66.9	64.6	69.6	66.8	66.9	65.3	70.9	66.6	69.5	68.1
	27–30	—	—	—	—	—	—	—	—	73.9	71.4	73.1	72.1	68.4	73.4	73.5	73.7	72.4	73.0	71.1	73.1
Smoking one or more packs of cigarettes per day [10]	18	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8	71.4	73.5	70.6	69.8	68.2	67.2	67.1	68.8	69.5
	19–22	68.7	68.1	66.3	71.6	69.0	70.5	71.4	72.7	73.8	75.6	73.7	73.2	72.6	72.8	75.3	69.8	72.2	74.3	72.3	70.1
	23–26	—	—	—	—	69.9	68.7	67.5	69.7	66.4	71.1	71.5	77.2	73.6	72.9	70.3	72.2	73.0	71.7	73.9	73.8
	27–30	—	—	—	—	—	—	—	—	72.8	69.4	73.5	71.2	70.7	73.8	72.3	73.9	72.7	74.3	71.7	71.0
Vape an e-liquid with nicotine occasionally [32,79,,80]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly [32]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape marijuana occasionally [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape marijuana regularly [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate Weighted N Per Form =	18	*3,261*	*3,610*	*3,651*	*3,341*	*3,254*	*3,265*	*3,113*	*3,302*	*3,311*	*2,799*	*2,566*	*2,547*	*2,645*	*2,723*	*2,588*	*2,603*	*2,399*	*2,601*	*2,545*	*2,310*
	19–22	*588*	*573*	*605*	*579*	*586*	*551*	*605*	*587*	*560*	*567*	*569*	*533*	*530*	*489*	*474*	*465*	*480*	*470*	*446*	*449*
	23–26					*542*	*535*	*560*	*532*	*538*	*516*	*524*	*495*	*538*	*514*	*475*	*466*	*449*	*423*	*401*	*397*
	27–30									*526*	*509*	*513*	*485*	*512*	*462*	*442*	*450*	*430*	*453*	*449*	*429*

(Years Cont.)

TABLE 6-2 (cont.)
Trends in Proportions Disapproving of Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Trying amphetamines once or twice [2,8,28,42,74,75,76]	18	82.1	82.3	83.8	85.8	84.1	86.1	86.3	87.3	87.2	88.2	88.1	84.1	83.9	84.9	83.1	81.4	82.1	81.9	81.0	80.3	§	—
	19–22	83.8	82.1	81.4	86.3	82.1	88.2	84.9	84.8	86.7	85.4	86.9	80.5	81.3	83.7	73.6	76.4	70.9	80.0	74.3	76.0	67.7	-8.3 s
	23–26	82.4	83.9	83.5	79.9	81.6	81.3	79.0	85.8	79.7	84.4	84.1	76.5	80.7	77.3	81.4	76.9	72.9	75.5	67.9	69.9	60.7	-9.2 s
	27–30	84.5	86.0	86.4	84.9	82.4	81.3	81.1	84.5	83.7	82.9	84.3	81.1	81.9	81.5	80.8	74.6	78.6	73.8	73.4	70.5	65.0	-5.5
Taking amphetamines regularly [2,8]	18	94.1	93.4	93.5	94.0	93.9	94.8	95.3	95.4	94.2	95.6	94.9	92.9	93.9	93.2	93.0	92.2	92.2	92.0	92.8	94.4	§	—
	19–22	96.1	97.3	96.4	97.1	97.1	98.4	97.5	98.6	96.2	96.8	96.2	92.1	94.1	94.4	92.8	94.0	93.3	93.6	92.3	90.4	92.0	+1.6
	23–26	97.6	96.8	96.3	97.2	95.9	98.3	96.2	97.6	97.3	98.1	96.8	94.8	95.9	94.6	92.4	93.7	90.4	94.4	91.7	93.1	89.4	-3.6
	27–30	98.5	97.6	97.4	98.1	98.0	97.6	96.4	98.4	97.2	98.1	98.0	97.5	95.8	96.8	96.3	94.8	94.6	94.6	95.4	90.8	90.1	-0.7
Trying sedatives/ barbiturates once or twice [3,8]	18	85.9	85.9	86.6	87.8	83.7	85.4	85.3	86.5	86.1	87.7	87.6	87.3	88.2	88.9	88.5	87.4	86.5	85.9	86.9	85.6	§	—
	19–22	84.2	85.2	84.2	87.7	81.8	86.6	83.4	82.7	82.1	84.7	85.2	85.4	88.0	88.6	86.3	87.1	80.3	87.6	81.0	82.8	—	—
	23–26	85.2	86.9	86.8	81.8	80.3	81.6	80.5	84.3	77.7	83.3	80.9	80.6	83.8	84.4	84.4	84.5	82.1	80.9	75.9	81.3	—	—
	27–30	87.3	88.5	86.9	89.2	81.8	78.7	80.1	83.5	80.5	82.5	80.3	83.3	83.1	82.6	82.5	81.2	79.2	75.9	78.3	76.4	—	—
Taking sedatives/ barbiturates regularly [3,8,29]	18	95.2	94.5	94.7	94.4	94.2	95.2	95.1	94.6	94.3	95.8	94.7	95.1	96.1	95.8	95.0	94.7	94.8	94.4	95.3	95.1	§	—
	19–22	97.4	96.9	97.8	98.5	96.6	98.3	98.1	98.3	96.7	96.7	96.3	96.7	96.4	96.5	97.8	96.7	95.4	96.6	95.2	95.2	—	—
	23–26	97.4	97.0	97.1	97.1	96.1	98.0	96.3	97.8	96.7	98.4	95.7	98.1	97.3	97.2	96.6	95.7	94.9	95.5	95.0	96.1	—	—
	27–30	98.1	98.4	97.2	98.4	98.1	96.5	95.6	97.4	97.4	98.4	98.6	97.0	97.7	97.1	97.4	97.7	98.0	95.9	96.4	95.7	—	—
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor) [10,30]	18	25.2	26.6	26.3	27.2	26.0	26.4	29.0	31.0	29.8	30.6	30.7	28.7	25.4	27.3	29.2	28.9	28.8	27.2	31.3	26.3	§	—
	19–22	18.4	16.3	18.3	20.1	20.7	22.3	17.8	17.3	20.5	19.1	23.7	21.6	21.4	19.6	17.9	17.5	18.3	17.7	17.8	13.9	12.3	-1.6
	23–26	19.9	15.9	18.1	13.0	16.3	13.5	14.7	14.9	12.5	16.0	15.4	10.9	14.1	13.5	14.2	12.8	15.5	14.7	11.6	10.4	9.7	-0.7
	27–30	14.8	15.9	18.4	15.4	18.8	16.1	15.0	14.2	11.9	11.5	13.3	11.8	14.7	13.2	11.7	12.1	11.4	11.5	14.6	10.5	9.6	-0.9
Taking one or two drinks nearly every day [10,77,78]	18	70.0	69.2	69.1	68.9	69.5	70.8	72.8	73.3	74.5	70.5	71.5	72.8	70.8	71.9	71.7	71.1	71.8	70.8	74.7	73.4	§	—
	19–22	66.7	68.3	63.9	66.9	68.1	64.6	68.2	65.1	65.2	67.4	68.4	71.0	65.7	64.0	61.6	63.3	64.2	62.1	61.7	64.9	57.6	-7.3 ss
	23–26	66.3	66.5	62.7	65.0	61.7	64.4	62.0	62.4	66.4	62.0	62.5	55.7	53.9	54.4	53.3	53.4	58.6	53.9	57.3	55.3	49.3	-6.0 s
	27–30	65.9	68.9	70.9	63.1	66.7	60.5	62.0	65.8	59.5	63.7	61.4	61.7	55.6	51.3	52.0	54.8	50.0	50.0	50.8	49.9	50.0	+0.1
Taking four or five drinks nearly every day [10]	18	88.4	86.4	87.5	86.3	87.8	89.4	90.6	90.5	89.8	89.7	88.8	90.8	90.1	90.6	91.9	89.7	91.1	90.7	91.7	91.5	§	—
	19–22	92.8	94.2	92.6	92.5	92.2	93.2	92.9	92.9	94.0	93.6	92.2	93.9	91.9	92.1	91.1	92.1	92.0	92.6	92.9	92.9	91.2	-1.7
	23–26	94.3	93.5	93.7	92.6	93.1	94.8	92.9	95.6	94.9	94.6	93.9	94.7	92.8	91.8	91.4	92.4	93.6	91.4	93.0	92.2	90.5	-1.7
	27–30	95.3	96.1	95.4	95.6	96.0	92.8	92.7	95.0	93.9	96.0	94.3	95.8	92.1	92.1	93.4	91.8	91.2	90.5	91.8	89.5	92.1	+2.6
Having five or more drinks once or twice each weekend [10]	18	65.2	62.9	64.7	64.2	65.7	66.5	68.5	68.8	68.9	67.6	68.8	70.0	70.1	71.6	72.6	71.9	74.2	72.5	75.8	75.0	§	—
	19–22	65.1	58.3	57.5	61.9	59.4	60.1	59.3	59.1	63.4	62.3	62.7	65.4	64.7	66.3	64.7	66.6	68.6	65.4	68.6	65.5	64.9	-0.5
	23–26	66.2	66.0	61.2	65.5	60.9	64.5	59.7	62.4	63.0	59.5	61.7	55.9	63.0	63.3	62.0	62.6	69.4	64.4	65.0	62.6	61.4	-1.3
	27–30	73.1	73.0	70.9	71.5	73.8	67.5	67.3	71.5	66.4	65.8	67.5	64.9	63.3	65.0	64.1	66.1	64.0	65.8	65.3	62.6	65.4	+2.9
Smoking one or more packs of cigarettes per day [10]	18	70.1	71.6	73.6	74.8	76.2	79.8	81.5	80.7	80.5	81.8	81.0	83.0	83.7	82.6	85.0	84.1	85.3	86.6	89.0	87.9	§	—
	19–22	73.1	73.2	73.4	73.4	74.8	81.5	77.2	81.0	80.4	81.8	82.9	83.8	79.5	81.0	80.6	82.7	85.7	85.4	86.8	88.0	86.1	-1.9
	23–26	72.7	77.3	74.8	75.7	76.2	74.8	74.1	76.2	77.9	77.3	77.9	80.3	78.2	77.8	80.0	80.3	83.5	85.0	84.0	85.4	85.3	-0.2
	27–30	78.6	75.2	78.8	76.2	77.6	77.3	73.9	81.1	74.5	80.9	79.6	79.5	79.1	79.9	79.9	82.2	82.2	81.1	82.6	81.9	83.9	+2.1
Vape an e-liquid with nicotine occasionally [32,79,80]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.0	59.2	56.6	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	71.7	76.0	+4.3
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	68.4	72.2	+3.9
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	68.2	75.9	+7.7 sss
Vape an e-liquid with nicotine regularly [32]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	71.8	70.9	70.1	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	84.4	85.2	+0.8
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	81.8	84.3	+2.5
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	81.8	84.7	+2.9
Vape marijuana occasionally [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.1	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43.1	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	49.4	—
Vape marijuana regularly [43]	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	63.5	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	59.7	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	67.0	—
Approximate Weighted N Per Form =	18	*2,150*	*2,144*	*2,160*	*2,442*	*2,455*	*2,460*	*2,377*	*2,450*	*2,314*	*2,233*	*2,449*	*2,384*	*2,301*	*2,147*	*2,078*	*2,193*	*2,000*	*2,129*	*2,267*	*1,031*	§	
	19–22	*416*	*413*	*402*	*396*	*431*	*378*	*378*	*333*	*365*	*368*	*364*	*340*	*356*	*280*	*316*	*264*	*252*	*225*	*271*	*252*	*312*	
	23–26	*389*	*404*	*346*	*385*	*403*	*374*	*364*	*325*	*335*	*328*	*347*	*309*	*334*	*312*	*308*	*284*	*271*	*234*	*264*	*233*	*307*	
	27–30	*395*	*368*	*359*	*346*	*370*	*367*	*330*	*355*	*339*	*325*	*334*	*306*	*312*	*301*	*304*	*262*	*258*	*276*	*285*	*260*	*287*	

Source. The Monitoring the Future study, the University of Michigan.

Footnotes for Tables 6-1 through 6-2

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
The illicit drugs not listed here show a daily prevalence of 0.2% or less in all years.
' * ' indicates a prevalence rate of less than 0.05%.
' — ' indicates data not available.

§ Insufficient data for 2020 estimate.

[1]Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

[2]In 2011 the list of examples was changed from upper, pep pills, bennies, and speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

[3]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers.
These changes likely explain the discontinuity in the 2003 and 2004 results.

[4]For 12th graders only: In 2011 the question on perceived risk of using salvia once or twice appeared at the end of a questionnaire form. In 2012 the question was moved to an earlier section of the same form. A question on perceived risk of using salvia occasionally was also added following the question on perceived risk of trying salvia once or twice. These changes likely explain the discontinuity in the 2012 result.

[5]Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

[6]Age 18 data based on one questionnaire form for all years reported. For ages 19-30 only: Prior to 2012, data based on one questionnaire form. In 2012 and following data based on five questionnaire forms.

[7]Age 18 data based on one questionnaire forms for all years reported. For ages 19-30 only: Prior to 2012, data based on one questionnaire form. In 2012 and following data based on two questionnaire forms.

[8]Data based on one questionnaire form.

[9]Age 18 data based on one questionnaire form for all years reported. For ages 19-30 only: Prior to 2012, data based on one questionnaire form. In 2012 and following data based on three questionnaire forms.

[10]Age 18 data based on one questionnaire form for all years reported. For ages 19-30 only: Prior to 2012, data based on one questionnaire form. In 2012 and following data based on four questionnaire forms.

[11]Age 18 data based on one questionnaire form for all years reported. For ages 19-30 only: Prior to 2012, data based on one questionnaire form. In 2012 and 2013 two questionnaire forms. Data based on one questionnaire form in 2014 and following.

[12]Data based on two questionnaire forms for all years reported.

[13]Beginning in 2014 for Age 18 and 2015 for the other age groups, "molly" was added to the questions on perceived risk of using MDMA. The same change was made to the questions on disapproval of MDMA use for all age groups in 2015. Data for the two versions of the questions are not comparable due to this change in the question text.

[14]For the estimate of Perceived Risk of Using Marijuana Occasionally in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (12.8%) and new web-push condition (8.9%) of survey administration.

[15]For the estimate of Perceived Risk of Using Cocaine Occasionally in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (74.8%) and new web-push condition (62.8%) of survey administration.

[16]For the estimate of Perceived Risk of Trying Heroin Once or Twice in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (71.4%) and new web-push condition (80.5%) of survey administration.

[17]For the estimate of Perceived Risk of Using Heroin Occasionally in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (84.4%) and new web-push condition (90.5%) of survey administration.

[18]For the estimate of Perceived Risk of Trying Amphetamines Once or Twice in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (27.1%) and new web-push condition (38.8%) of survey administration.

[19]For the estimate of Perceived Risk of Trying Sedatives/Barbiturates Once or Twice in 2018, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (23.4%) and new web-push condition (36.4%) of survey administration.

[20]For the estimate of Perceived Risk of Trying Sedatives/Barbiturates Once or Twice in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (22.4%) and new web-push condition (36.0%) of survey administration.

[21]For the estimate of Perceived Risk of Using Sedatives/Barbiturates Regularly in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (62.4%) and new web-push condition (74.3%) of survey administration.

[22]For the estimate of Perceived Risk of Trying Bath Salts Once or Twice in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (68.0%) and new web-push condition (80.6%) of survey administration.

[23]For the estimate of Perceived Risk of Trying Adderall Once or Twice in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (22.7%) and new web-push condition (36.1%) of survey administration.

[24]For the estimate of Perceived Risk of Trying Narcotics Other Than Heroin Once or Twice in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (46.3%) and new web-push condition (59.2%) of survey administration.

[25]For the estimate of Perceived Risk of Using Salvia Occasionally in 2018, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (17.3%) and new web-push condition (28.5%) of survey administration.

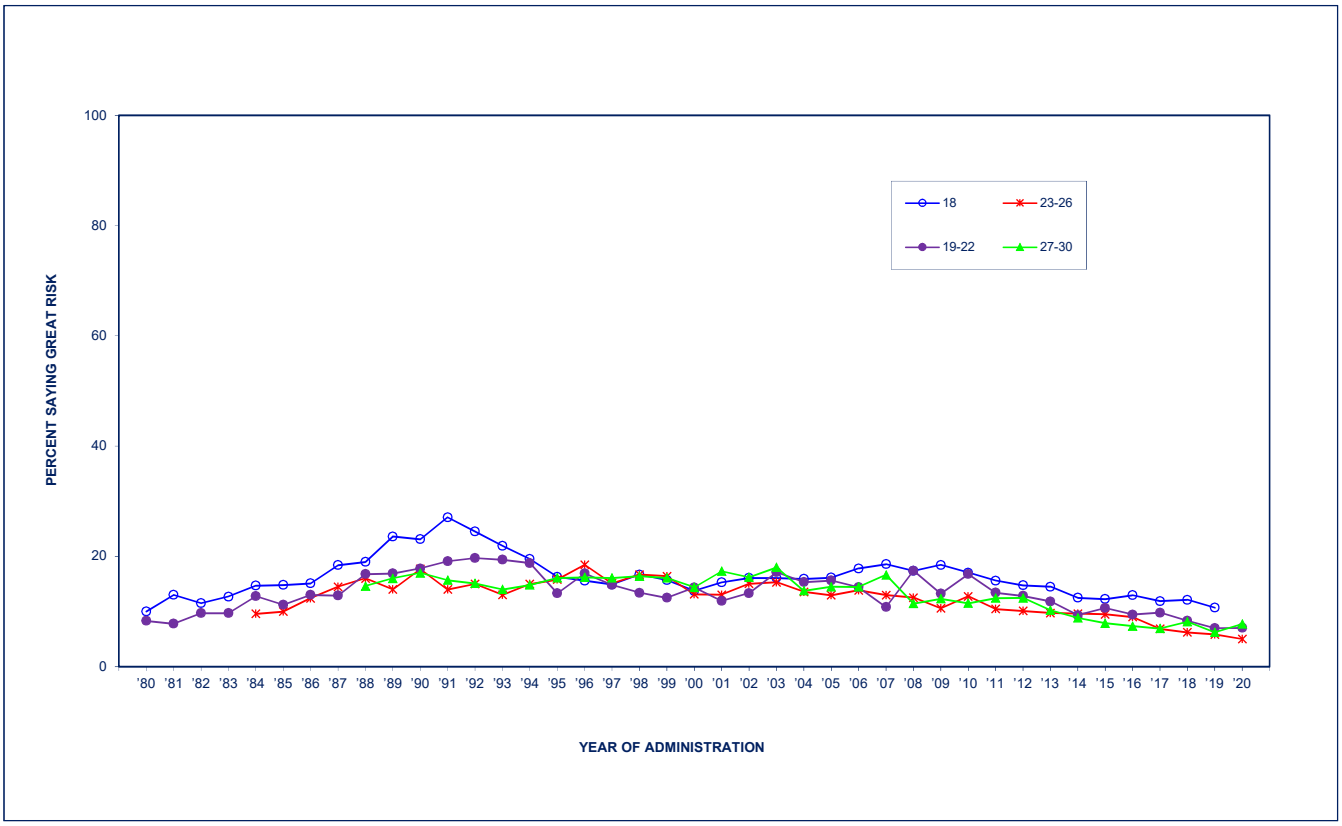
Footnotes for Tables 6-1 through 6-2 (cont.)

[26]For the estimate of Disapproval of Trying Marijuana Once or Twice in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (32.6%) and new web-push condition (27.4%) of survey administration.
[27]For the estimate of Disapproval of Using Marijuana Regularly in 2018, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (65.1%) and new web-push condition (57.8%) of survey administration.
[28]For the estimate of Disapproval of Trying Amphetamines Once or Twice in 2018, there was a significant difference (p<.01) among those age 19-22 between the typical mail condition (83.1%) and new web-push condition (67.9%) of survey administration.
[29]For the estimate of Disapproval of Using Sedatives/Barbiturates Regularly in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (98.7%) and new web-push condition (93.8%) of survey administration.
[30]For the estimate of Disapproval of Trying Alcohol Once or Twice in 2018, there was a significant difference (p<.01) among those age 27-30 between the typical mail condition (17.3%) and new web-push condition (12.0%) of survey administration.
[31]Data based on two questionnaire forms in 2017 and 2018. Beginning in 2019, data based on three questionnaire forms.
[32]Age 18 data based on two questionnaire forms. Data for ages 19-30 based on three questionnaire forms.
[33]For the estimate of Perceived Risk of Using Marijuana Regularly in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (23.9%) and new web-push condition (18.6%) of survey administration.
[34]For the estimate of Perceived Risk of Trying Cocaine Once or Twice in 2019, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (45.3%) and new web-push condition (58.9%) of survey administration.
[35]For the estimate of Perceived Risk of Using Sedatives (Barbiturates) Regularly in 2019, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (56.3%) and new web-push condition (68.7%) of survey administration.
[36]For the estimate of Perceived Risk of Trying Narcotics other than Heroin Once or Twice in 2019, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (53.2%) and new web-push condition (66.6%) of survey administration.
[37]For the estimate of Perceived Risk of Trying Salvia Once or Twice in 2019, there was a significant difference (p<.01) among those age 23-26 between the typical mail condition (14.6%) and new web-push condition (30.9%) of survey administration.
[38]For the estimate of Perceived Risk of Using Salvia Occasionally in 2019, there was a significant difference (p<.01) among those age 23-26 between the typical mail condition (20.8%) and new web-push condition (35.2%) of survey administration.
[39]For the estimate of Perceived Risk of Trying Synthetic Marijuana Once or Twice in 2019, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (37.6%) and new web-push condition (48.9%) of survey administration.
[40]For the estimate of Disapproval of Using Marijuana Regularly in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (53.2%) and new web-push condition (59.6%) of survey administration.
[41]For the estimate of Disapproval of Trying LSD Once or Twice in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (61.3%) and new web-push condition (72.9%) of survey administration.
[42]For the estimate of Disapproval of Trying Amphetamines Once or Twice in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (63.7%) and new web-push condition (77.1%) of survey administration.
[43]Data based on two questionnaire forms.
[44]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-1.8, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[45]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-10.9, p<.05).
[46]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-4.8, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[47]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+5.0, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[48]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-3.0, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[49]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (+7.4, p<.05).
[50]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-8.8, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[51]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-1.3, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[52]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-4.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[53]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-2.8, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

Footnotes for Tables 6-1 through 6-2 (cont.)

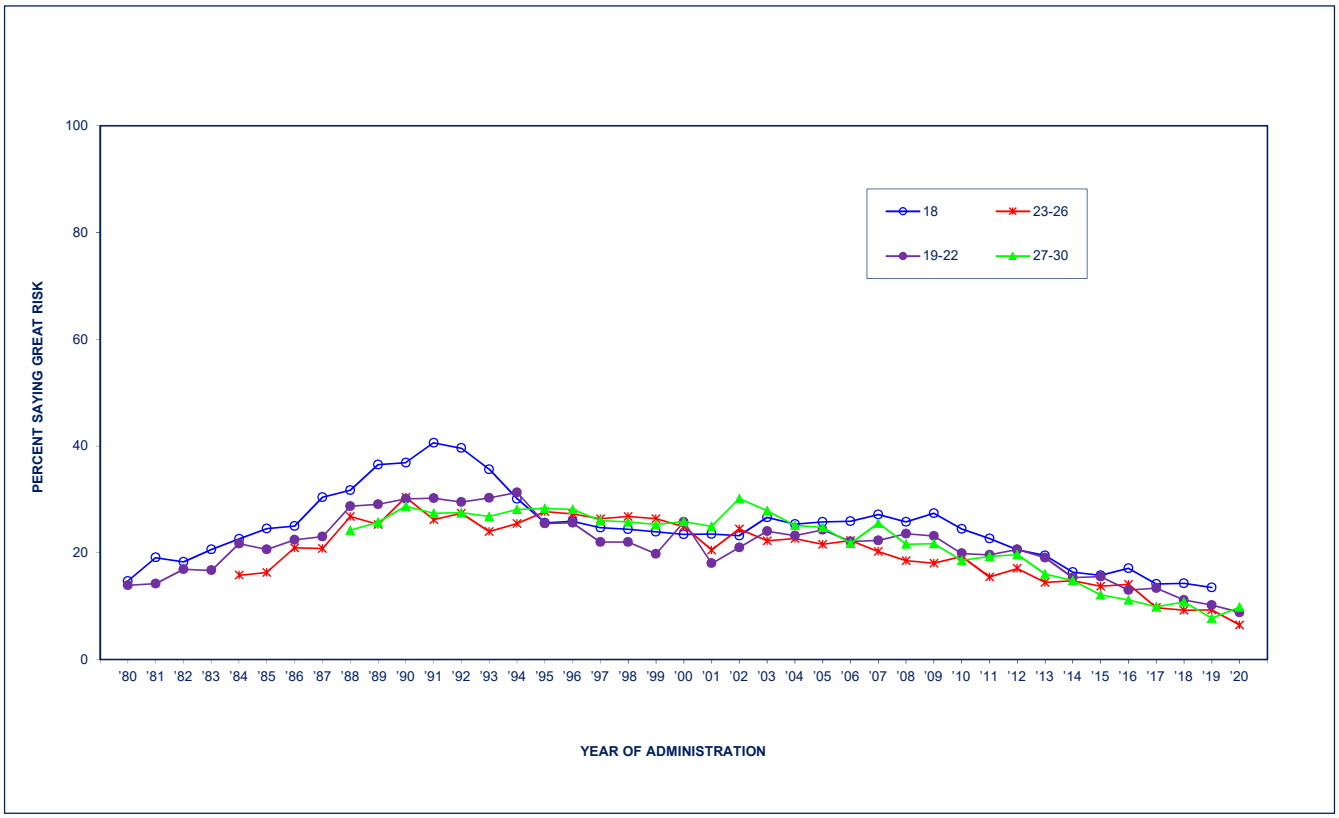
[54]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-4.8, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[55]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-12.1, p<.05).
[56]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-8.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[57]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+3.0, p<.05).
[58]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-10.7, p<.01).
[59]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-11.2, p<.05).
[60]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-13.8, p<.01).
[61]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-14.7, p<.01).
[62]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+11.2, p<.05).
[63]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+14.0, p<.01).
[64]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-7.1, p<.01).
[65]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+5.3, p<.05).
[66]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+7.4, p<.01).
[67]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+9.8, p<.001).
[68]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+11.0, p<.001).
[69]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-5.8, p<.05).
[70]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-9.5, p<.05).
[71]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-4.0, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[72]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-10.5, p<.05).
[73]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-4.6, p<.05).
[74]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-9.5, p<.05).
[75]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-5.2, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[76]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (-12.1, p<.05).
[77]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-8.9, p<.01).
[78]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is signficant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-3.8, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.
[79]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was significant (+6.7, p<.05).
[80]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+7.6, p<.01).

FIGURE 6-1
Trends in Perceived Risk of MARIJUANA Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



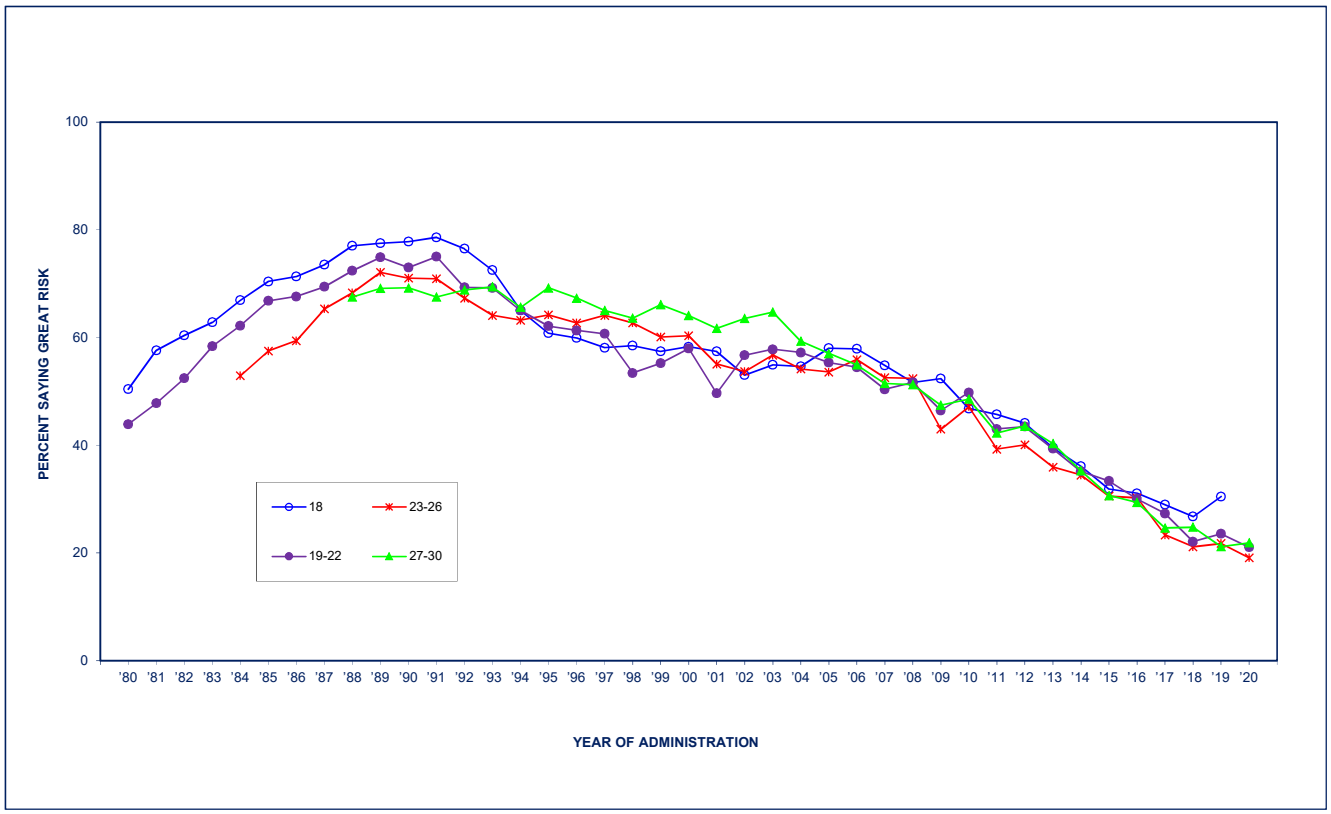
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-2
Trends in Perceived Risk of MARIJUANA Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Occasional Use



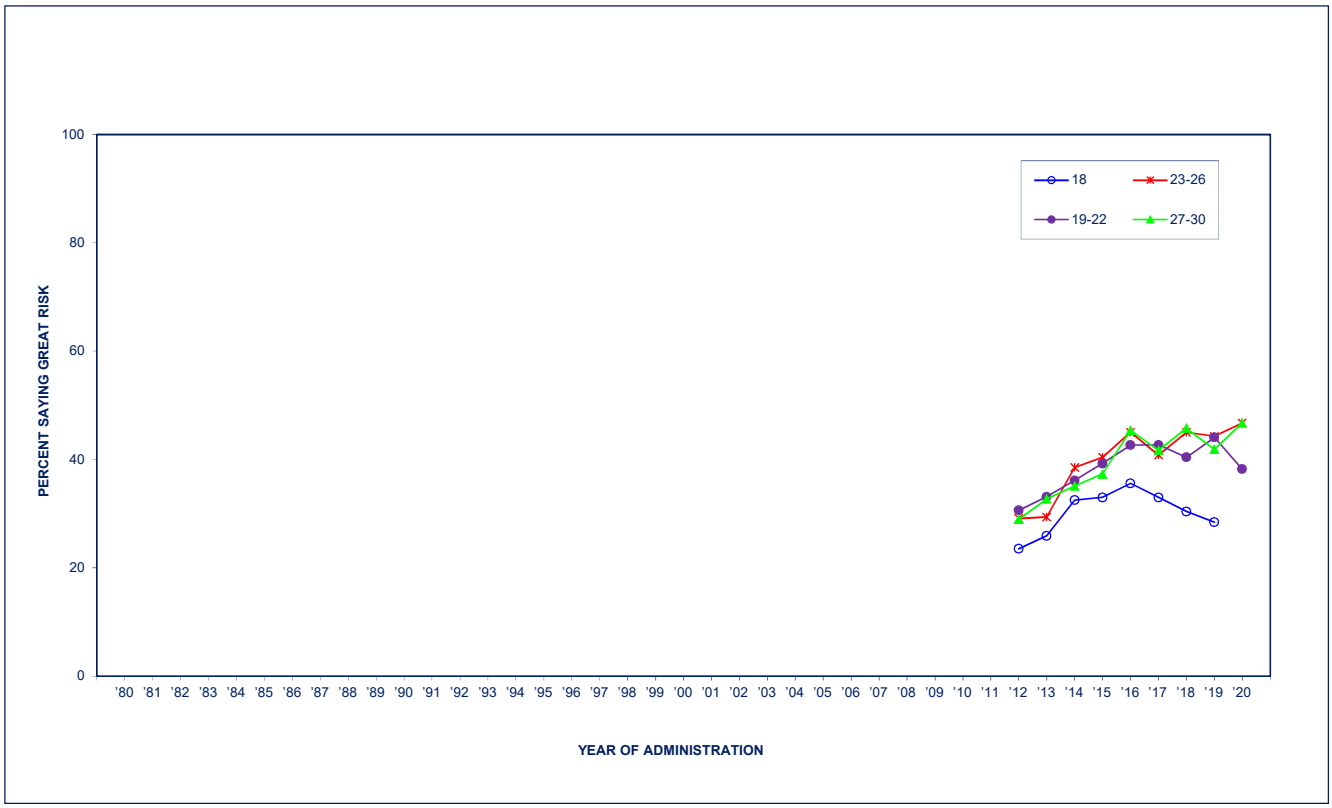
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-3
Trends in Perceived Risk of MARIJUANA Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



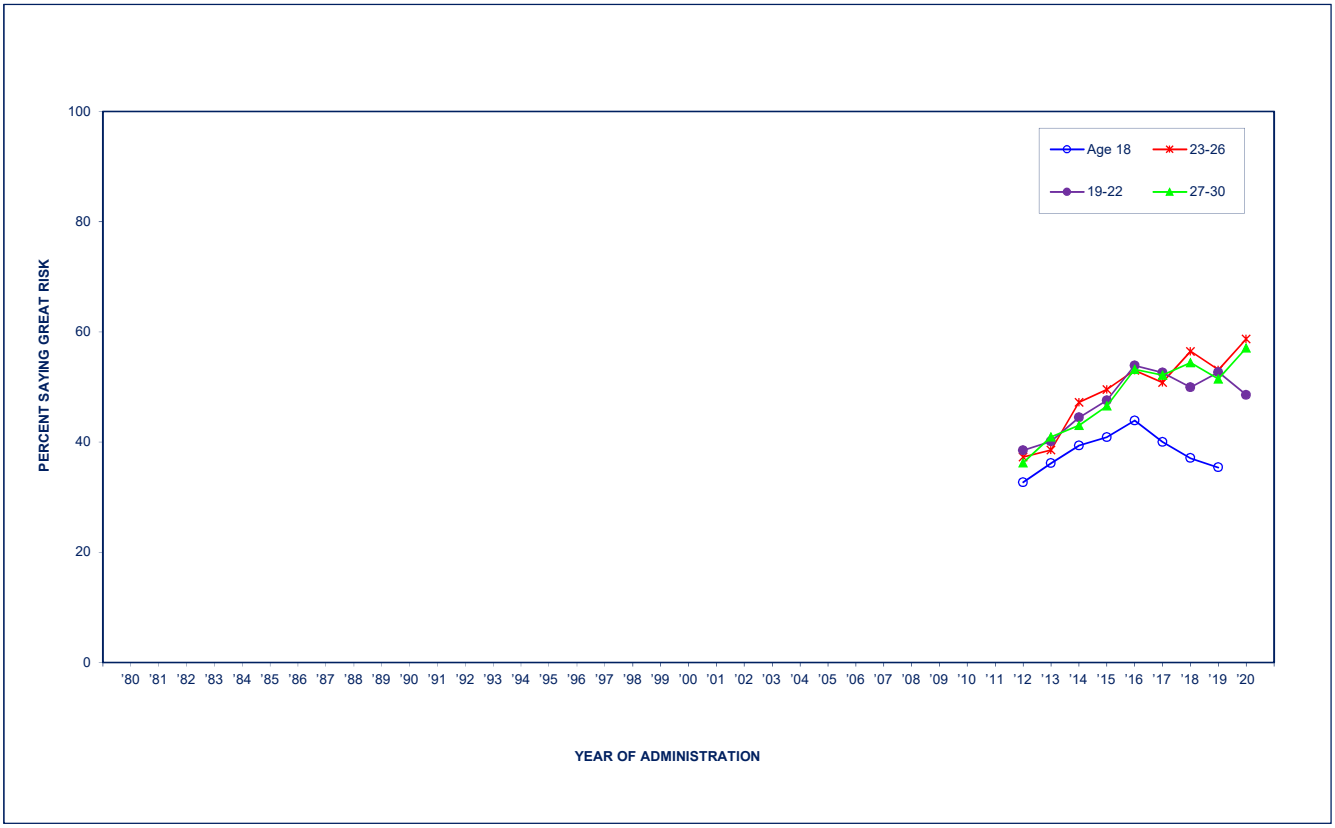
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-4
Trends in Perceived Risk of SYNTHETIC MARIJUANA Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



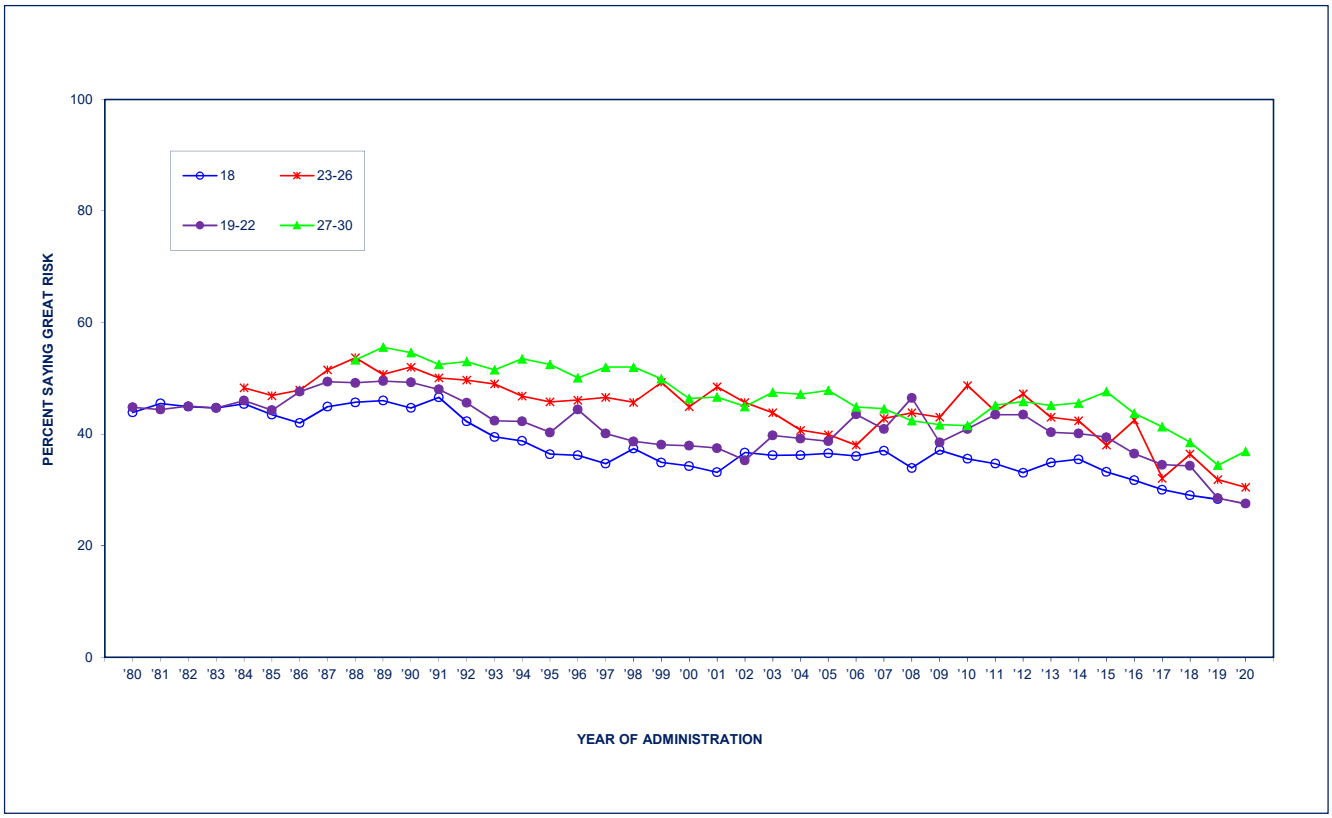
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-5
Trends in Perceived Risk of SYNTHETIC MARIJUANA Use
Respondents in Modal Age Groups of 19–22, 23–26, and 27–30
Occasional Use



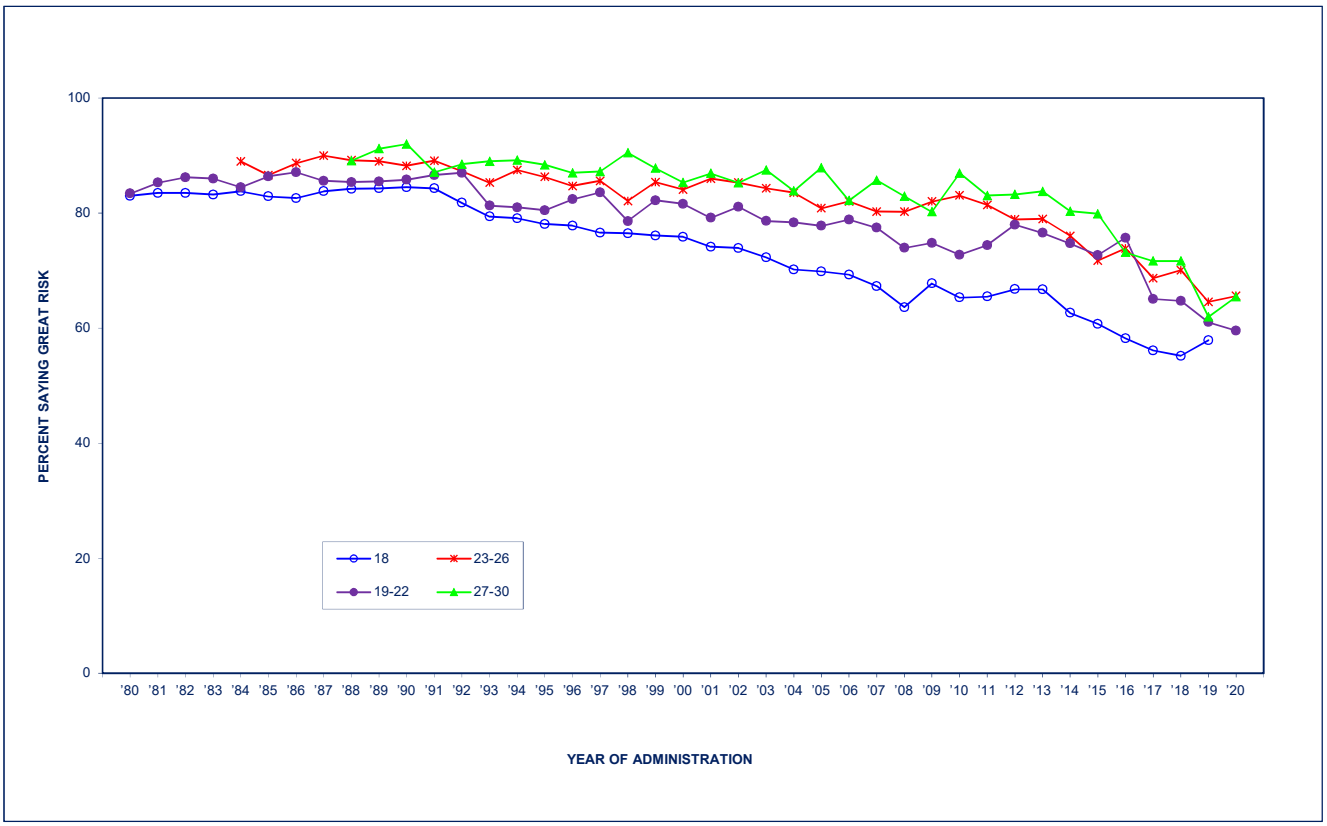
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-6
Trends in Perceived Risk of LSD Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



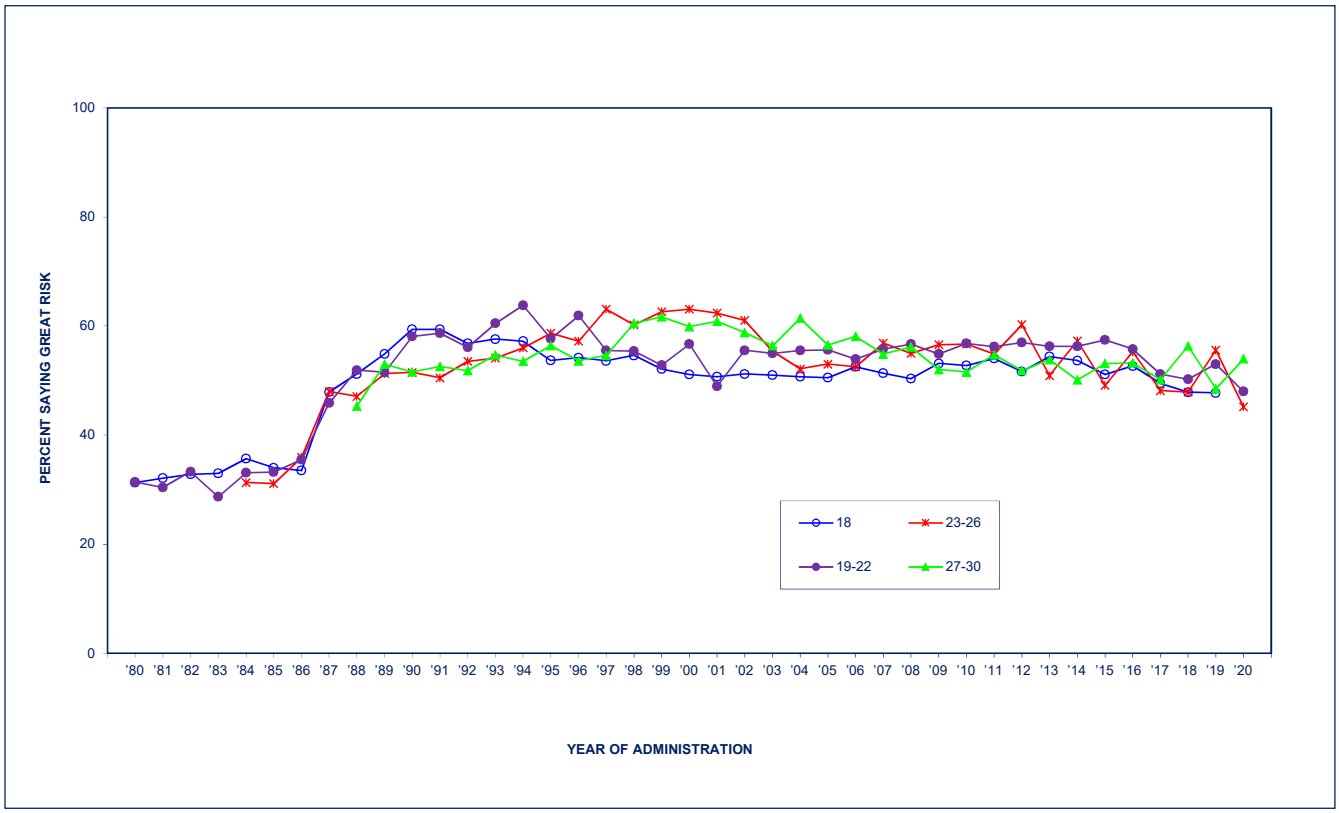
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-7
Trends in Perceived Risk of LSD Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



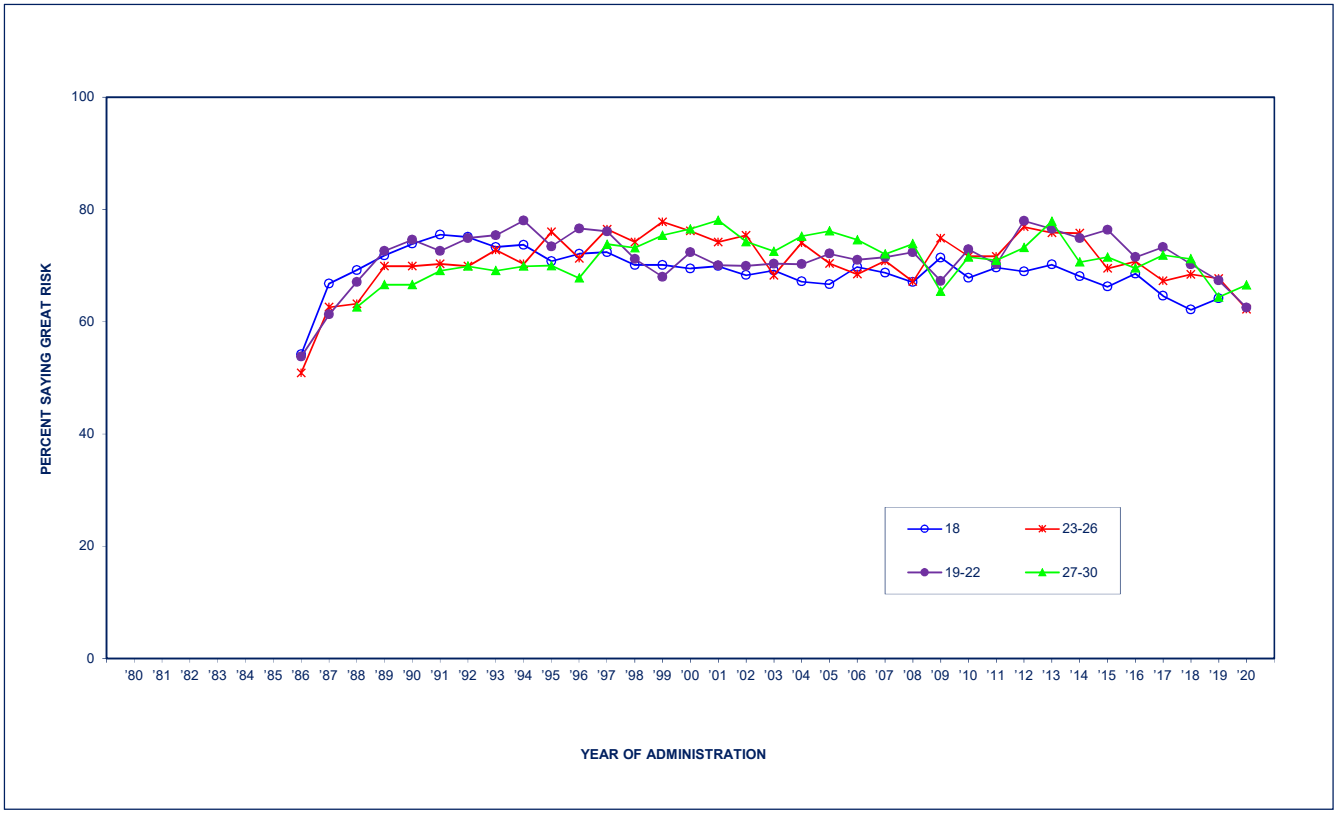
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-8
Trends in Perceived Risk of COCAINE Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



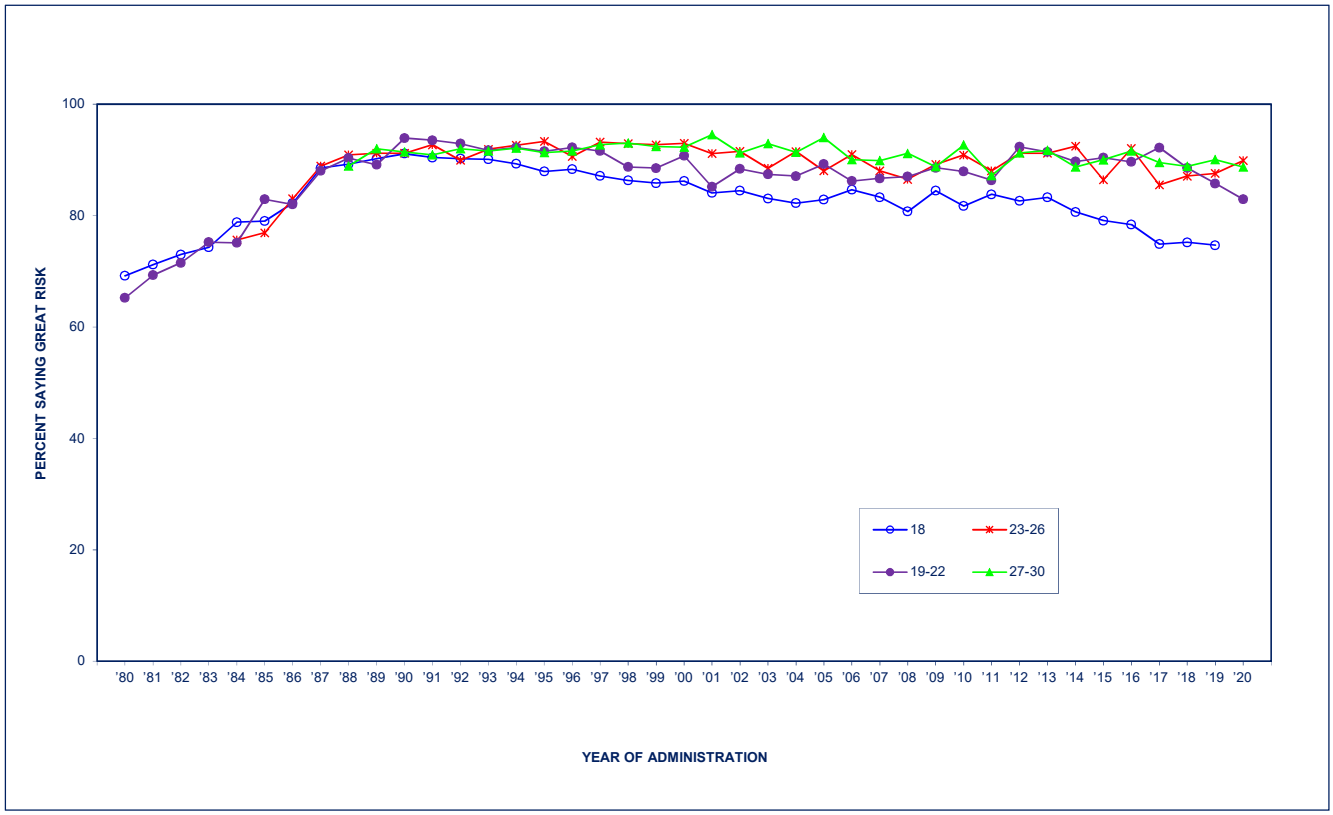
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-9
Trends in Perceived Risk of COCAINE Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Occasional Use



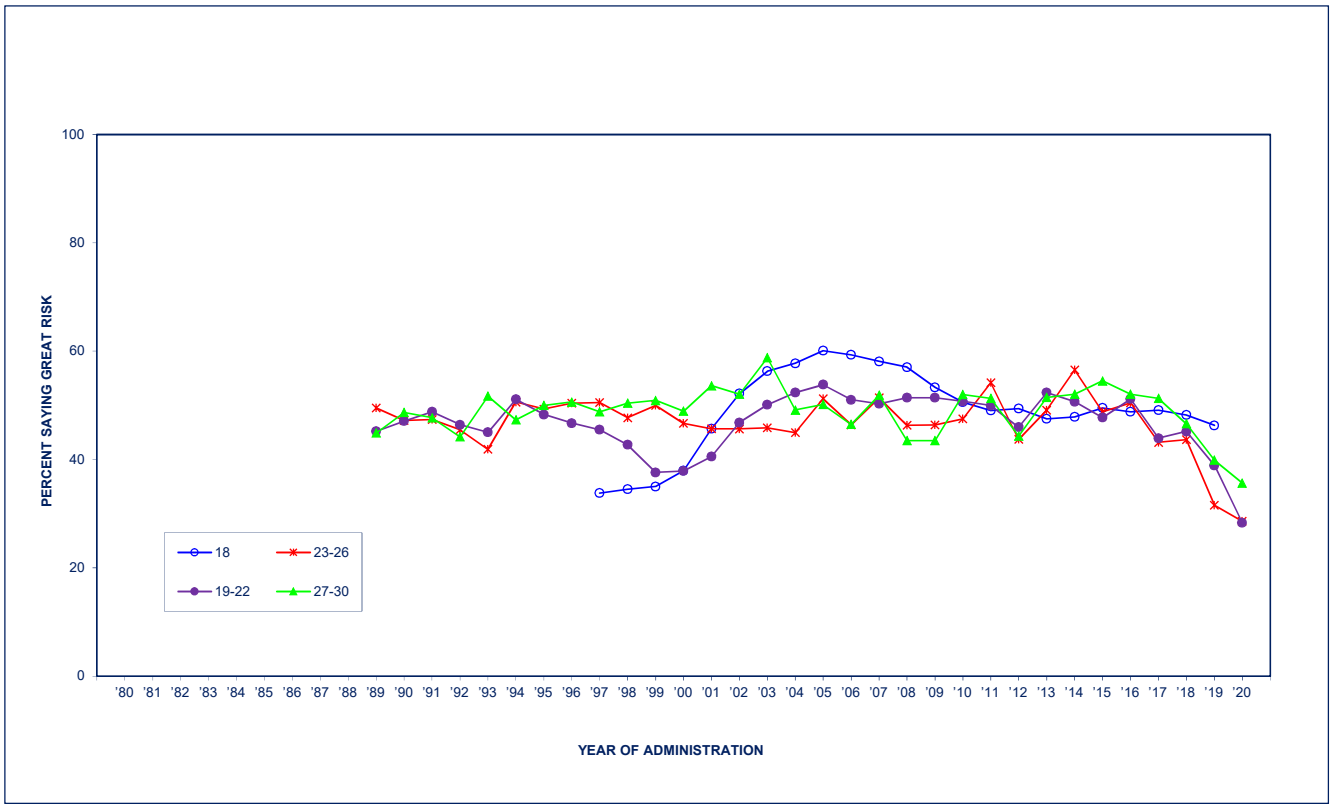
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-10
Trends in Perceived Risk of COCAINE Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

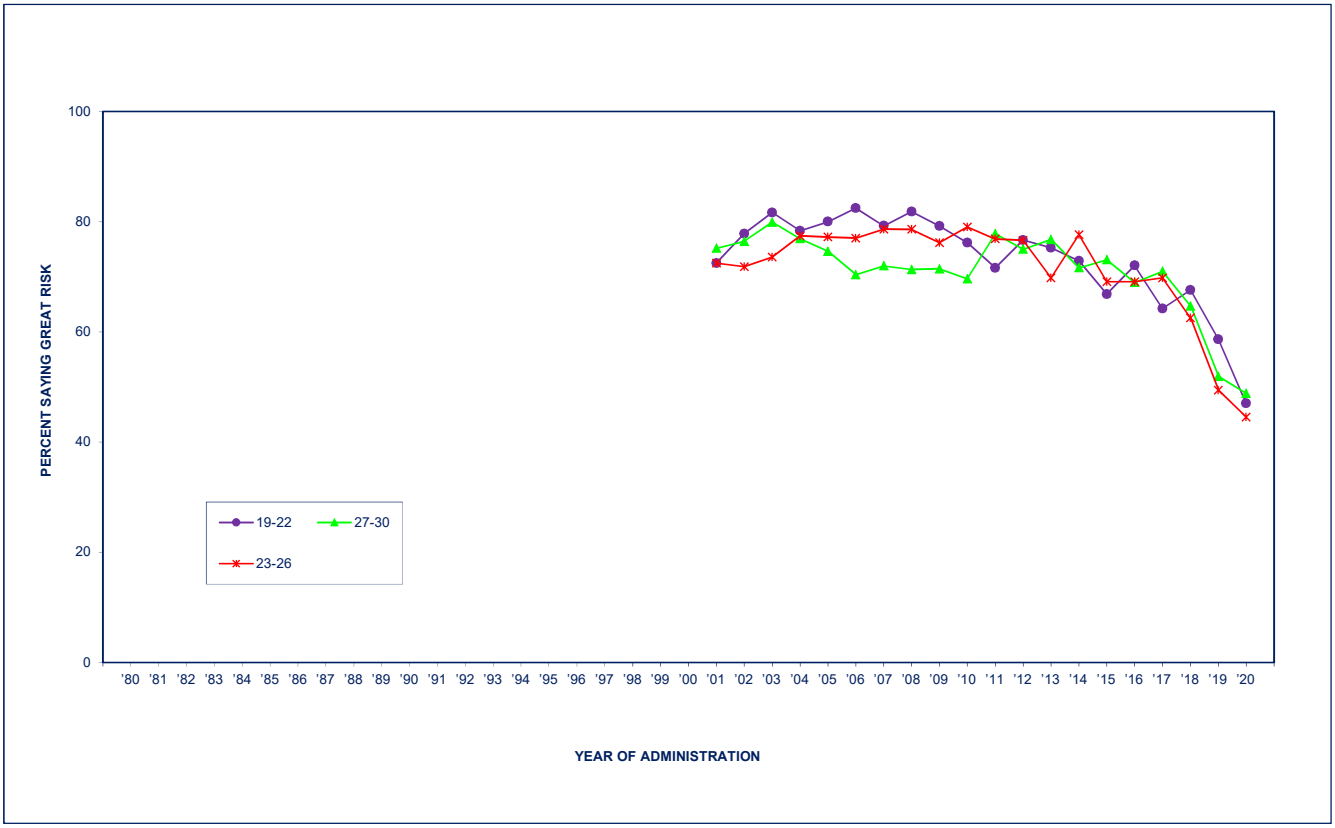
FIGURE 6-11
Trends in Perceived Risk of MDMA (Ecstasy, Molly)[1] Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



Source. The Monitoring the Future study, the University of Michigan.

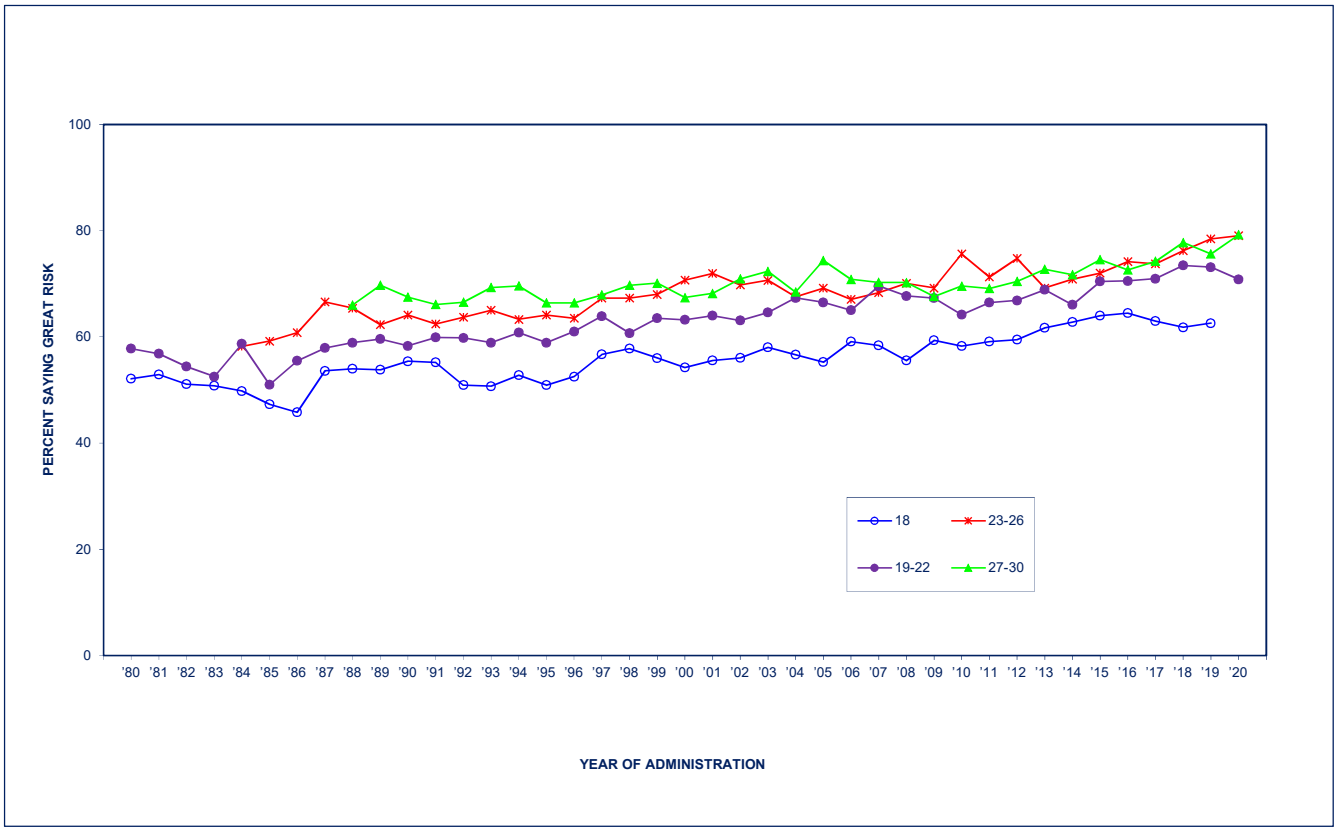
[1] In 2014 in the Age 18 questionnaire, "molly" was added to the question text. In 2015, the same change was made to the questionnaires for the other age groups. This likely explains the discontinuity in results for the affected years.

FIGURE 6-12
Trends in Perceived Risk of MDMA (Ecstasy, Molly)[1] Use
Respondents in Modal Age Groups of 19–22, 23–26, and 27–30
Occasional Use



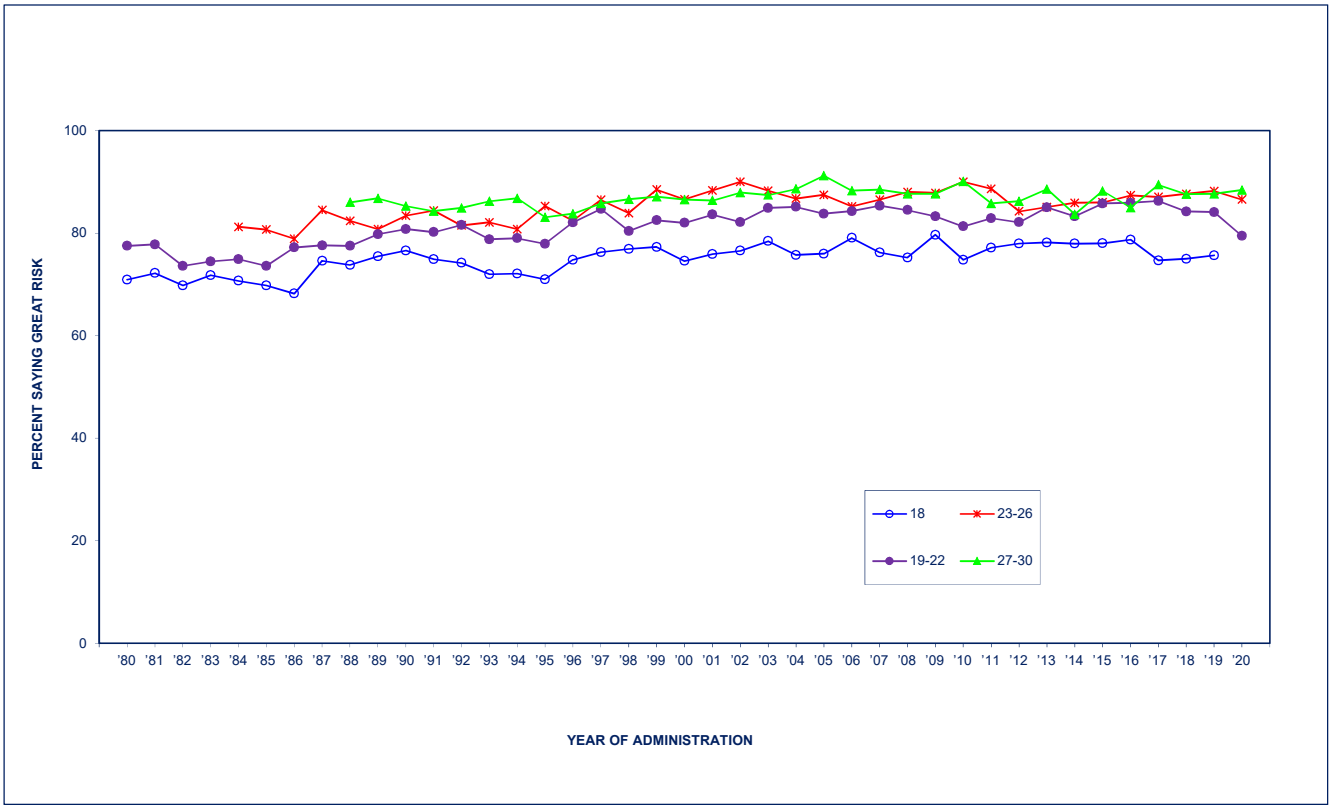
Source. The Monitoring the Future study, the University of Michigan.
[1] In 2015, "molly" was added to the question text. This likely explains the discontinuity in results for the affected years.

FIGURE 6-13
Trends in Perceived Risk of HEROIN Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



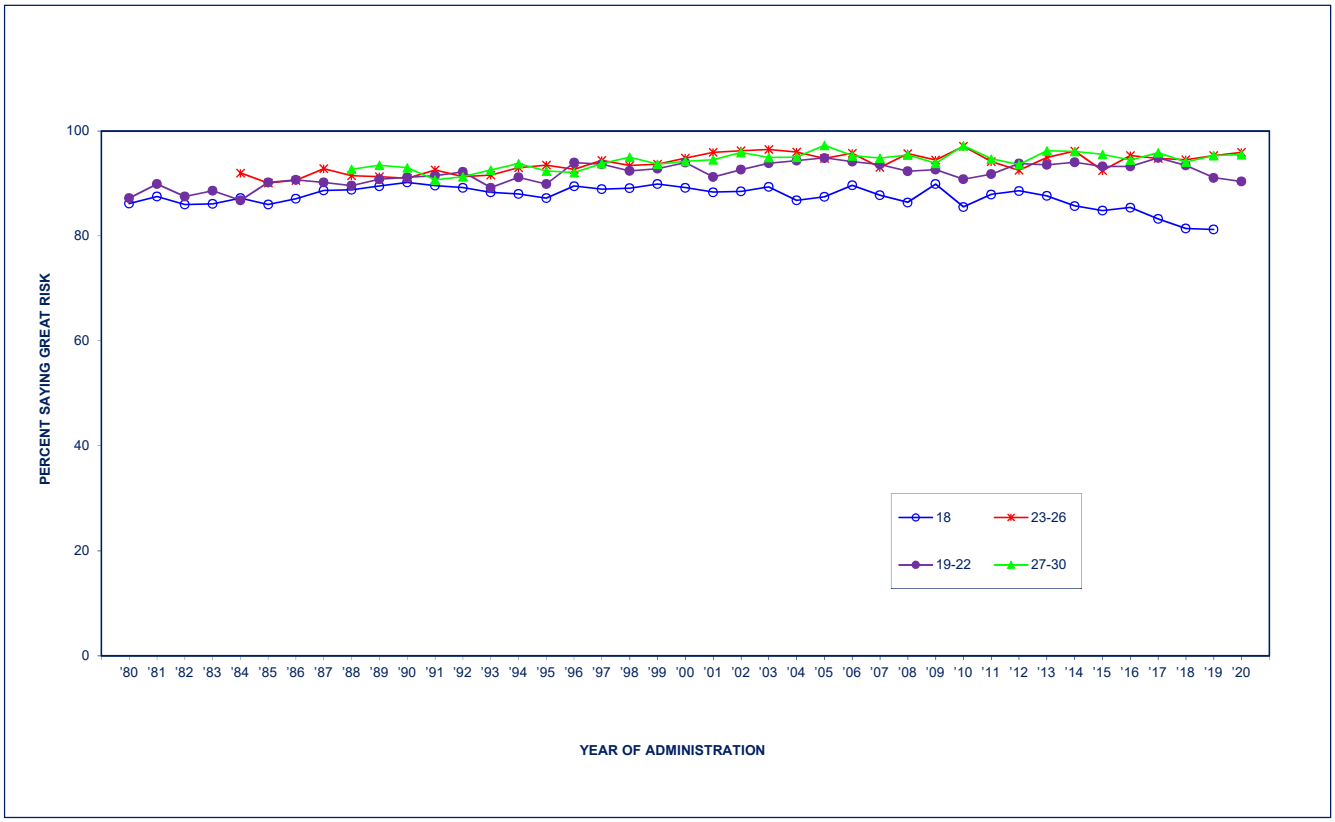
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-14
Trends in Perceived Risk of HEROIN Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Occasional Use



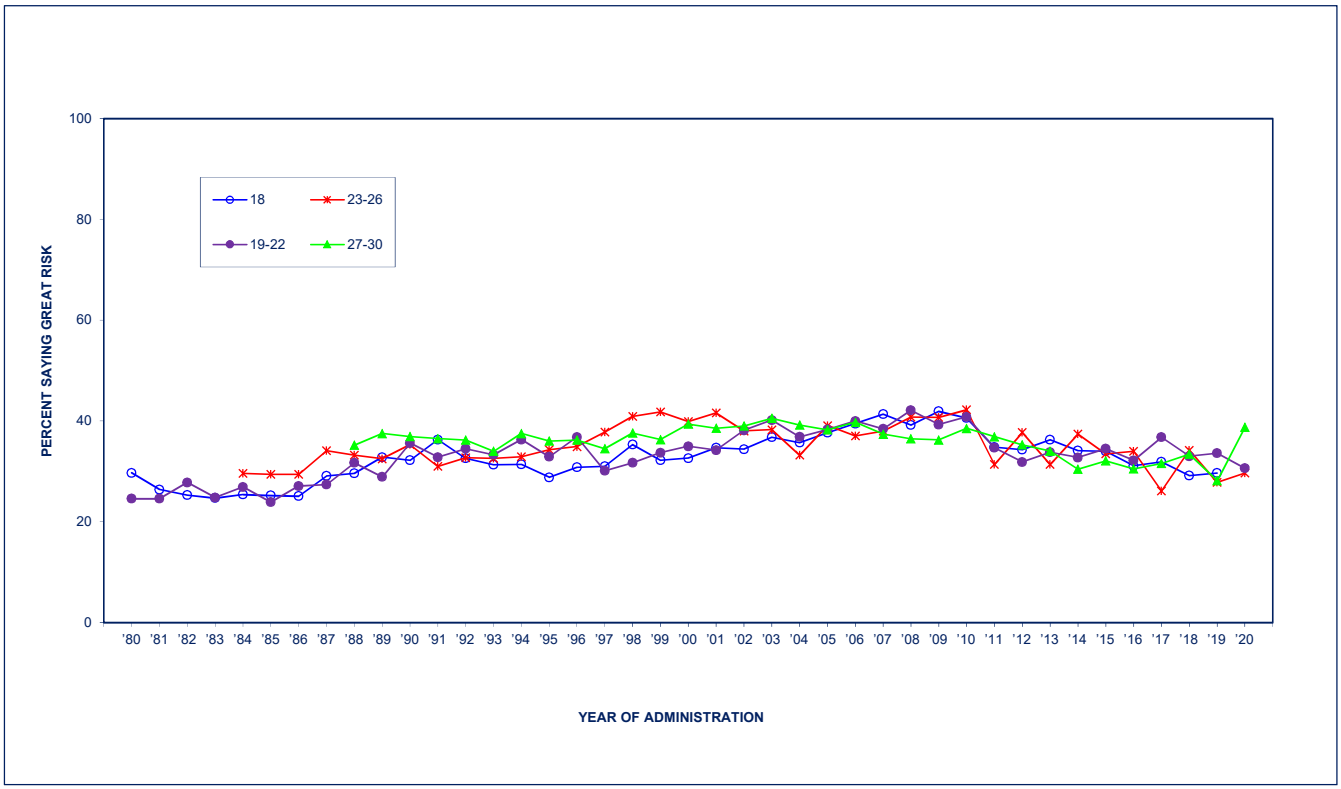
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-15
Trends in Perceived Risk of HEROIN Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

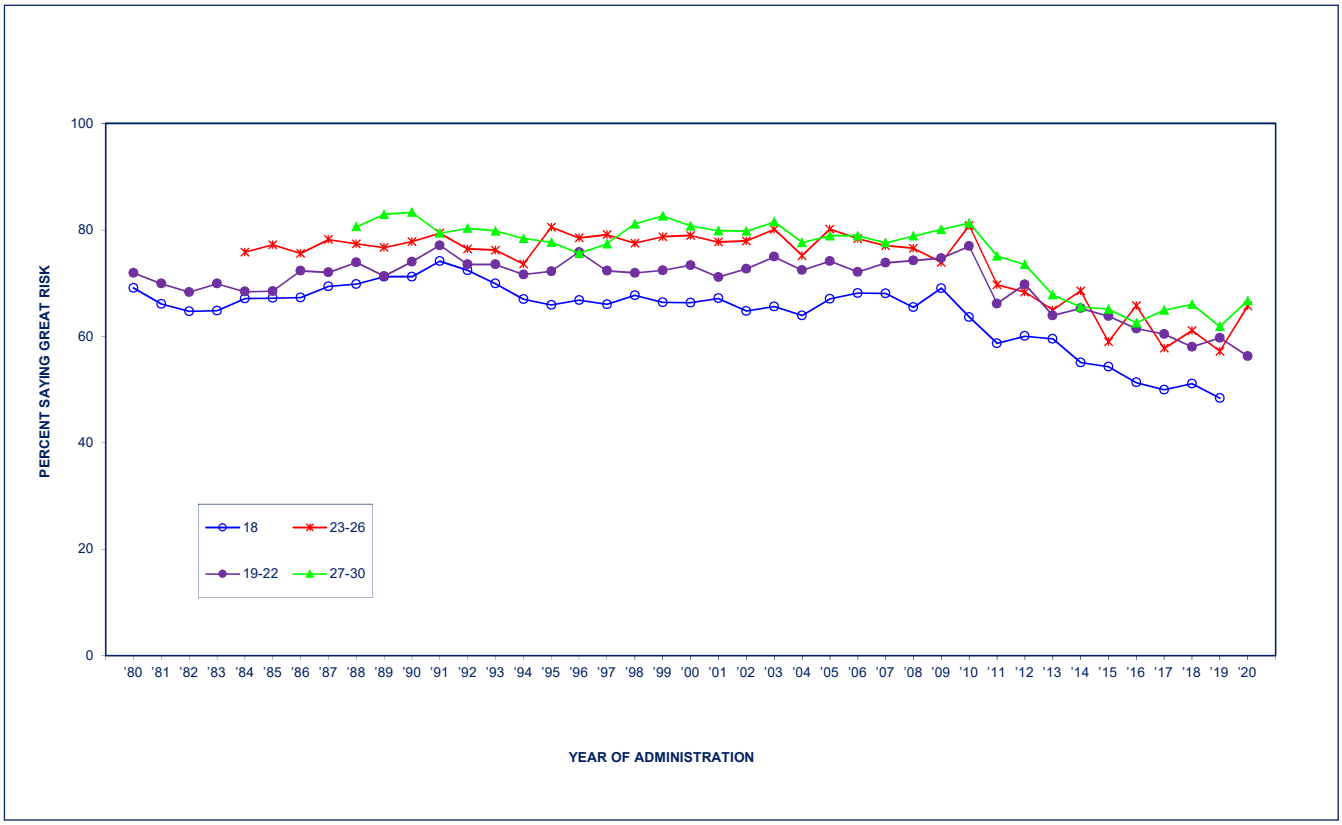
FIGURE 6-16
Trends in Perceived Risk of AMPHETAMINE[1] Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



Source. The Monitoring the Future study, the University of Michigan.

[1]In 2011 the list of examples was changed from upper, pep pills, bennies, and speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

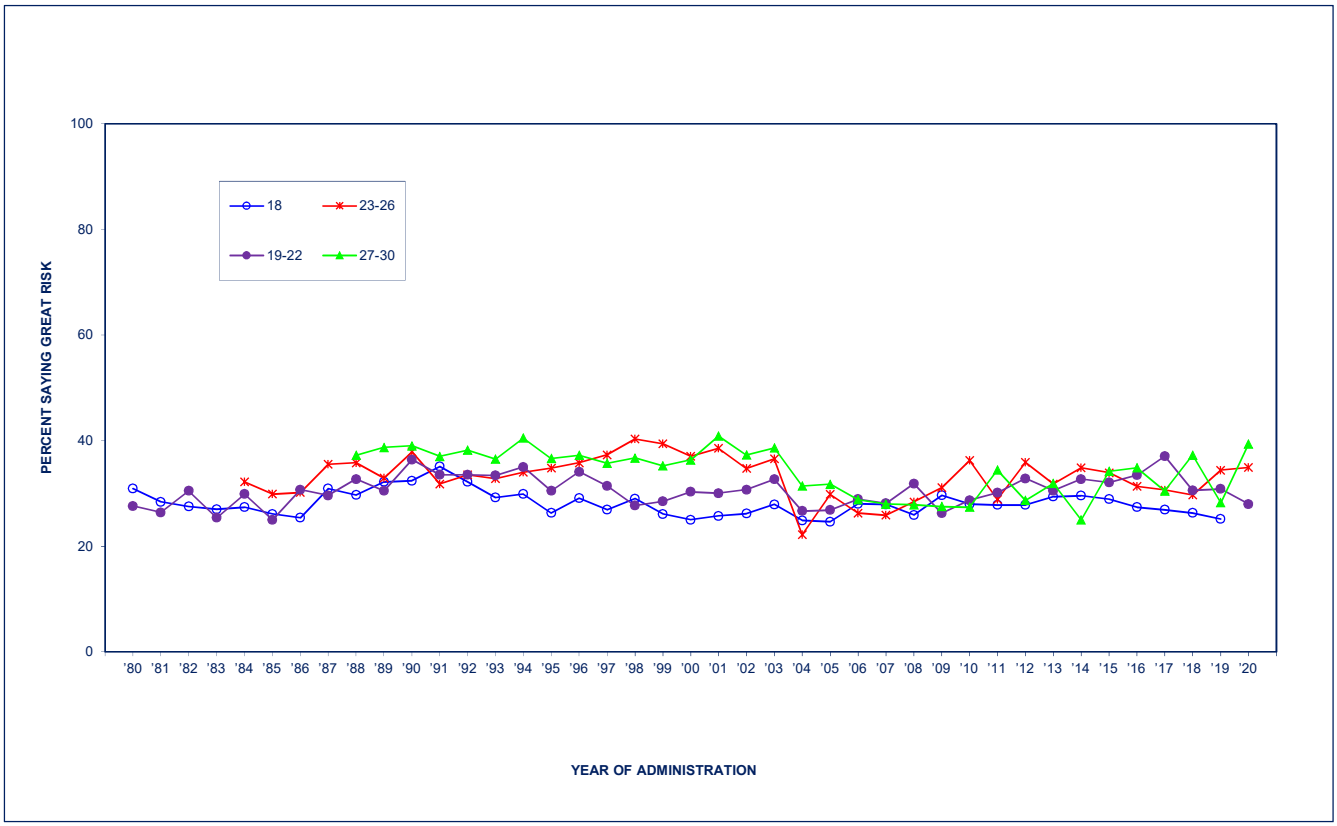
FIGURE 6-17
Trends in Perceived Risk of AMPHETAMINE[1] Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

[1]In 2011 the list of examples was changed from upper, pep pills, bennies, and speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

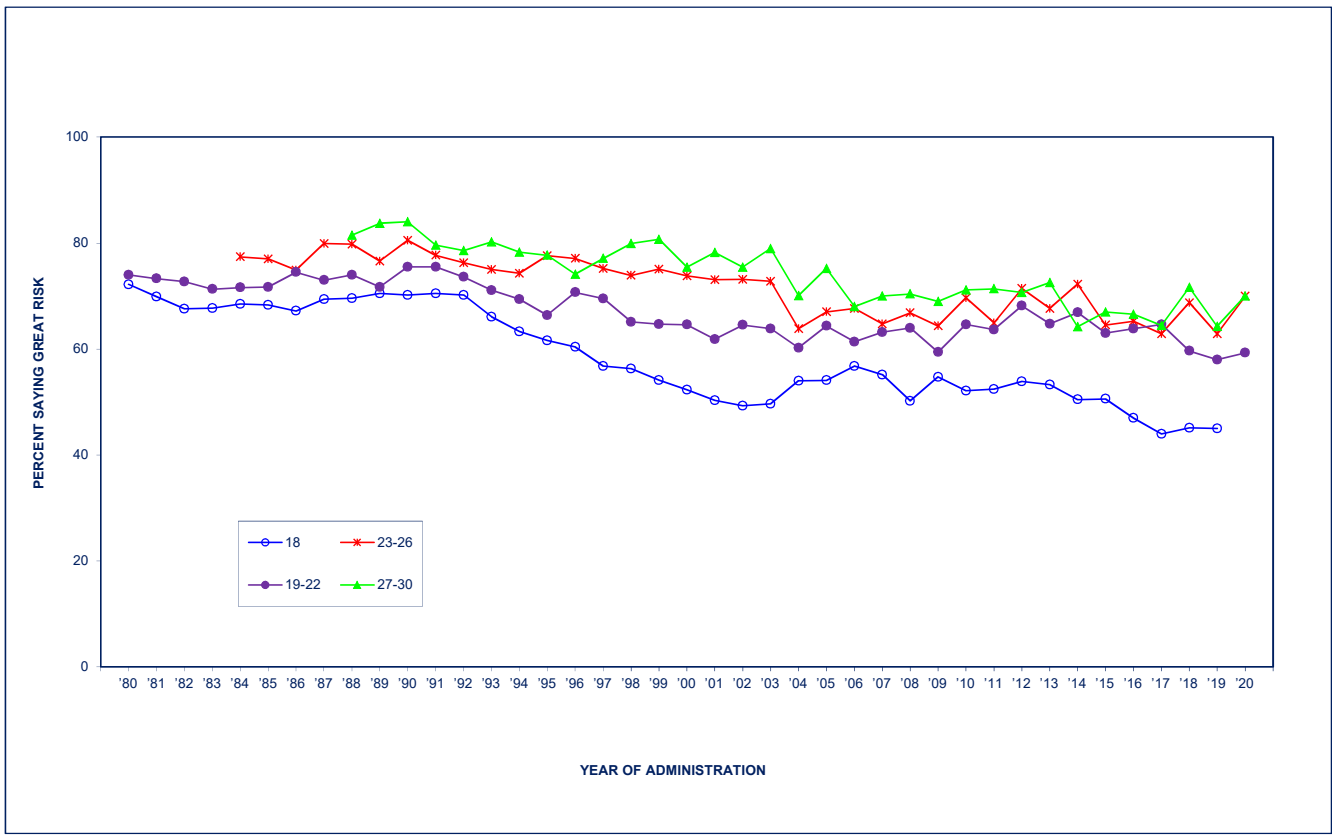
FIGURE 6-18
Trends in Perceived Risk of SEDATIVE (BARBITURATE)[1] Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



Source. The Monitoring the Future study, the University of Michigan.

[1]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2003 and 2004 results.

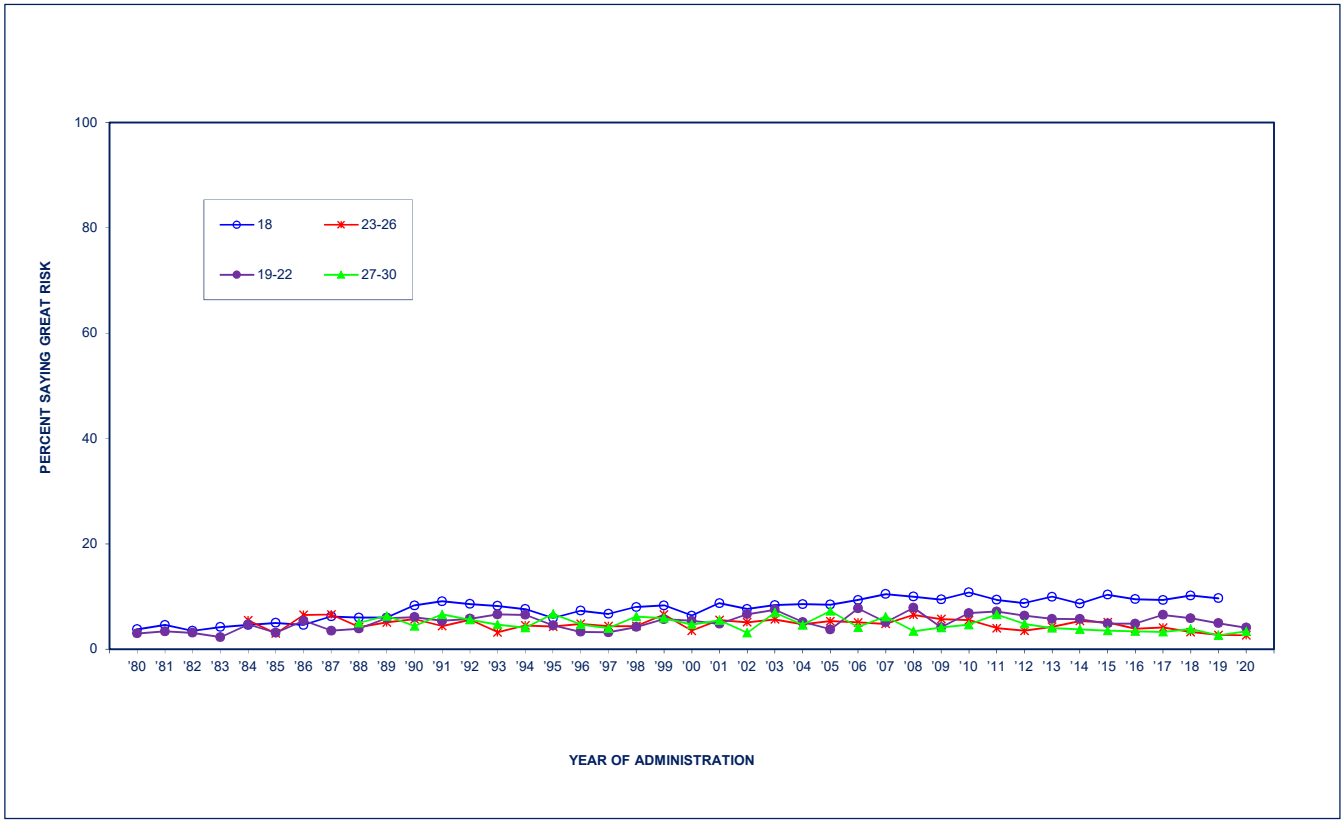
FIGURE 6-19
Trends in Perceived Risk of SEDATIVE (BARBITURATE)[1] Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

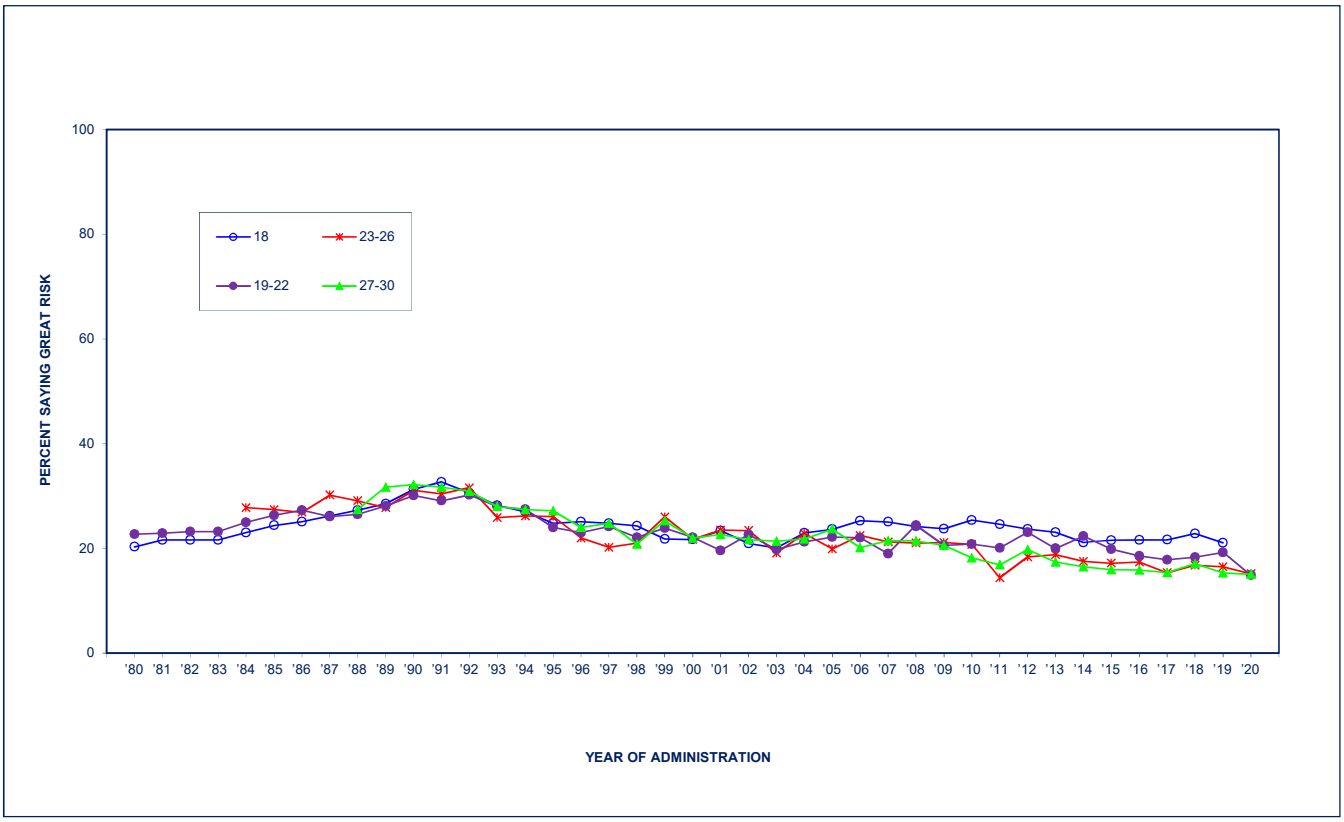
[1]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2003 and 2004 results.

FIGURE 6-20
Trends in Perceived Risk of ALCOHOL Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



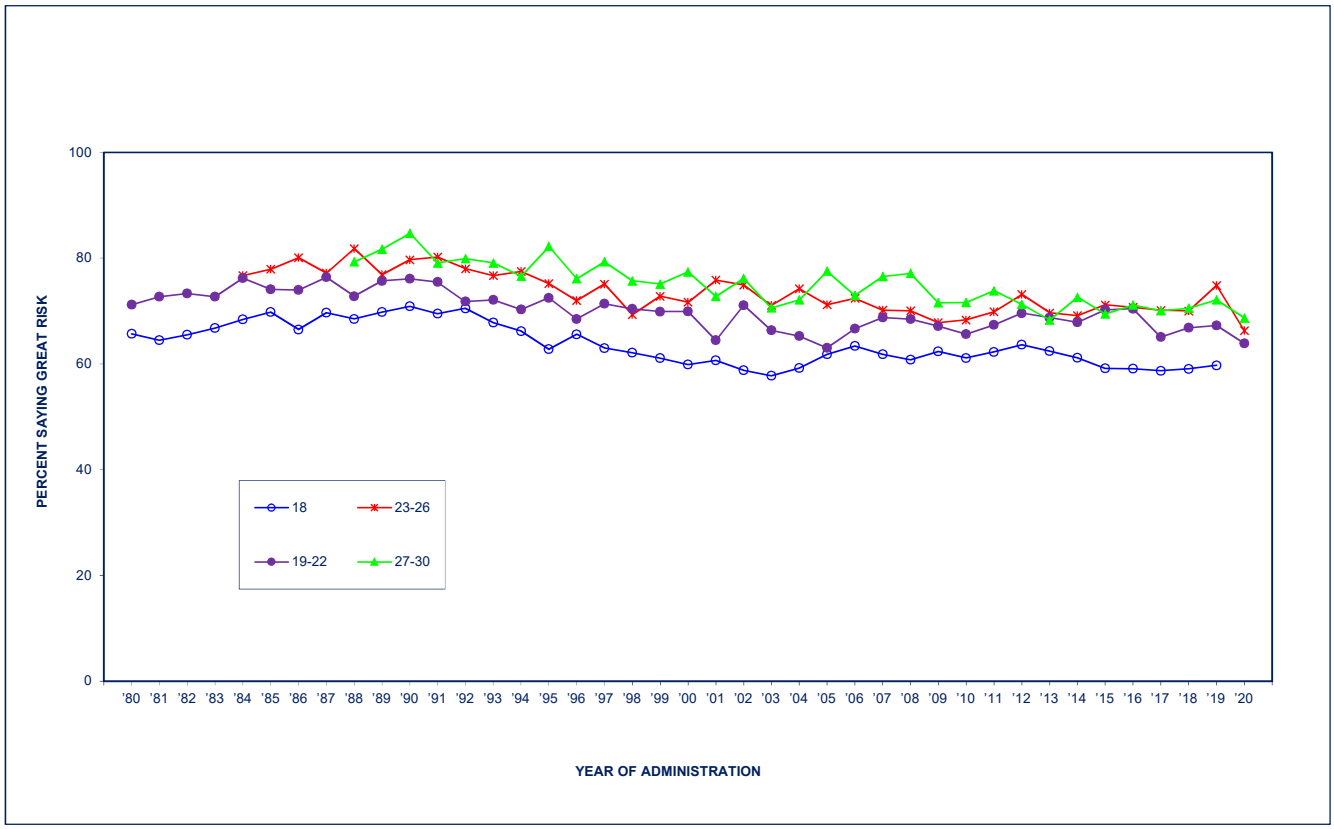
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-21
Trends in Perceived Risk of ALCOHOL Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Having One or Two Drinks per Day



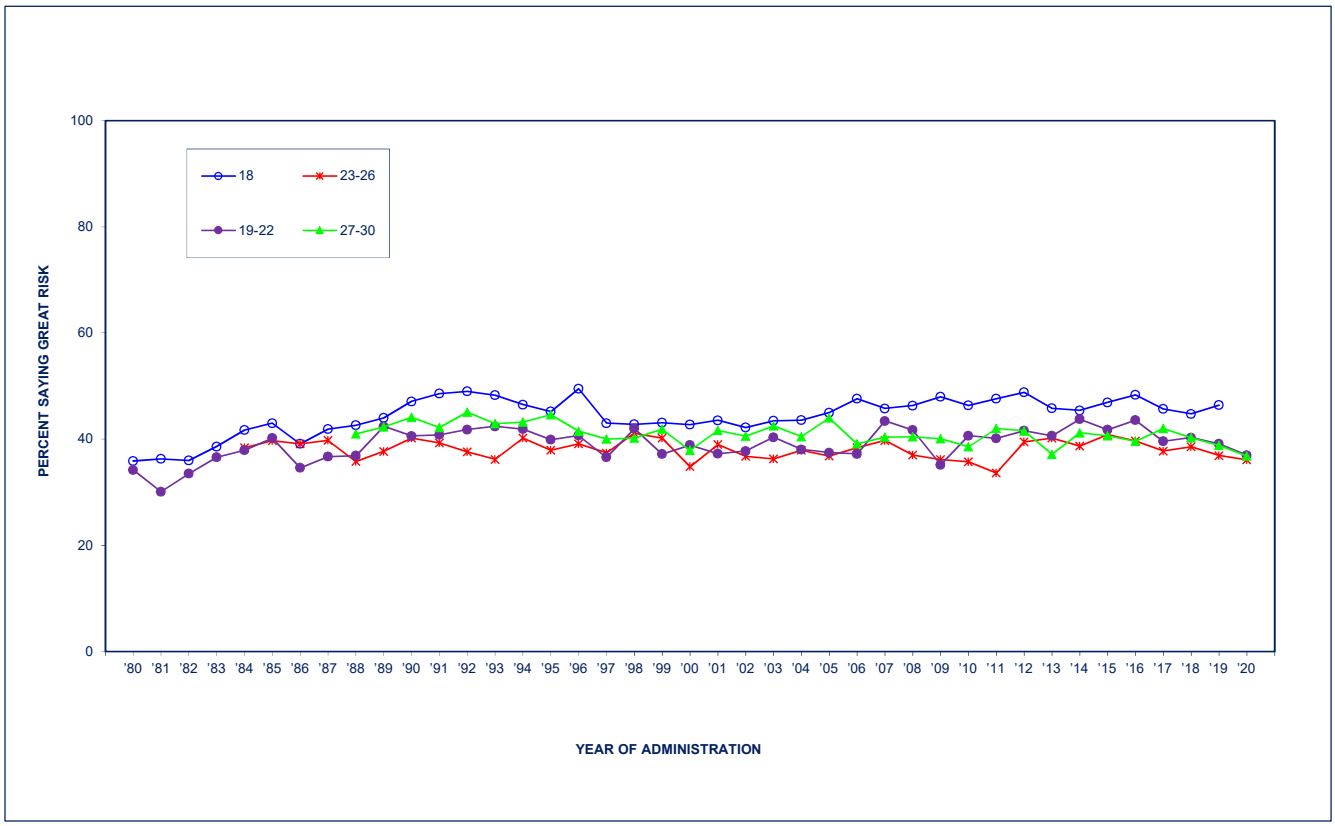
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-22
Trends in Perceived Risk of ALCOHOL Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Having Four or Five Drinks per Day



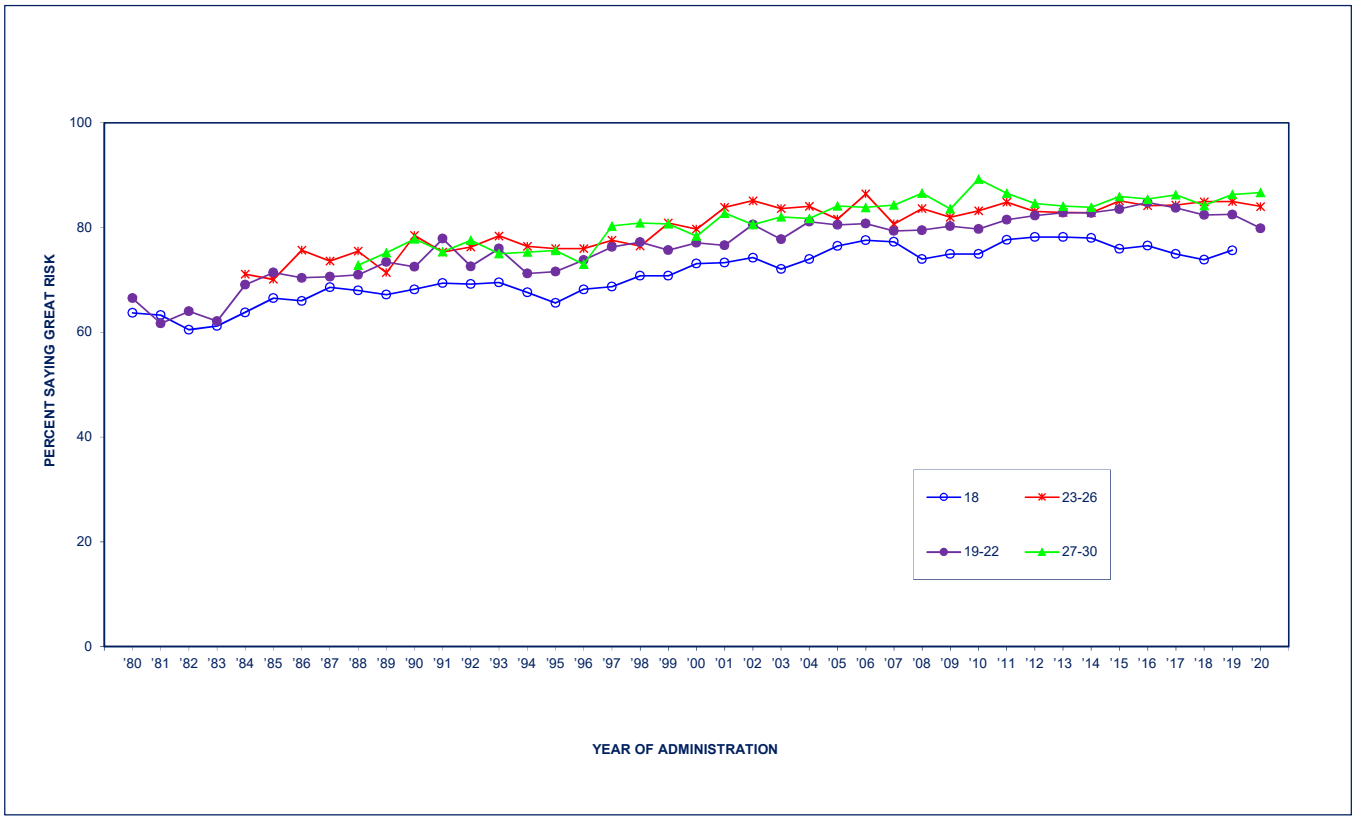
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-23
Trends in Perceived Risk of BINGE DRINKING
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Having Five or More Drinks Once or Twice Each Weekend



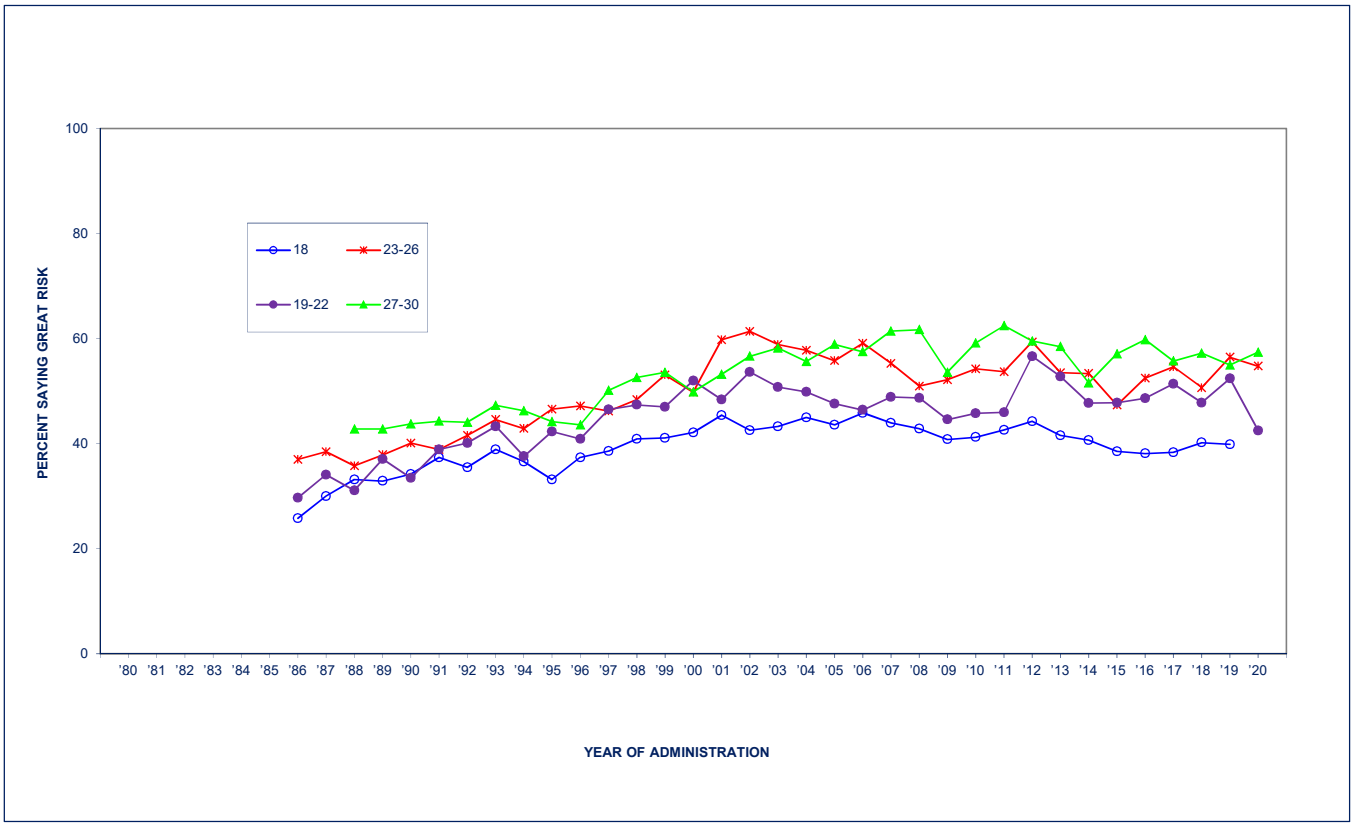
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-24
Trends in Perceived Risk of HEAVY SMOKING
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Smoking One or More Packs of Cigarettes per Day



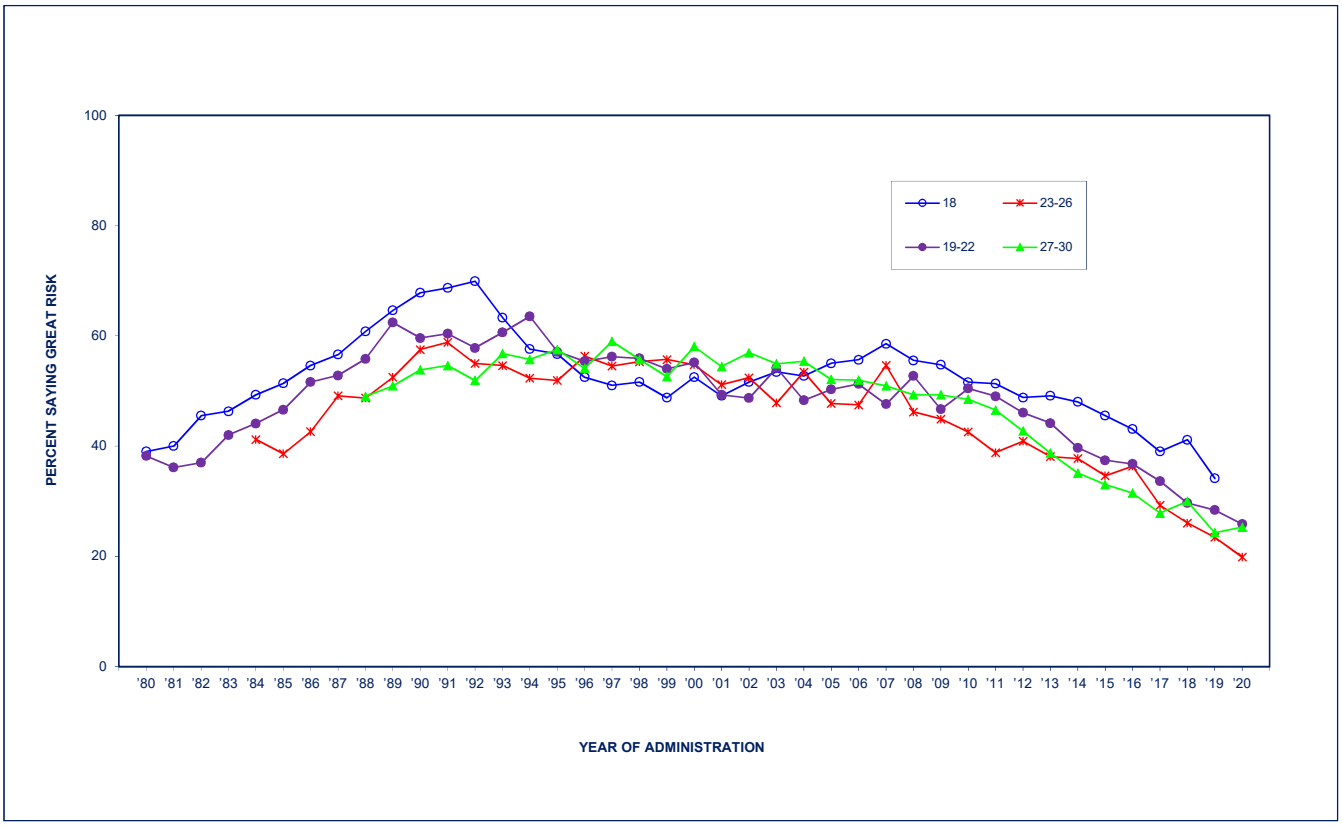
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-25
Trends in Perceived Risk of SMOKELESS TOBACCO Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



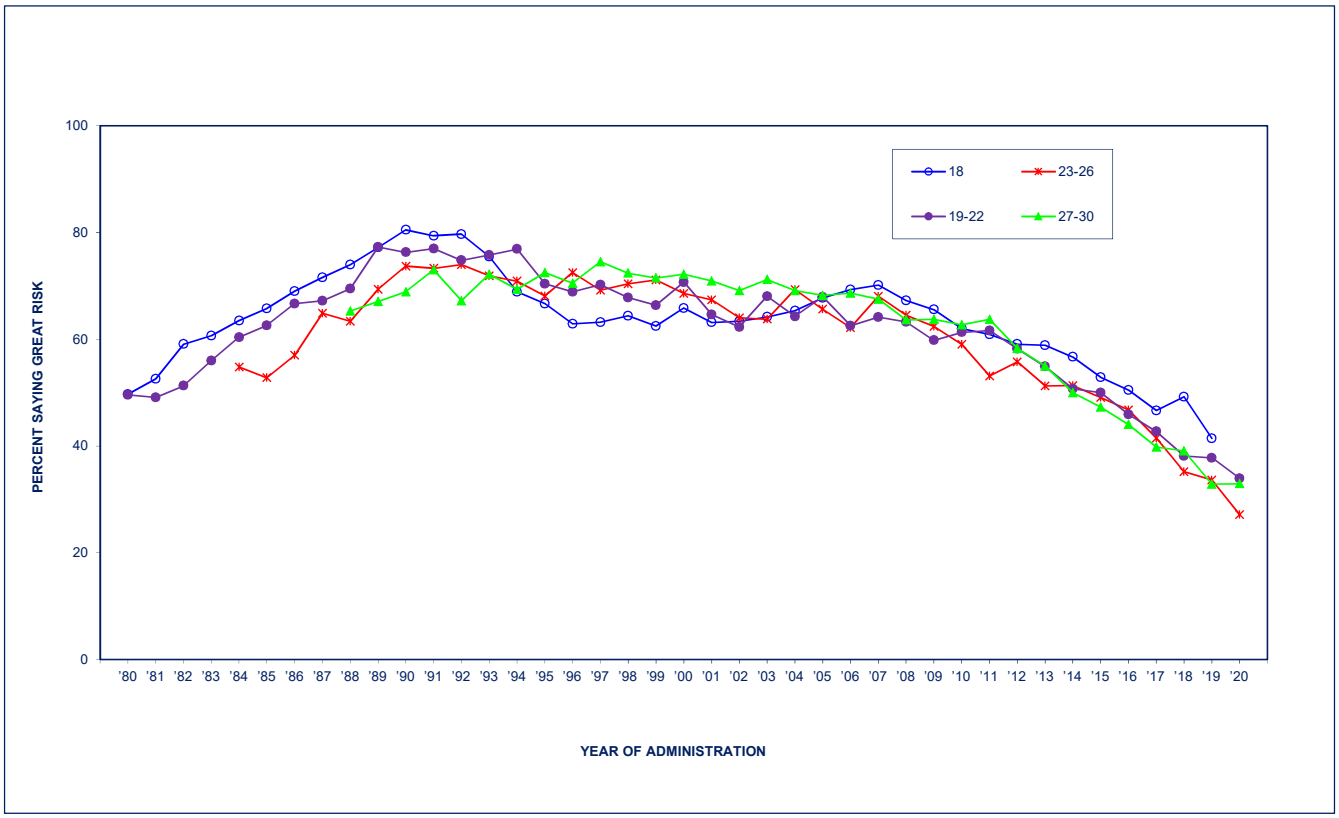
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-26
Trends in Disapproval of MARIJUANA Use by Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30 Trying Once or Twice



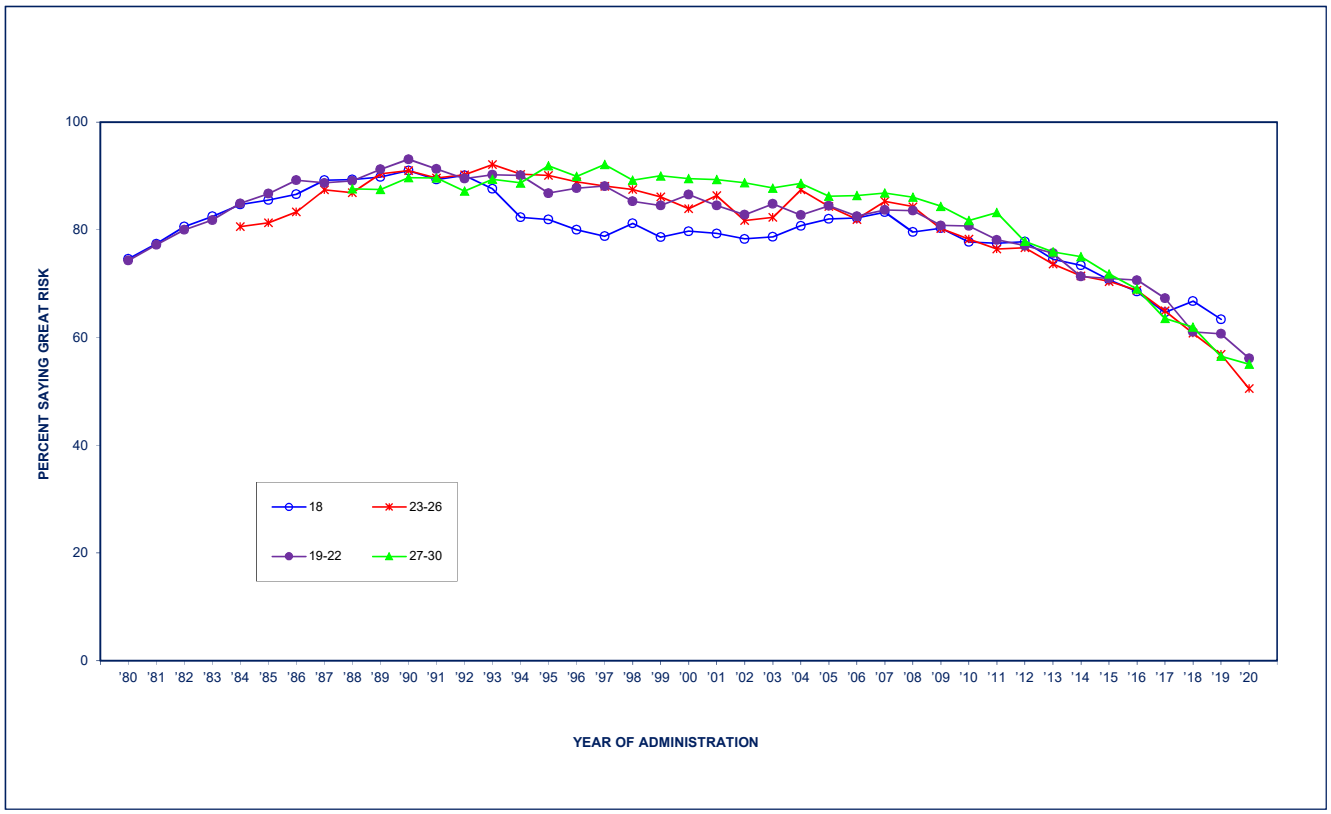
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-27
Trends in Disapproval of MARIJUANA Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Occasional Use



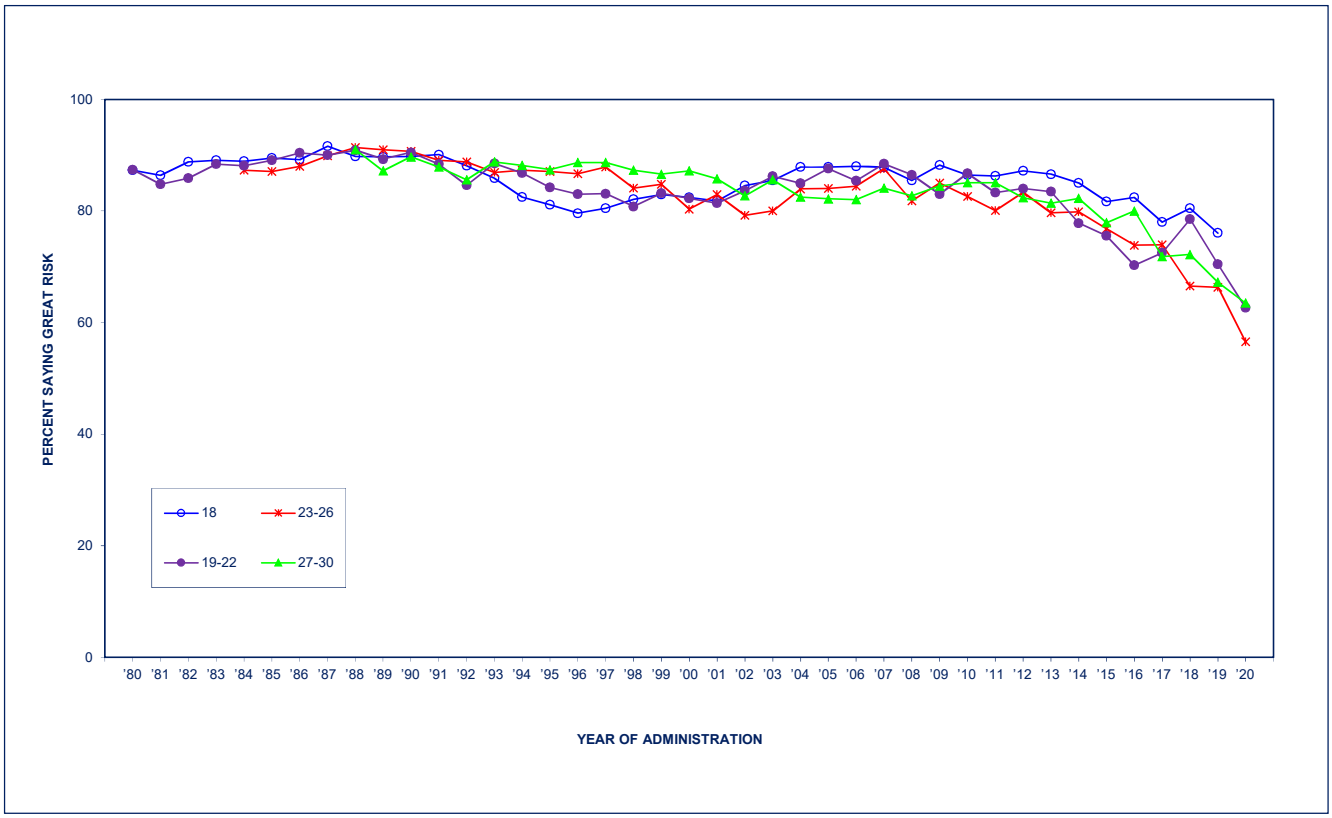
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-28
Trends in Disapproval of MARIJUANA Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



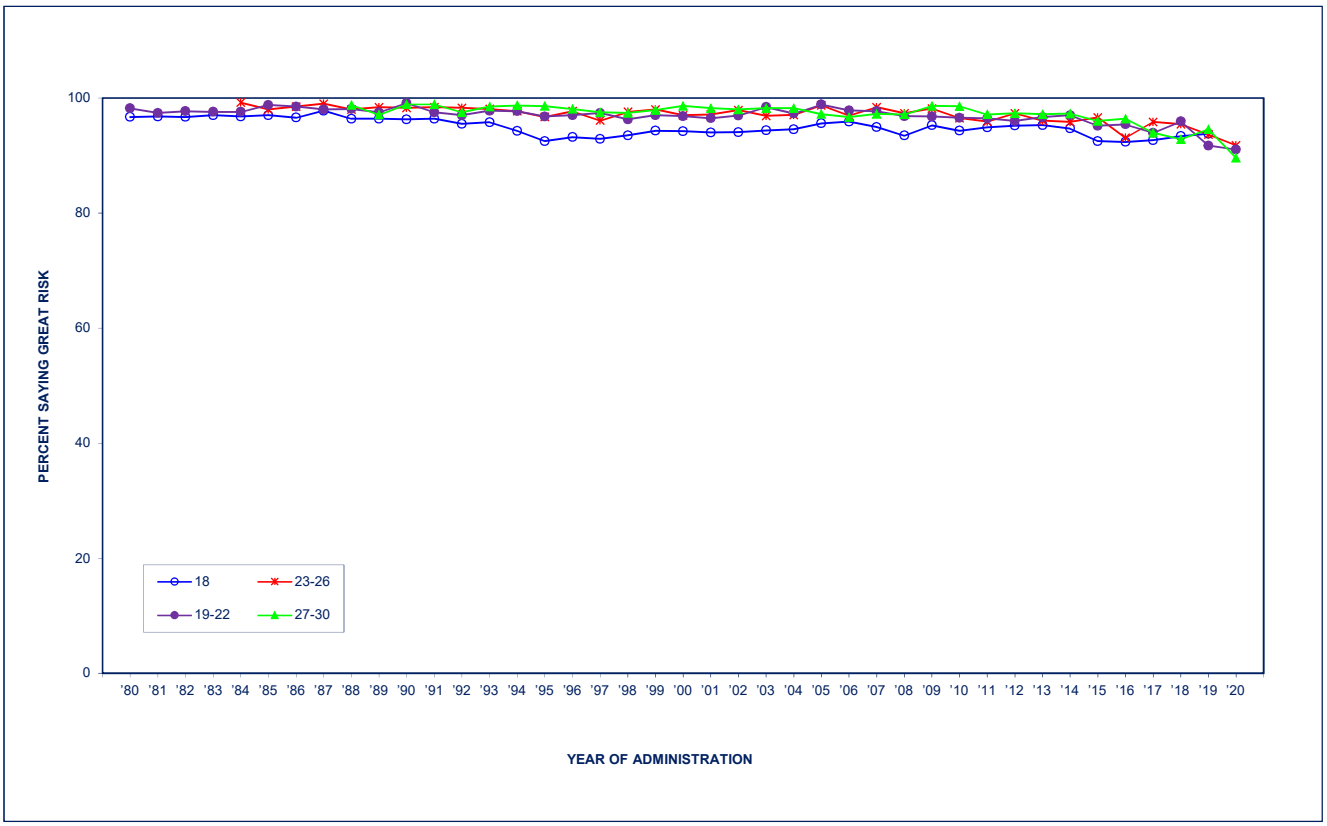
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-29
Trends in Disapproval of LSD Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



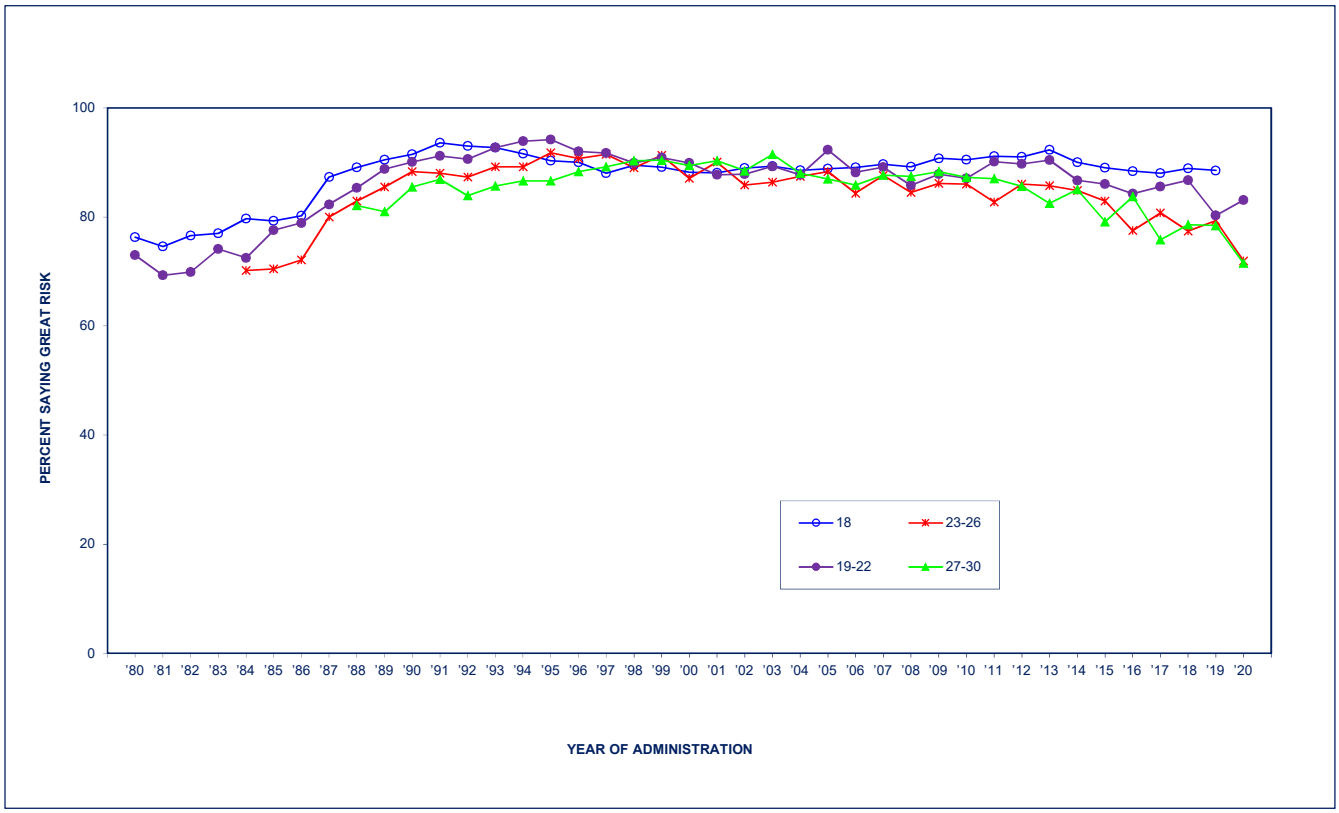
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-30
Trends in Disapproval of LSD Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



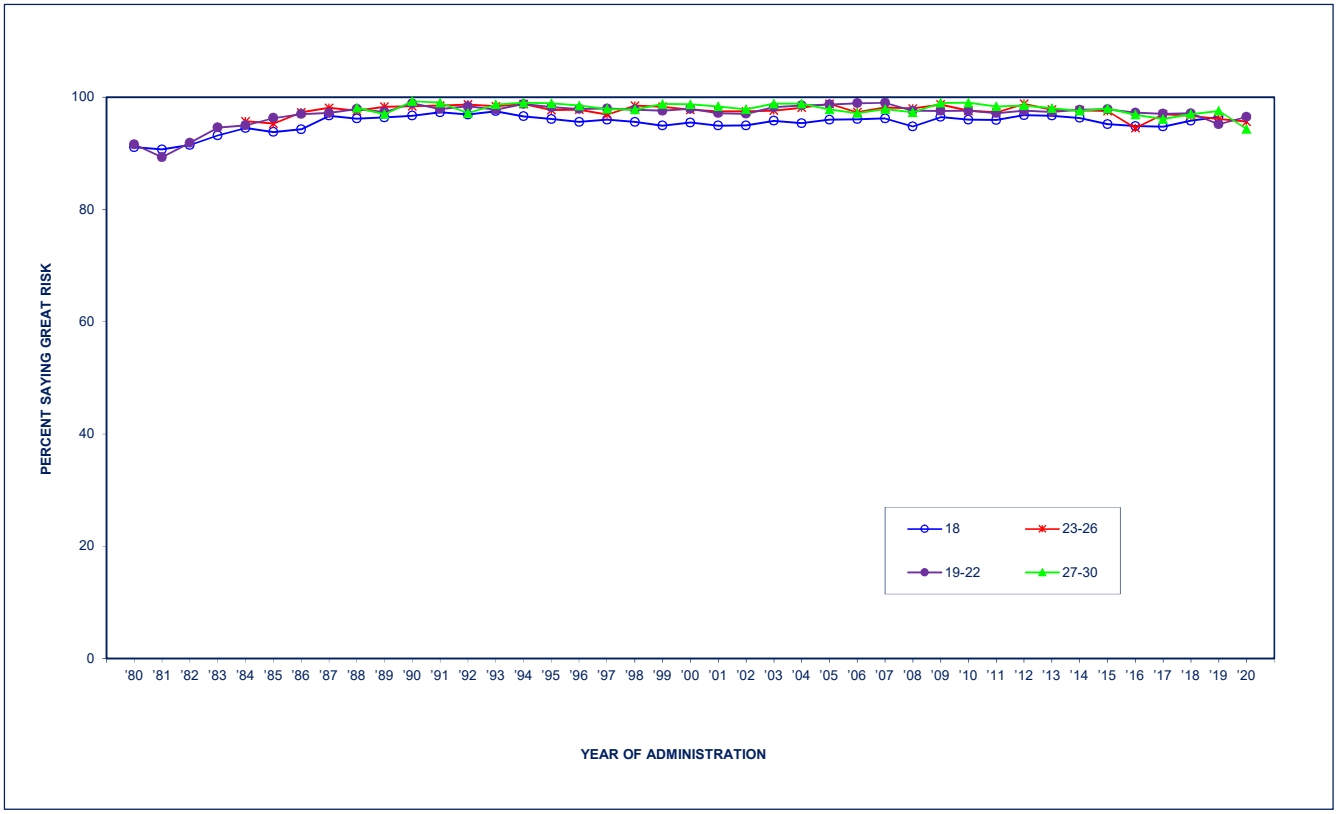
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-31
Trends in Disapproval of COCAINE Use by Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



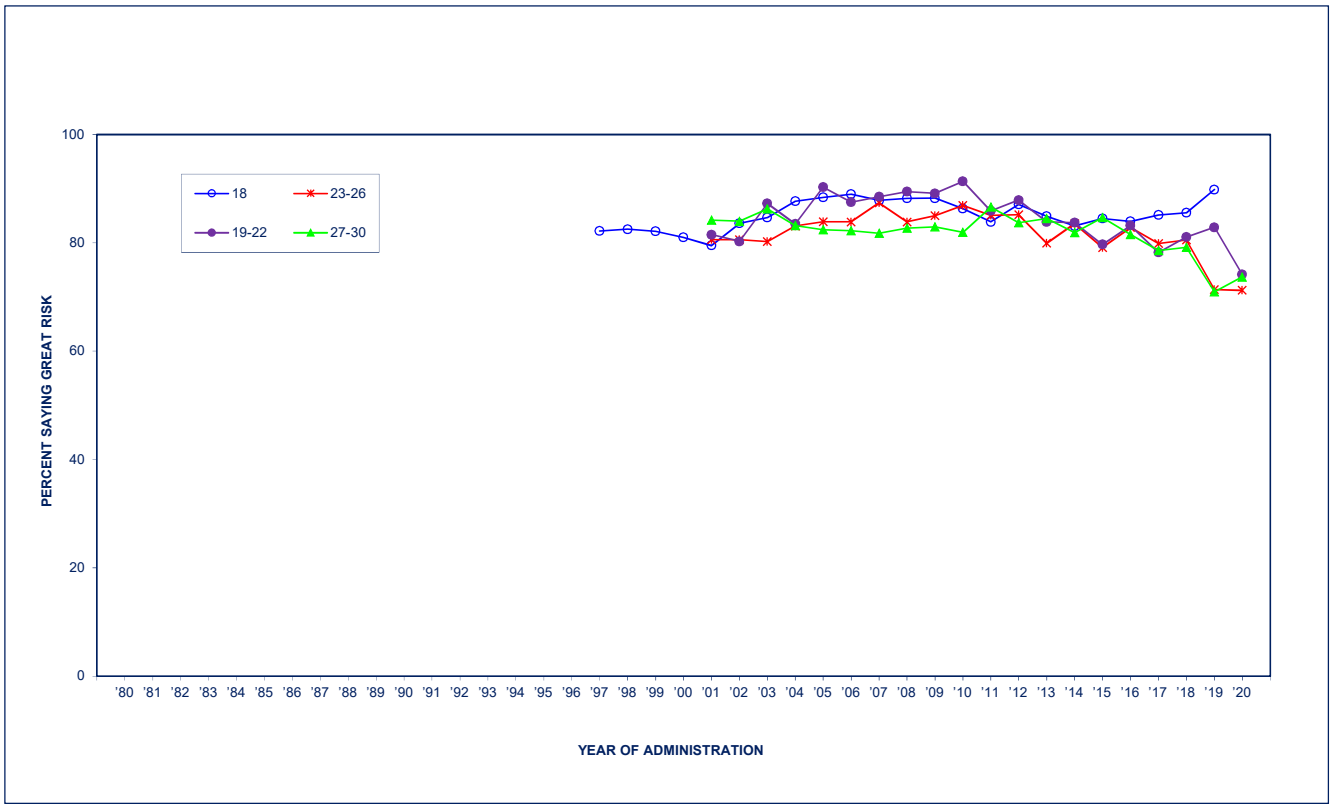
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-32
Trends in Disapproval of COCAINE Use by Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

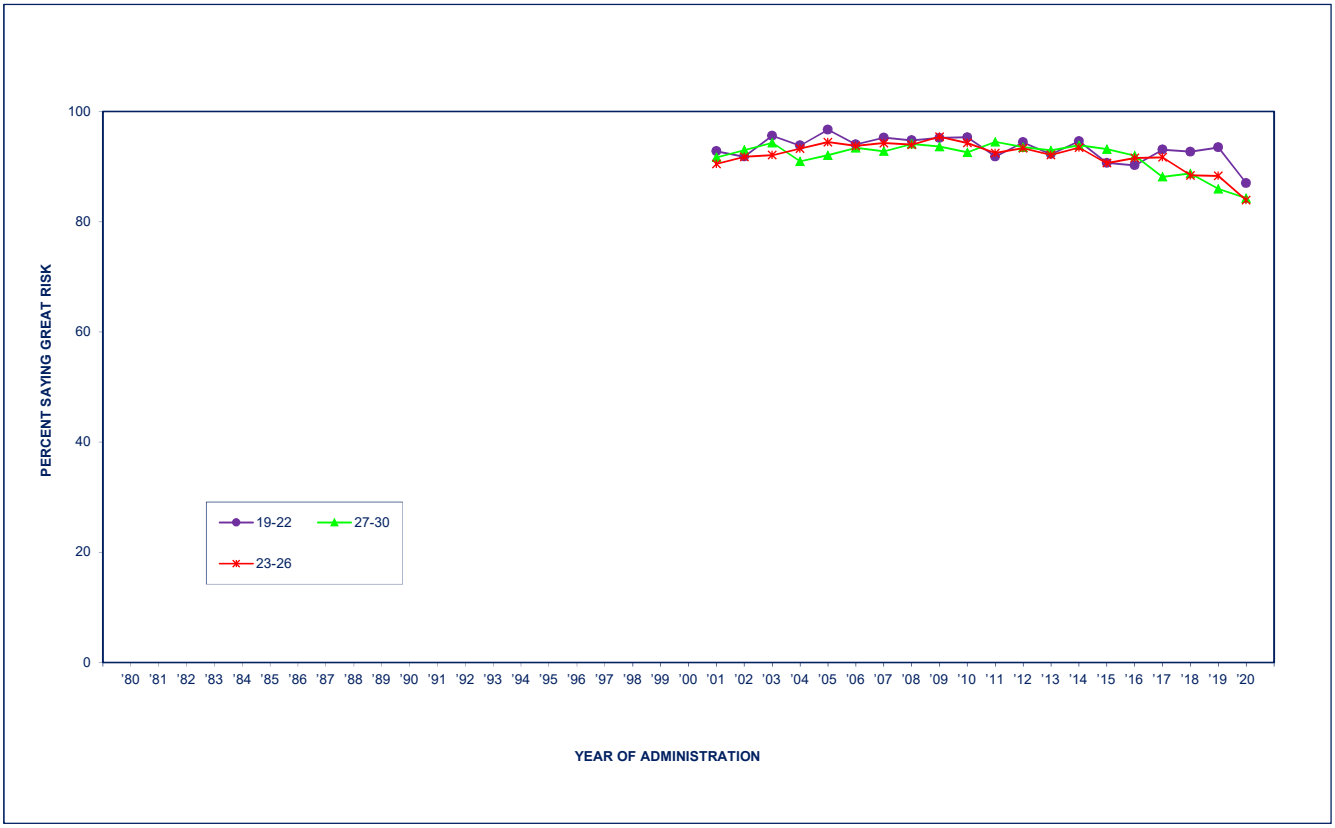
FIGURE 6-33
Trends in Disapproval of MDMA (Ecstasy, Molly)[1] Use by Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30 Trying Once or Twice



Source. The Monitoring the Future study, the University of Michigan.

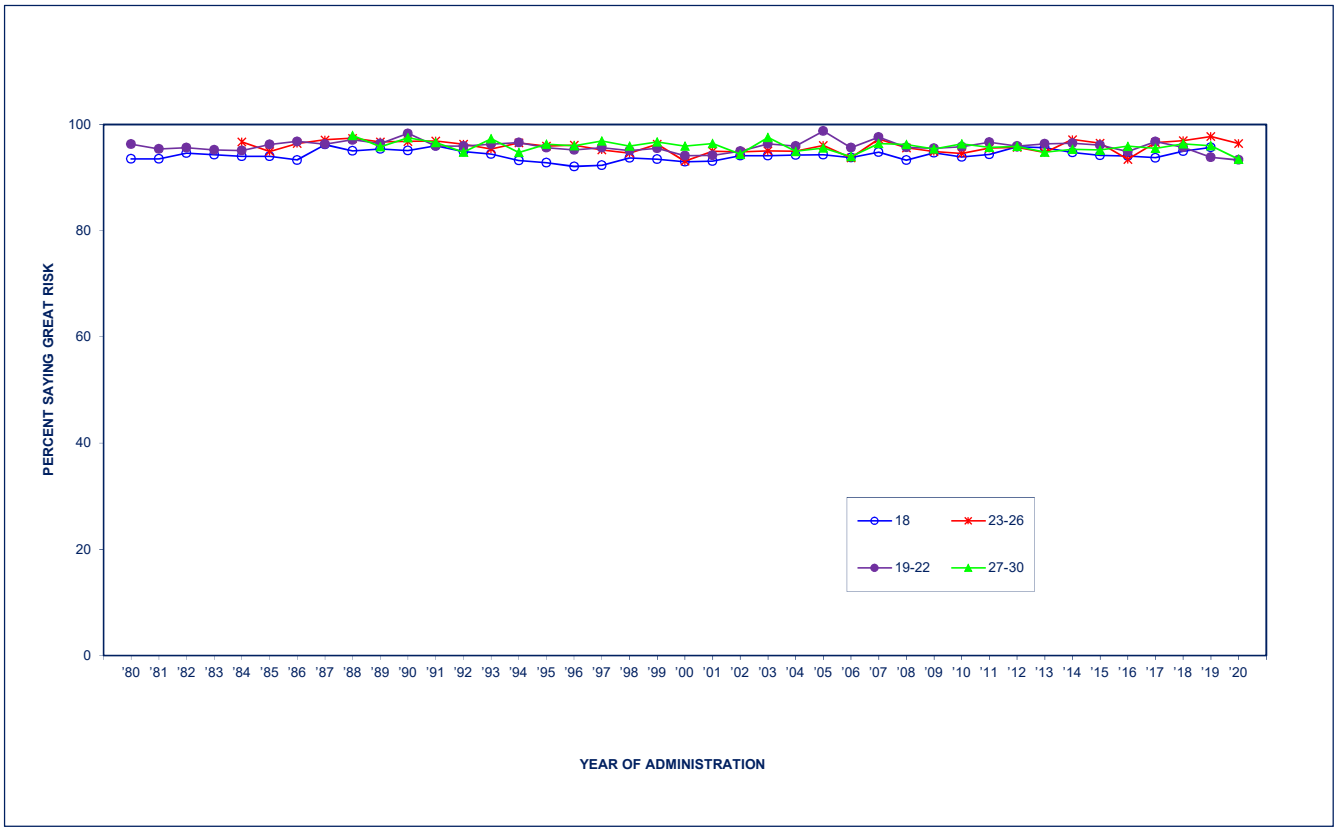
[1] In 2014 in the Age 18 questionnaire, "molly" was added to the question text. In 2015, the same change was made to the questionnaires for the other age groups. This likely explains the discontinuity in results for the affected years.

FIGURE 6-34
Trends in Disapproval of MDMA (Ecstasy, Molly)[1] Use by Respondents in Modal Age Groups of 19–22, 23–26, and 27–30
Occasional Use



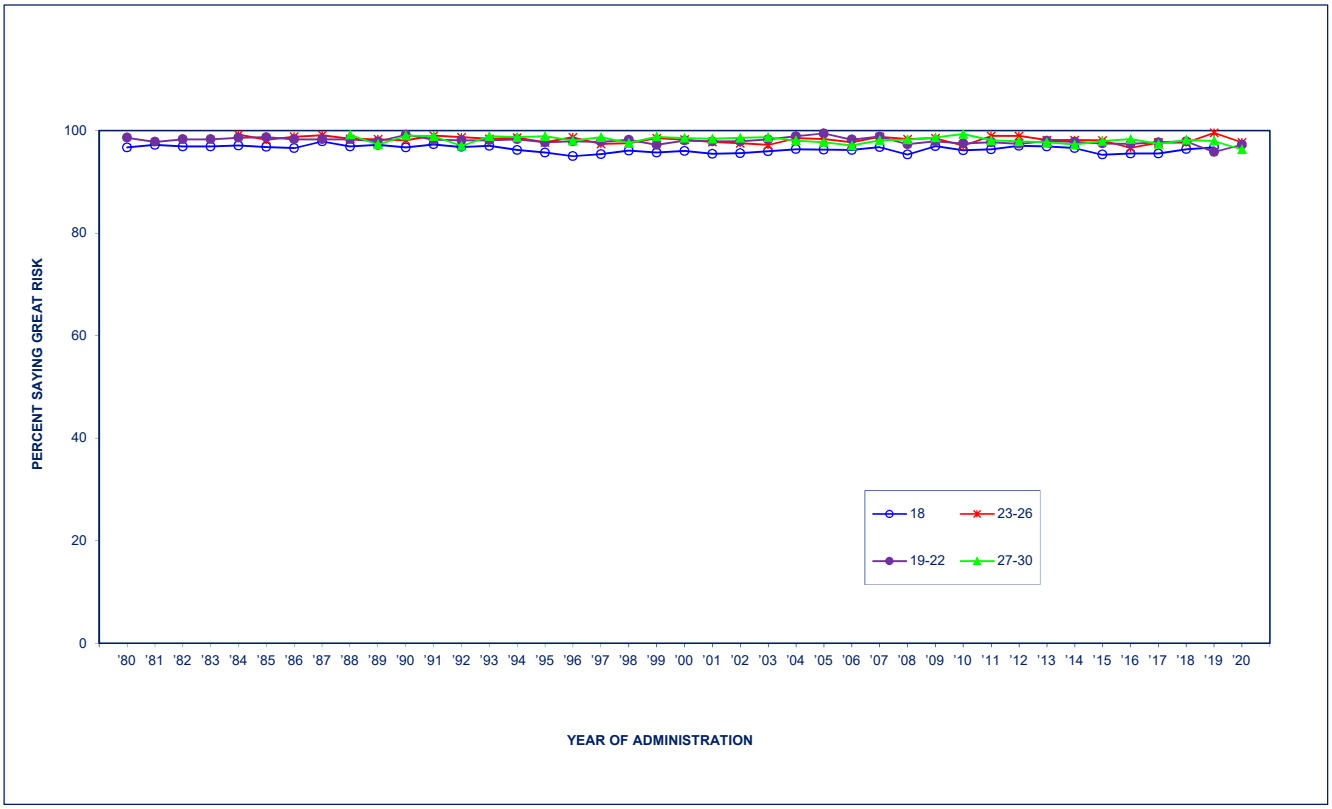
Source. The Monitoring the Future study, the University of Michigan.
[1] In 2015, "molly" was added to the question text. This likely explains the discontinuity in results for the affected years.

FIGURE 6-35
Trends in Disapproval of HEROIN Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



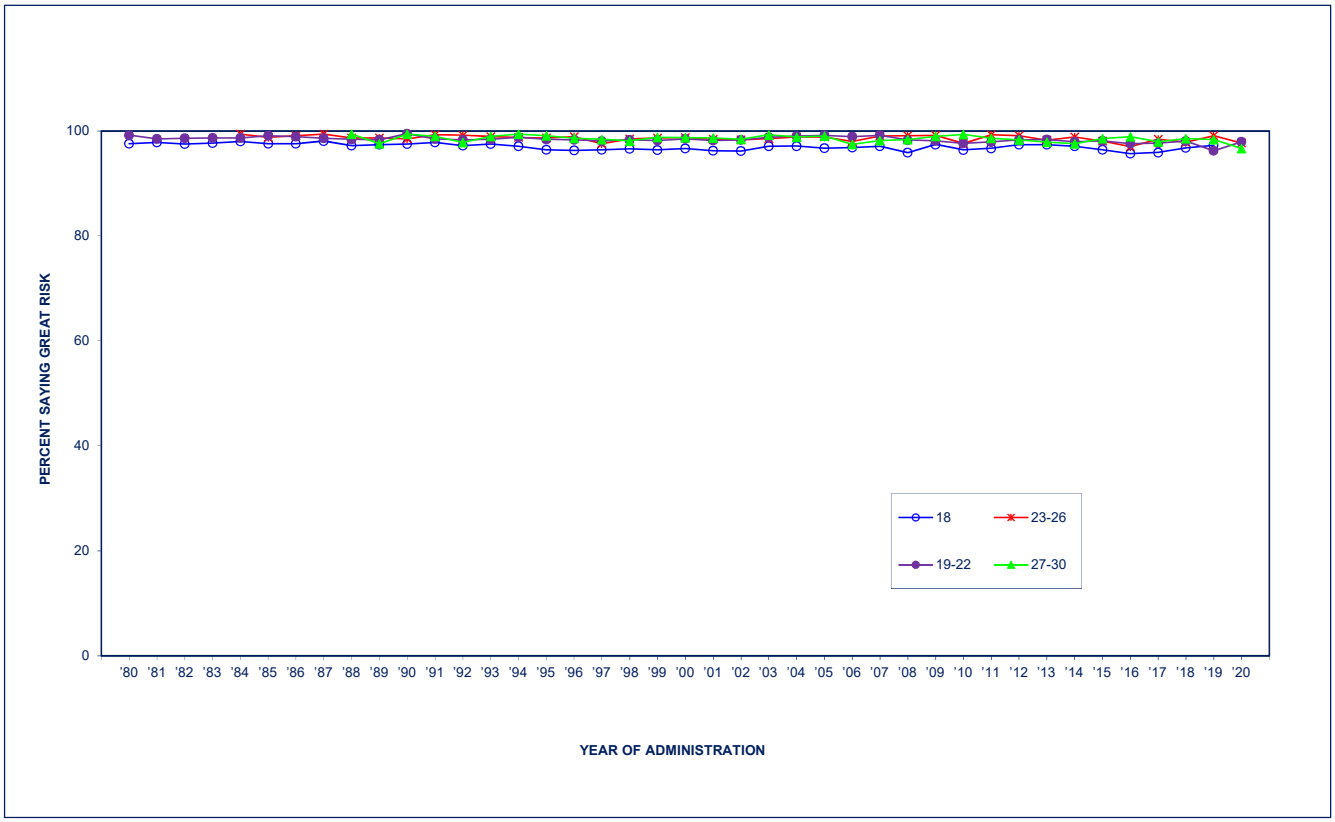
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-36
Trends in Disapproval of HEROIN Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Occasional Use



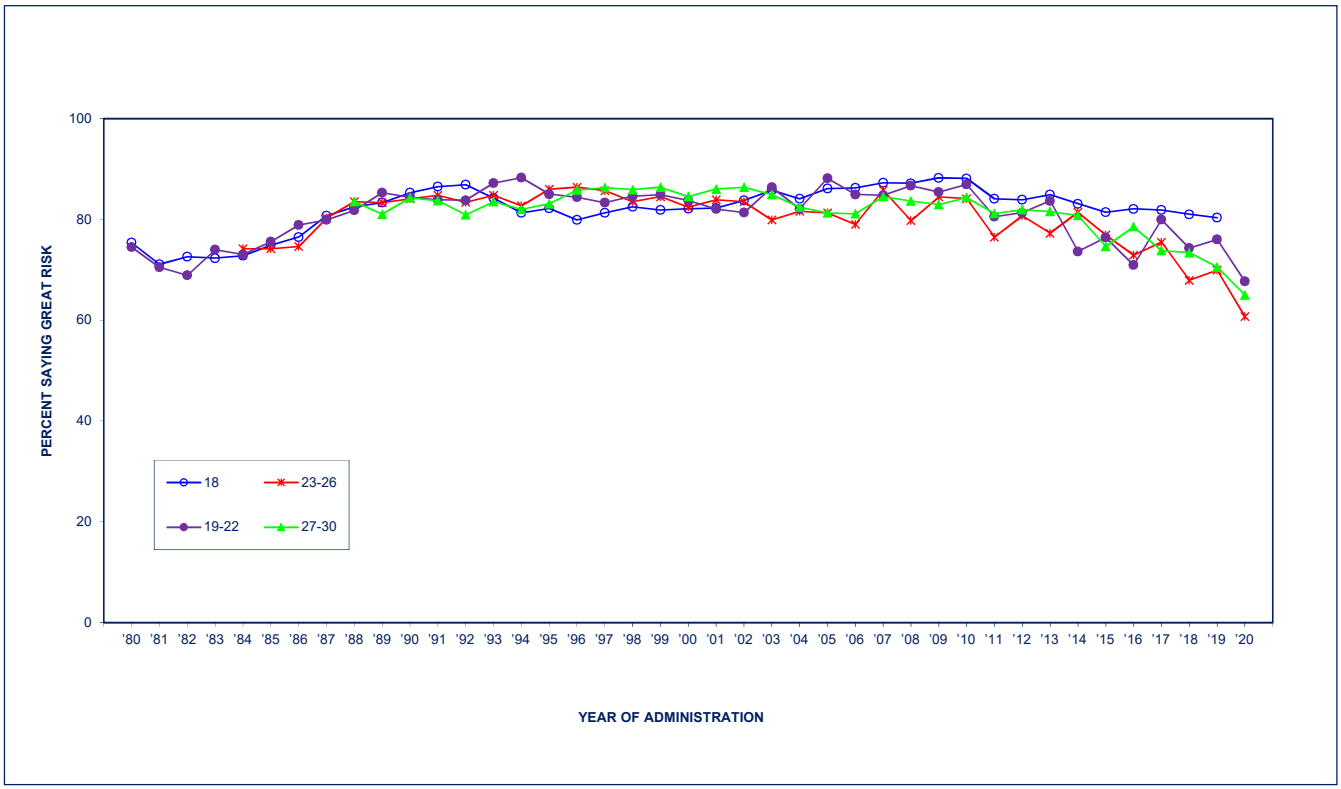
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-37
Trends in Disapproval of HEROIN Use by
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

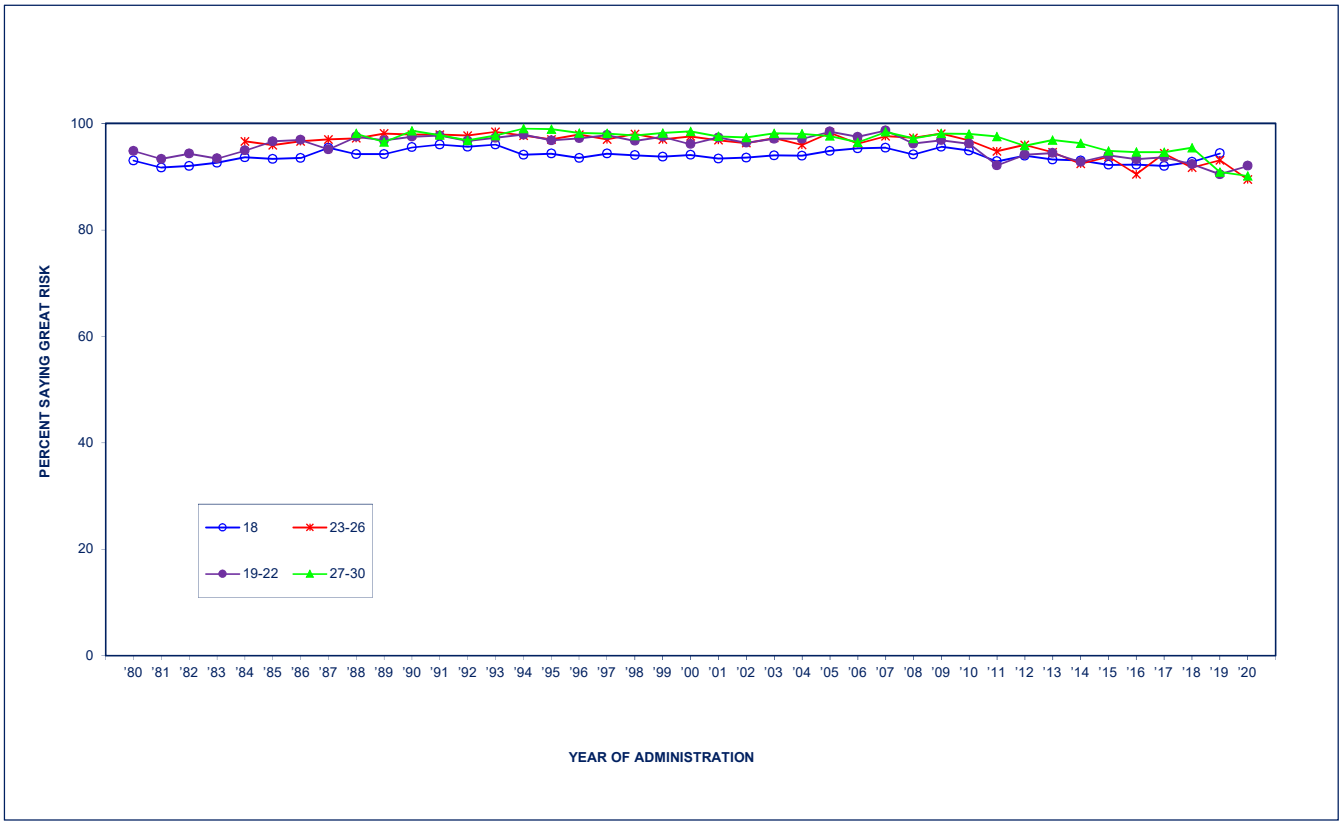
FIGURE 6-38
Trends in Disapproval of AMPHETAMINE[1] Use as Perceived by Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30 Trying Once or Twice



Source. The Monitoring the Future study, the University of Michigan.

[1]In 2011 the list of examples was changed from upper, pep pills, bennies, and speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

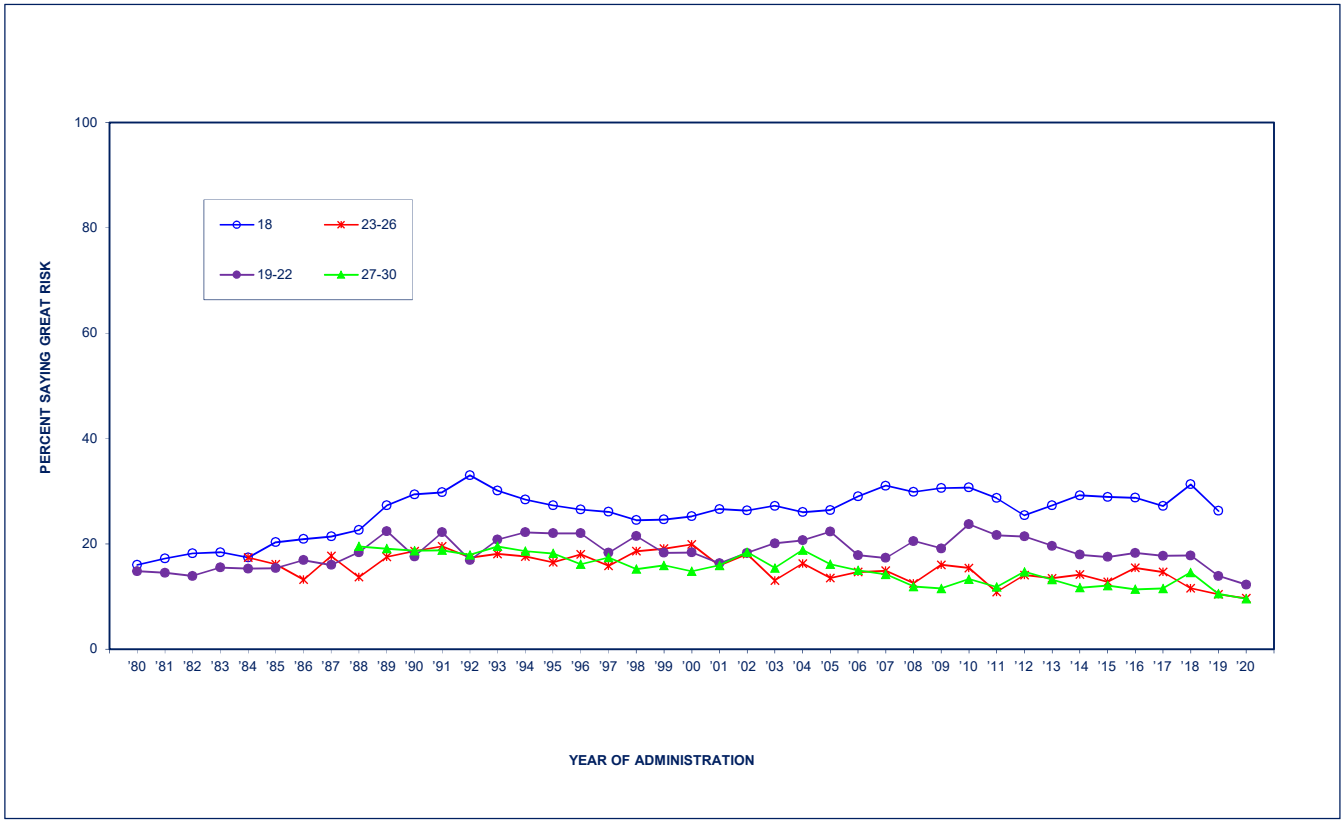
FIGURE 6-39
Trends in Disapproval of AMPHETAMINE[1] Use as Perceived by Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Regular Use



Source. The Monitoring the Future study, the University of Michigan.

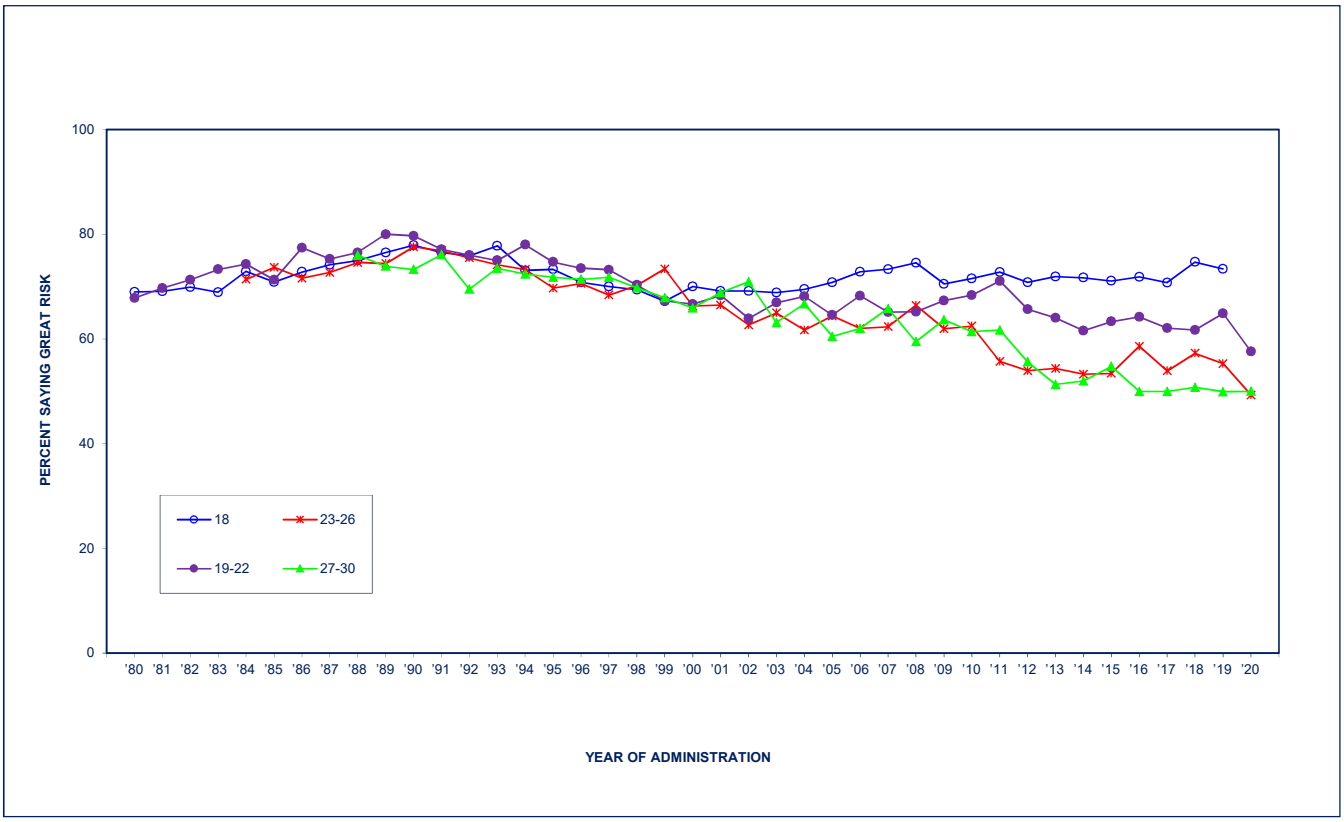
[1]In 2011 the list of examples was changed from upper, pep pills, bennies, and speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

FIGURE 6-40
Trends in Disapproval of ALCOHOL Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Trying Once or Twice



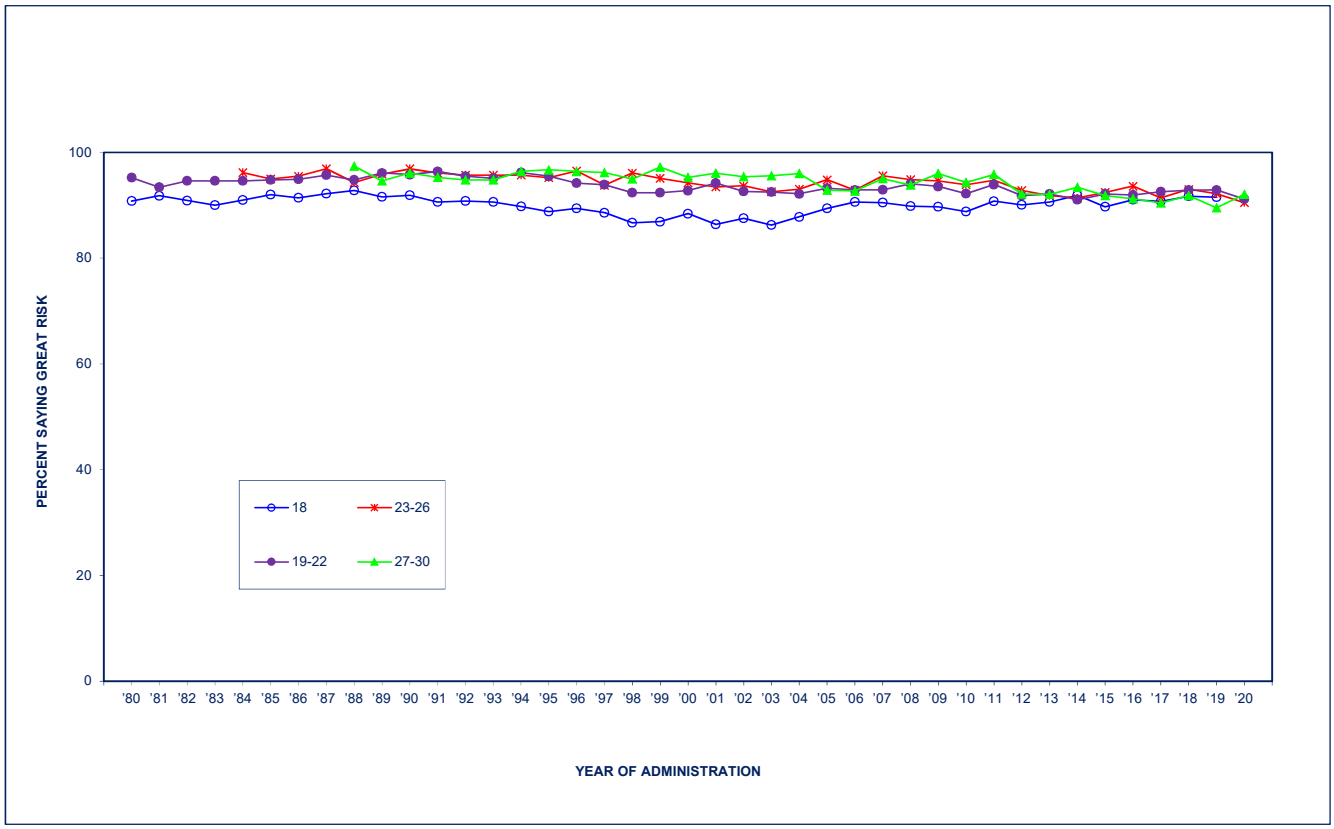
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-41
Trends in Disapproval of ALCOHOL Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Having One or Two Drinks per Day



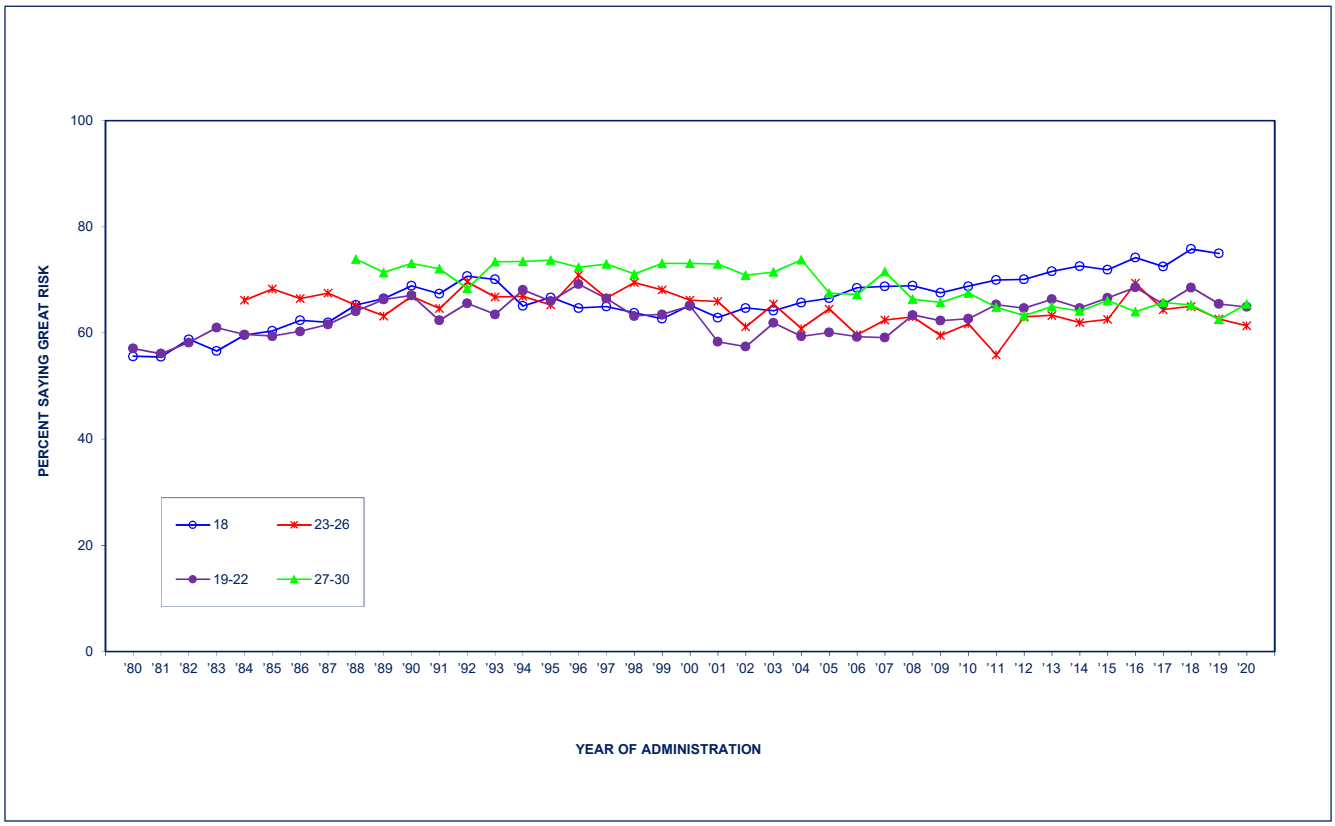
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-42
Trends in Disapproval of ALCOHOL Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Having Four or Five Drinks per Day



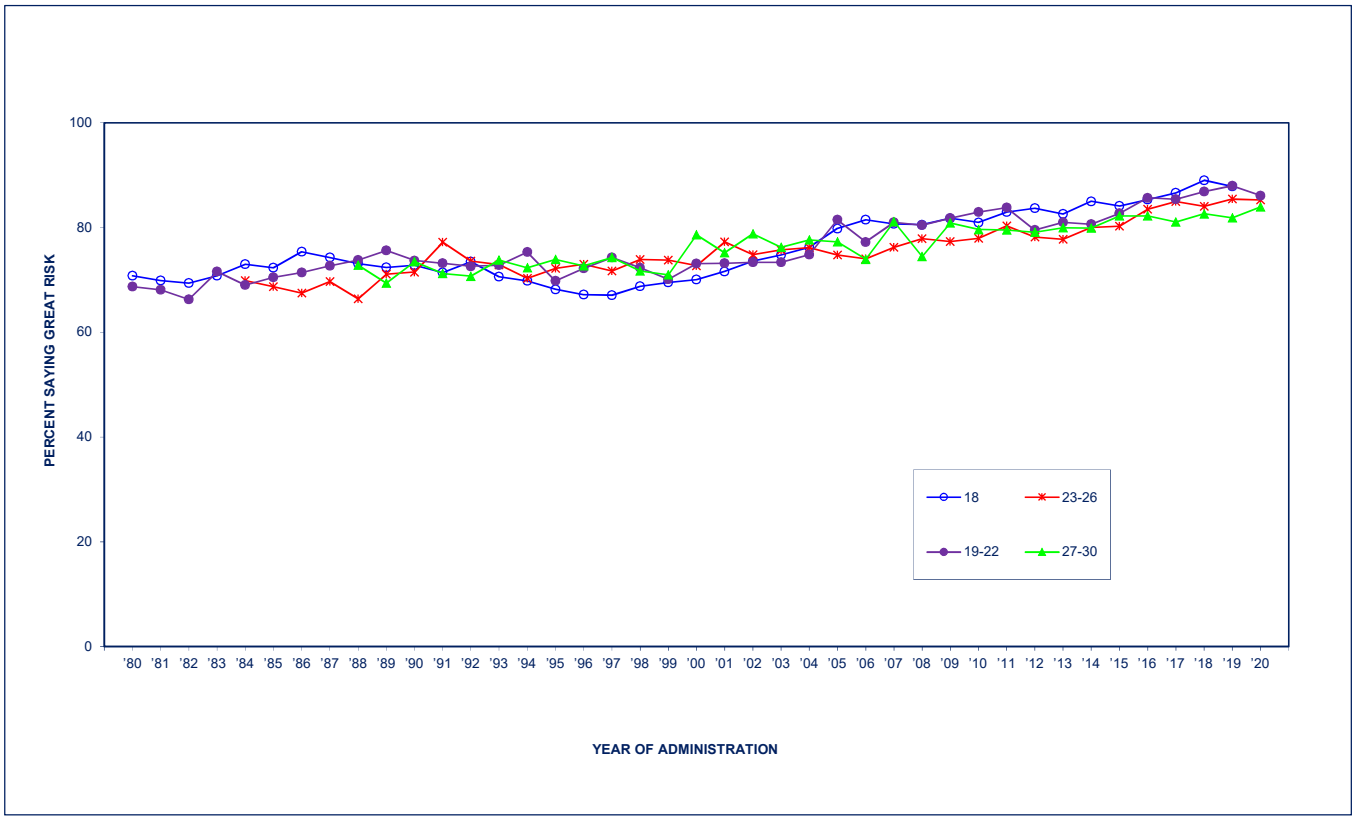
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-43
Trends in Disapproval of BINGE DRINKING
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Having Five or More Drinks Once or Twice Each Weekend



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 6-44
Trends in Disapproval of TOBACCO Use
Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30
Smoking One or More Packs of Cigarettes per Day



Source. The Monitoring the Future study, the University of Michigan.

Chapter 7

THE SOCIAL CONTEXT

The social contexts in which individuals place and otherwise find themselves can influence the likelihood of using drugs in a number of ways. The context can provide social modeling and social norms for either use or abstention from use. Through friends and friends' contacts it can also influence the availability of drugs and bring about an awareness of new drugs, including knowledge of their existence and their potential for risks as well as well for altering mood and consciousness. Since its inception, MTF has measured three important features of the social context: (1) peer groups' norms about drug use, (2) amount of direct exposure to drug use by friends and others, and (3) perceived availability of drugs. All three factors are measured by self-reports and are therefore measures of the perceived context. These three factors likely exert important influences on substance use at both the individual (micro) and the aggregate (macro) level.

In *Volume I*,[1] we examined these three factors among secondary school students. In this chapter, we do the same for the young adult population ages 19 to 30, whose social contexts typically differ considerably from what they were in high school. Most high school graduates today enter college, many get civilian jobs, and some enter military service. These transitions almost always change the institutional contexts experienced by young adults (e.g., colleges, work organizations, military services) and therefore the circles of people to whom they are exposed and with whom they develop friendships. Such transitions also alter the potential consequences of drug use if it is discovered by authorities in the relevant institution; for example, consequences can be quite severe for those in military service, and we have shown that illicit drug use drops when young people enter the military.[2]

Each of the question sets discussed here is contained in only one of the six questionnaire forms for young adults, so the case counts are lower than those presented in most chapters in this volume. Therefore, these prevalence and trend estimates are more subject to random fluctuation or "noise" compared to those based on more questionnaire forms in this volume as well as those covered in *Volume I*[1] (MTF's cross-sectional secondary school samples are much larger than its young adult samples). As we did in Chapter 6, when examining age variation within those aged 19-30, we use four-year age bands (19-22, 23-26, 27-30) to increase the available sample sizes to about 250-600 weighted cases per year for each age band, thereby improving the reliability of the estimates. We also include consideration of norms, exposure, and availability where relevant among those age 35 through 60. In such cases, the data are based on larger numbers because just one form is used for all respondents being surveyed at each particular age. (The numbers of weighted cases are given at the end of each table [7-1 through 7-4]. The actual numbers of respondents are somewhat larger.) Note that not all drugs are reported for all age groups in all years, as will be explained below. For example, friends' disapproval of LSD use and amphetamine use are not reported after 2009 in Table 7-1.

[1] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Monitoring the Future national survey results on drug use, 1975-2020: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, University of Michigan.
[2] Bachman, J. G., Freedman-Doan, P., O'Malley, P. M., Johnston, L. D., & Segal, D. R. (1999). Changing patterns of drug use among U.S. military recruits before and after enlistment. *American Journal of Public Health, 89*, 672-677.

As discussed in Chapter 3, in both the 2018 and 2019 data collections of 19-30 year olds, we randomly assigned half to receive typical mail surveys and half to a web-push condition (in which they were encouraged to complete a web-based survey). There were very few significant differences between the two conditions in the measures summarized in this chapter (across the various measures and age groups, 8 comparisons were statistically significant in 2019 and in 2018 13 were significant out of several hundred comparisons each year); thus, the two conditions were combined, and we note the very few significant differences between conditions in Tables 7-1 through 7-4. In 2020, all young adults received web-push survey procedures. In addition to conducting significance tests of one-year trends (2019-2020) in the full samples in the tables, we provided supplemental tests of the one-year trends among young adults, comparing the web-push sample in 2019 to the full (all web-push) sample in 2020; these supplemental findings are listed as footnotes in Tables 7-1 through 7-4 and as footnotes in the text when appropriate (only when there were differences in significance tests). The most common outcome when considering these potential differences was consistency in significant tests; when there was a difference, in all but one case, it was a difference of magnitude, not direction.

As discussed in Chapter 3, for data collections among 35-60 year olds in 2020, we began the transition from our typical mail-based surveys to web-based surveys. To test for survey mode differences, we randomly assigned half of each age group to the typical mail survey condition and half to the new web-push condition. We found few significant differences in estimates of prevalence of drug use between the two conditions (a total of four, listed in Table 7-2); thus, we combined data from the two conditions in this chapter. We note exceptions when estimates differed significantly between conditions in footnotes in the tables.

PEER NORMS AMONG YOUNG ADULTS (AGES 18–30)

Table 7-1 provides current levels and trends in perceived friends' disapproval of experimental, occasional and regular use of marijuana, alcohol, and cigarettes as reported by 12th graders, 19-22 year olds, 23-26 year olds, and 27-30 year olds. As noted earlier in this volume, some 2020 data were not available for 12th graders due to data collection interruptions because of the pandemic, and this includes the data presented in this chapter; 12th grade data are presented up through 2019 for comparison purposes regarding trends. Trend data are available since 1980, 1984, and 1988, respectively, for the three 4-year age groupings of young adults. The survey question reads, "How do you think your close friends feel (or would feel) about you… [trying marijuana once or twice]?" The answer categories are "don't disapprove," "disapprove," and "strongly disapprove." Percentages discussed below are for the last two categories *combined*. Exact wording for the other drugs may be found in Table 7-1.

The results for perceived peer norms are generally quite consistent with those for personal disapproval in the aggregate. Exceptions over the years include trying marijuana once or twice and smoking one or more packs of cigarettes per day, for which friends' attitudes have been consistently reported as more disapproving than respondents' own attitudes, and weekend binge drinking, for which friends' attitudes are seen as less disapproving than their own. The question set regarding friends' disapproval employs a shorter list of drug-using behaviors but includes the same answer scale, stated in terms of strength of disapproval associated with different use levels of the various drugs, as do the questions on the respondent's own attitudes about those behaviors (discussed in Chapter 6). While peer disapproval and personal disapproval questions appear on

different questionnaire forms and therefore have different sets of respondents, the forms are distributed randomly in respondents' senior year of high school and should leave no systematic sample differences.

Overview of Peer Norms (Ages 18 to 30)

For each age band Table 7-1 provides trends in the proportions of respondents indicating how their close friends would feel about the respondent engaging in various drug-using behaviors. For purposes of simplification in this section, we begin by addressing results across the entire 19- to 30-year age band (tabular data for the entire age band are not presented). Generally, the peer norms reported by young adults one to 12 years past high school have been similar to peer norms reported by 12th graders (when considering 2019 and earlier data, which are reported in earlier editions of this volume). In the next section in this chapter, we will distinguish among the three young adult age bands: 19-22, 23-26, and 27-30, along with 18 year olds. In 2010 questions about friends' disapproval were dropped from the young adult follow-up questionnaires for all drugs except ***marijuana***, ***binge drinking***, and ***cigarettes***. The dropped questions had shown a high degree of redundancy with respondents' reports of their own attitudes in the aggregate, and thus were deleted to make room for other items.

- In 2020, with regard to ***marijuana***, 27% to 33% of the young adults (ages 19-30) thought their close friends would disapprove of their trying it, while 32% to 40% thought their close friends would disapprove of occasional use, and 55% to 59% thought close friends would disapprove of regular use (Table 7-1). Clearly the norms differ as a function of level of marijuana use, with less than two-fifths believing occasional use and less than three-fifths believing regular use would meet with disapproval from their close friends.

- For each of the ***illicit drugs other than marijuana***, 2009 was the last year in which results on peer norms were available. At that time, the great majority of young adults, nearly 9-in-10, said that their close friends would disapprove of their even *trying* such drugs once or twice; 89% indicated this for ***cocaine***, 87% for ***LSD***, and 87% for ***amphetamines***. (We stopped asking these questions beginning in 2010 to make space for new items on the survey and because the data that they provided on peer norms so closely tracked what their own attitudes were in the aggregate; in previous editions of this Volume,[3] we provided a quick summary of trends for these three measures – cocaine, LSD, and amphetamines – up through 2009.)

- In 2020, with regard to friends' disapproval of ***binge drinking on weekends***, about half (50% to 55%) of any of the young adult age groups thought that their close friends would disapprove of their having five or more drinks once or twice each weekend (Table 7-1). In previous editions of this Volume,[4] we provided a quick summary of perceived disapproval of daily drinking up through 2009.

[3] Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume II, college students and adults ages 19-60.* Ann Arbor: Institute for Social Research, The University of Michigan.

[4] Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2020). *Monitoring the Future national survey results on drug use, 1975-2019: Volume II, college students and adults ages 19-60.* Ann Arbor: Institute for Social Research, The University of Michigan.

- Peer disapproval of ***cigarette*** smoking was very high among young adults in 2020, with 89-92% of them saying that their friends would disapprove of pack-a-day smoking.

Trends in Peer Norms (Ages 18 to 30)

Important changes in the social acceptability of drug-using behaviors among both 12th graders' and young adults' peers have occurred since MTF began (see Table 7-1). We present overviews of trends, summarizing across previous years.

- *In 2020, perceived peer disapproval of experimental, occasional, and regular use of **marijuana** among young adults were at historic lows since the early 1980s.* This follows a period of declines in perceived peer disapproval for about a decade, as summarized below.

  Among 12th graders, the proportion saying their close friends would disapprove of their *trying* marijuana rose from 41% in 1979 to 73% in 1992, a period of substantial decline in use. Friends' disapproval also grew substantially stronger in all of the young adult age bands in the years for which data are available. For example, among 19-22 year olds, the proportion thinking their close friends would disapprove if they even tried marijuana rose from 41% in 1981 to 65% in 1992 (Table 7-1). A similar peak in disapproval occurred for 23-26 year olds in 1992 and 1993, and among 27-30 year olds in 1994 and 1995, 66% for both age bands; these trends suggest some cohort effects as classes of higher disapproving 12th graders grew older. In all age groups, peer disapproval subsequently declined, though the declines were earliest and greatest among 12th graders, again consistent with cohort effects. The decline ended in 1997 for 12th graders and began to reverse, but continued through 2002 among 19-26 year olds. There was little systematic change for several years among 19-26 year olds until about 2008 when friends' disapproval began to decline again for all three levels of marijuana use. In 2013 all young adult age groups showed a further decline in disapproval of experimental marijuana use; indeed, the declines for the older two age bands were large and statistically significant. For example, the percent of 23-26 year olds and 27-30 year olds saying that their close friends would disapprove of their trying marijuana fell by about 9 percentage points in that one year, possibly reflecting both cohort effects and a secular trend. In 2013, about half of each age group (48% to 52%) said that their close friends would disapprove of their trying marijuana, down from between 57-62% as recently as 2008. In the last five years (2015-2020), perceived peer disapproval of trying marijuana declined considerably for young adults, by 13 to 17 percentage points, reaching 27% to 33% in 2020; these are at *historic lows* since the early 1980s.

  Close friends' perceived disapproval of occasional and regular marijuana use also rose until the early 1990s among respondents 18 years old, and then declined between 1992 and 1997. It declined through 1999 among 19-22 year olds and continued to decline among 23-30 year olds through 2003; there were then increases for all age groups through about 2006-2010. In essence, peer norms have moved in a way consistent with the existence of some lasting cohort differences in these norms, as well as in use. A more formal analysis of age,

period, and cohort effects of disapproval among 8th, 10th, and 12th graders came to the same conclusion.[5]

In the past decade or so, there have been continuing declines in friends' perceived disapproval of occasional and regular marijuana use among all age groups, suggesting more of a secular trend effect. In the last five years (2015-2020), friends' disapproval of occasional marijuana use declined considerably for young adults, by 13 to 18 percentage points, reaching 32-40% in 2020; disapproval of regular use dropped by 17 to 18 percentage points in the last five years, reaching 55-59% in 2020. Thus, *2020 levels of close friends' disapproval of occasional and regular marijuana use are at historic lows since the early 1980s.* Clearly peer norms among young adults have become more accepting of marijuana use in recent years, corresponding to young adults' increased marijuana use.

- Despite some changes in perceived peer disapproval of ***binge drinking*** over the years, this risky and potentially health-compromising form of drinking has the least restrictive perceived peer norms of regular use of all of the substances measured in MTF currently and in the past (only experimental and occasional use of marijuana have lower norms in recent years), yet about half of respondents still report peer disapproval. In 2020 the proportions saying that their friends would disapprove of such weekend binge drinking was between 50% and 55% for the three young adult age bands. Over the last five years (2015--2109/2020), this peer norm increased some for 12th graders (reaching historic highs in 2018 at 72%) and showed uneven change for young adults.

  Regarding longer-term trends, for most of the years under consideration, perceived peer norms against binge drinking on weekends (five or more drinks once or twice each weekend) among the three young adult age groups have tended to be weakest for the 19-22 year old age group, in which such behavior is most common, and strongest for the 27-30 year old group. Since 2002, disapproval of such drinking has also been low for the 23-26 year old group relative to the other two age bands. Since about 2012, the differences among the three age groups have diminished (ranging from 50% to 55% in 2020). Among 12th graders, friends' attitudes had become somewhat more restrictive between 1981 and 1992 (and respondents' own occasions of binge drinking declined during that interval), but attitudes were fairly level for some years and then rose from 56% in 2002 to 71% by 2019). There was a similar upward trend in peer disapproval among the various young adult age bands that followed a staggered pattern, again likely reflecting a cohort effect in these norms. However, between 1997 and 2000 the 19-22 year old age group became somewhat less disapproving of occasions of binge drinking on weekends; this was followed by a decline in perceived peer disapproval between 2001 and 2004 among 23-26 year olds, and a decline from 2004 to 2009 among 27-30 year olds. The recent increase in peer disapproval among 12th graders was not mirrored among the older age strata (which have remained fairly steady or showed uneven change in the past decade); thus peer disapproval of binge drinking became highest among the 12th graders, contrary to the situation in the late 1990s when 12th graders were the lowest.

[5] Keyes, K. M., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., Bachman, J. G., Li, G., & Hasin, D. (2011). The social norms of birth cohorts and adolescent marijuana use in the United States, 1976-2007. *Addiction, 106*(10), 1790-1800.

- Perceived peer norms against ***cigarette smoking*** one or more packs per day were at or near historic highs in 2020, at 89-92% for the young adult age groups. Over the past five-years (2015-2019/2020), 12th graders showed some modest, uneven increase in disapproval, and young-adult disapproval remained fairly steady.

  Over the years, these norms strengthened in staggered fashion by age-group, suggesting cohort effects. Between 1998 and 2008, the proportion saying that their close friends would disapprove of their smoking a pack or more of cigarettes per day rose substantially from 69% to 83% among 18 year olds and from 69% to 86% among 19-22 year olds. In other words, the proportions *not* disapproving were cut in half. The two older strata did not show a comparable change until peer disapproval among 23-26 year olds rose from 77% in 2005 to 88% in 2009, at which time their disapproval leveled. The change did not manifest itself among the 27-30 year olds until 2010; their rates of peer disapproval of smoking, which for some years had the highest rates of disapproval for smoking among the four age groups, stayed fairly level after 2000, until there was a 4.4-percentage-point jump in 2010, followed by a leveling. This pattern again suggests some cohort effects in peer norms working their way up the age spectrum.

  In the early years of MTF, peer disapproval of smoking a pack or more of cigarettes per day rose among 12th graders from 64% (1975) to 73% (1979). There was little further net change for 13 years through 1992, when friends' disapproval stood at 76%. During the relapse phase in the drug epidemic between 1992/1993 and 1997/1998, all age groups showed a decrease in perceived peer disapproval of smoking, consistent with a secular trend.

- It is noteworthy that perceived peer norms for many drugs have shown cohort effects in their patterns of change across age bands. In addition to cohort effects, the recent declines in peer disapproval of marijuana use in all four age groups suggests a period effect (a secular trend).

EXPOSURE TO DRUG USE THROUGH FRIENDS AND OTHERS (AGES 18–60)

Exposure to drug use is important because it provides both the modeling of the behavior by peers (possibly including direct encouragement to use) and immediate access. Exposure is measured by two sets of questions, each appearing on a (different) single questionnaire form. The first set asks the respondent to estimate what proportion of his or her friends use each drug (i.e., friends' use), while the second set asks, "During the LAST TWELVE MONTHS how often were you around people who were using each of the following to get high?" (i.e., direct exposure). The same questions are asked of 12th graders (modal age 18), and their results are included here for comparison purposes through 2019 in Tables 7-2 and 7-3 and Figures 7-1 through 7-24. (Questions about *direct exposure* to drug use were not included in the questionnaires for 35-60 year olds due to the space limitations imposed by the use of a single questionnaire form at each of these ages.) With regard to our measures of *friends' use*, we continue to present four-year age bands for the young adult friends' use measures in order to increase the reliability of the estimates. Questions about friends' use were included at ages 35, 40, 45, 50, 55, and 60. They are shown as one-year age bands, with *both* half-samples from each of those cohorts being surveyed at those modal ages. Starting with age 35, each year has a larger number of cases than single years at the earlier ages

because *all* respondents in a cohort at later ages complete the relevant questionnaire items, compared with only one sixth of those at younger ages. At the end of each table in this chapter is a summary of the weighted number of cases upon which each annual estimate is based. (The actual numbers of cases are somewhat higher.)

Friends' Use (Ages 18 to 60) and Direct Exposure to Drug Use (Ages 18 to 30)

- Relatively high proportions of adults in all of these age bands report at least *some* friends who use ***some illicit drug*** (including marijuana); that proportion varies considerably with age, with older adult respondents reporting that fewer of their friends use (Table 7-2). In 2020, illicit drug use by at least some friends was reported by 79% of 19-22 year olds, increasing to 85% for 27-30 year olds, then decreasing to 45% by age 60. The 2020 levels are at all-time highs among 27 to 60 year olds (largely due to continued increase in friends' use of marijuana as discussed below).[6]

  In 2020, the proportions who said that *most or all* of their friends use one or more of the illicit drugs were highest at ages 19-22 (24%) and 23-26 (25%) and declined with age thereafter from 18% at ages 27-30 to 3% at ages 50-60 (Table 7-2). This general ordinal decline with age after the mid-20s is notable, consistent with the large differences in their own self-reported current use.

  With regard to being around others in the past 12 months who used any illicit drug (direct exposure) in 2020, it was 74% for 19-22 year olds, 75% for 23-26 year olds, and 64% for 27-30 year olds (Table 7-3). The percent indicating that they *often* had direct exposure followed a similar age-group pattern in 2020: 34%, 28%, and 29%, respectively. Note that rates of any direct exposure tend to be lower than rates for any friends' use (as summarized above), a pattern that holds for most illicit and licit substances.

- With regard to ***illicit drugs other than marijuana***, taken as a whole, considerably fewer respondents reported that *any* of their friends use compared to what is true for marijuana use (see below): 49-56% for 19-30 year olds, and 21-29% for 35-60 year olds in 2020 (Table 7-2).[6] The proportions who said that *most or all* of their friends use illicit drugs other than marijuana in 2020 were 3.4-4.4% for 19-30 year olds and 0.2-1.2% for 35-60 year olds.

  Regarding direct exposure to others using illicit drugs other than marijuana in the past year, the percent indicating that they were around *any* people using was 43% among 19-22 and 23-26 year olds, and 37% among 27-30 year olds (Table 7-3). The percent indicating that they *often* were directly exposed was quite low at 7%, 6%, and 3% in the three young adult age groups, respectively.

- With respect to individual drugs, exposure among all of the age groups was greatest for ***marijuana***. The percentages in 2020 saying they have *any* friends who use was 78% for

[6] Due to a printing error in the young adult questionnaire in 2015, data cannot be reported for friends' use in the young adult age bands in that one year for this index as well as for some individual drugs that were directly affected. We believe that the 2014 data present a reasonable approximation of what the values likely would be in 2015. This applies to some but not all of the measures of the individual drugs. This situation was remedied in the 2016 surveys.

19-22 year olds, 82% for 23-26 year olds, and 83% for 27-30 year olds; it declined by age for the older adults from 65% at age 35 to 41% at age 60 (Table 7-2). In regard to *most or all* friends using in 2020, percentages were 24% for 19-22 year olds, 23% for 23-26 year olds, and declined with age to 2.2% at age 60. For middle-age adults, the 2020 levels were at or near new historic highs as discussed further below.

The percentages of young adults reporting any direct exposure to people using marijuana in the past year in 2020 were 73% for 19-22 year olds, 75% for 23-26 year olds, and 62% for 27-30 year olds; rates for *often* having direct exposure were 32%, 26%, and 28%, respectively (Table 7-3).

- The next-highest exposures for adults in terms of *any* friends' use in 2020 were for ***amphetamines*** (30% among 19-22 year olds, 31% among 23-26 year olds, and 33% among 27-30 year olds), followed by ***hallucinogens other than LSD*** (27-32% among young adults), ***LSD*** (25-30% among young adults), ***MDMA (ecstasy, Molly)*** (22-30% among young adults), ***cocaine*** (21-31% among young adults, and 4.4-15% among 35-60 year olds), ***tranquilizers*** (20-23% among young adults, and 16-20% among 35-60 year olds), and ***sedatives (barbiturates)*** (10-15% among young adults) (Table 7-2). For cocaine and tranquilizers, friends' use is asked of those aged 35-60 (reported above), but for several of the other illicit drugs it is not asked due to space limitations in the single questionnaire form used at each of those ages (see Table 7-2).

- The proportions who report having *any* friends who take ***heroin*** in 2020 were 1.3%, 2.5%, and 3.3% for the age groups of 19-22, 23-26, and 27-30, respectively (Table 7-2). These age differences are much smaller than in earlier years, due to greater declines with time among the younger age groups. (This question is not asked of those age 35 and over.)

- Regarding ***narcotic drugs other than heroin***, the percentages reporting any friends who use in 2020 was 9% of the 19-22 year olds, 15% of 23-26 year olds, and 19% of 27-30 year olds (this question is not asked of those age 35 and older) (Table 7-2).

- In general, it appears that some respondents who report that their friends use ***illicit drugs*** are themselves not directly exposed to that use by their friends, judging by the differences in proportions saying they have some friends who use (Table 7-2) and the proportions who say they have been around people who were using during the prior year (Table 7-3 and Figure 7-1). That is, as has been true all along, more respondents report use by friends than report being around others who were using. When considering trends in the next section, we give more attention to findings from the direct exposure measure concerning being around others who use.

- With respect to ***alcohol*** use, the great majority of young adults report having *any* friends who ***get drunk at least once a week***, although this peaks in their mid-to late-20s and then drops off gradually with age: in 2020, 70% at ages 19-22, 75% at ages 23-26, 79% at ages 27-30, 66% at age 35, 63% at age 40, 57% at age 45, 53% at age 50, 43% at age 55, and 36% at age 60. Given the potential serious consequences of this behavior, these rates are troublingly high across a wide age range. The proportions who say *most or all* of their

friends get drunk once a week differ more substantially by age, with a peak in the respondents' early 20s. In 2020, 21% of 19-22 year olds, 17% of 23-26 year olds, 16% of 27-30 year olds, and 11% of 35 year olds to 2% of 60 year olds responded that most or all of their friends get drunk once a week. Note in particular how high these rates are among the high school (in 2019 it was 11%) and 19-22 year olds, most of whom are underage. In terms of having any direct exposure during the prior year to people who were drinking alcohol, having some such exposure was almost universal in the three age groups of young adults: 86%, 93%, and 86%, respectively (Table 7-3 and Figure 7-23).

- From ages 19 through 30, 59% to 69% reported in 2020 having *any* friends who ***smoke cigarettes***, compared to 44% of the 12th graders in 2019; there is a falloff through middle adulthood, reaching 45% at age 60. Similarly, 3% to 4% of the 19-30 year olds state that *most or all* of their friends smoke. Above those ages, the proportions decline to 1-3% for those 35 years of age and older.

Trends in Friends' Use (Ages 18 to 60) and Direct Exposure to Drug Use (Ages 18 to 30)

Tables 7-2 and 7-3 provide trend data on the proportions of respondents' friends using drugs and the proportion of respondents who say they have been directly exposed to drug use by others. Both of these measures will be discussed in this section. As noted previously, trends are available for 19-22 year olds since 1980, for 23-26 year olds since 1984, and for 27-30 year olds since 1988. Data for those 35, 40, 45, 50, 55, and 60 years old are available on friends' use since 1994, 1998, 2003, 2008, 2013, and 2018, respectively. (Questions about being around drug users – direct exposure – were not included in the questionnaires administered to respondents age 35 and older, so those age bands are not included in Table 7-3 or Figures 7-1 through 7-24. However, these respondents were asked about the proportions of their friends using as shown in Table 7-2.) Twelfth-grade data (i.e., age 18) through 2019 have also been included in these tables for comparison purposes.

Figures 7-1 through 7-24 provide graphic presentation of trends in direct exposure to use for 12th graders and young adults.

- An important starting point in understanding trends in direct exposure is the consideration of age differences. An examination of Table 7-3 and Figures 7-1 through 7-6 shows that direct exposure to illicit drug use (in the 12 months preceding the survey) generally declines across the age bands for ***any illicit drug***, ***marijuana***, and ***any illicit drug other than marijuana***, as well as many of the specific other illicit drugs (Figures 7-7 through 7-24). Up until the past few years, this age-band ordering was consistent across different historical periods; however, as summarized below, the past few years have shown some compression of age differences and reordering of age groups, with the 19-22 year olds having the highest direct exposure to many drugs in 2019 and 2020. Thus, up until the past few years (with important exceptions noted below), the consistent ordering of declining exposure across the age groups reflect age effects (changes with age observed across multiple cohorts) in both exposure to use and in personal use of most drugs.

- Over the past decade (2010-2020), trends in *any friends' use* of ***any illicit drug*** were fairly level for 12th graders (77% in 2019) and 19-22 year olds (79% in 2020), and increased dramatically for older age groups: it rose 7 to 24 percentage points among 23-50 year olds, reaching 83-85% among 23-30 year olds, 61-68% among 35 and 40 year olds, and 51-54% among 45 and 50 year olds (Table 7-2). *These 2020 percentages are at or near historic highs for those 27-30 through 60 years old.*

  Similarly, over the past decade (2010-2020), trends in *any* direct exposure to ***any illicit drug*** use were fairly level for 12th graders (75% in 2019) and increased dramatically for young adults, reaching historic highs in 2019 or 2020: it increased 9 percentage points for 19-22 year olds (to 74% in 2020), 19 percentage points for 23-26 year olds (to 75% in 2020), and 15 percentage points for 27-30 year olds (to 64% in 2020, which included a significant 12 percentage point decrease over 2019) (Table 7-3). As discussed below, these increases are largely due to increases in direct exposure to marijuana use.

  Regarding longer-term trends, until 1992, young adults' trends in direct exposure to use tended to parallel those observed for 12th graders. From 1980 to 1992, that meant a decreasing number of respondents were directly exposed to ***any illicit drug*** use (Table 7-3 and Figure 7-1) or reported any such use in their own friendship circle (Table 7-2). After 1992, however, an important *divergence* in trends emerged: 12th graders showed a substantial increase in both friends' use and direct exposure to use (as well as self-reported use); 19-22 year olds showed a similar rise, but lagged by a few years; 23-26 year olds subsequently showed some rise; while the 27-30 year old age band did not show a rise until 2002. As discussed in earlier chapters, this pattern no doubt reflects the emergence of lasting cohort differences that emerged in secondary school and, driven by generational replacement, continued up the age spectrum as the secondary school students grew older. The age differentials expanded in the 1990s during the relapse phase in the drug epidemic; first observed among the 12th graders, the increases in use then occurred on a staggered basis. The age differentials diminished considerably during the 2000s, and especially since 2009, as direct exposure to use generally leveled among the younger age groups but rose among the older ones (see Figure 7-1).

- ***Marijuana*** showed a very similar pattern of change compared to any illicit drug—not surprising, given that it tends to drive the index as the most widely used drug. Over the past decade (2010-2020), the percentage who said that *most or all* of their friends used marijuana was level for 12th graders through 2019 (23-27%), increased for 19-22 year olds from 15% in 2010 to 29% in 2019 before dropping nonsignificantly to 24% in 2020, and increased dramatically for older adults: it nearly doubled or tripled for each age group among 23-50 year olds, increasing to 16-23% for 23-30 year olds, to 8-9% for 35 and 40 year olds, and to 2-3% for 45-60 year olds (Table 7-2). Except for 19-22 year olds, these percentages for adults reached historic highs in 2019 or 2020. The historic high for 19-22 year olds indicating that most or all of their friends used marijuana was 34% in 1980, the first year for this age-group; it then dropped to 8% in 1991. Clearly, the number of friendship groupings in which marijuana use was widespread dropped dramatically in the 1980s. This measure of friends' use for 19-22 year olds more than doubled to 19% by 1999 during the relapse phase in the larger epidemic, where it remained for a couple of years before falling to a low of 12% in 2008. It then more than doubled to 29% by 2019 before dropping to 24% in 2020. Although the percentage

reporting that most or all of their friends used marijuana were lower among the other adults, the trends over the years were similar to those for 19-22 year olds.

Similar trends occurred for being around those using (direct exposure) in the past year among young adults, as shown in Figures 7-5 and 7-6. In the past decade (2010-2020), the percentages of those who report *often* being around friends who used marijuana increased for each age group of young adults, with a fairly level trend for 12th graders. They increased between 2010 and 2020 from 25% to 32% for 19-22 year olds, from 17% to 26% for 23-26 year olds, and from 11% to 28% for 27-30 year olds (including a significant increase of 7.4 percentage points between 2018 and 2019) (Table 7-3); the 2019 percentages were at new historic highs for all young adults combined.

- The proportion of respondents reporting having *any* friends who use ***any illicit drugs other than marijuana*** (Figure 7-3) across the past decade (2010-2020) decreased unevenly for 12th graders (39% in 2019), decreased unevenly 1 to 3 percentage points among 19-26 year olds (to 49-51% in 2020), increased 16 percentage points among 27-30 year olds (to 56% in 2020), increased 5 to 10 percentage points among 35 and 40 year olds (to 29% in 2020), and increased 2 to 3 percentage points for 45 and 50 year olds (to 24% in 2020) (Table 7-2). Between 2019 and 2020, this decreased nonsignificantly for 19-26 year olds and increased for 27-60 year olds, significantly so for 40, 45, 50, and 60 year olds. The similar recent trends in *direct exposure* to use are shown in Table 7-3 and Figure 7-3, with *any exposure* increasing unevenly for the young adults over the past decade (2010-2020) by 4 to 8 percentage points, reaching 37-43% in 2020 (Table 7-3). Also, the proportions indicating *often* being directly exposed to friends' use of any illicit drugs other than marijuana (Figure 7-4) has increased unevenly over the past decade reaching 3-7% in 2020, with it decreasing significantly for 27-30 year olds in 2020 (Table 7-3).

  In regard to earlier trends, the proportion reporting having *any* friends who use any illicit drug other than marijuana began to decline after 1982 in the two younger age groups spanning 18-22 (for whom we had data at that time; see Table 7-2 regarding use by friends, and also Figure 7-3 regarding direct exposure to use). By 1991/1992 there had been a considerable drop in all four age groups (spanning 18-30). This drop appears to be due particularly to decreases in friends' use of ***cocaine*** and ***amphetamines***, although there were decreases for ***sedatives*** (***barbiturates***) and ***tranquilizers*** as well. The levels then began to rise among the 18-22 year olds in the early 1990s, while at the same time declining further for the 23-30 year olds, reflecting lasting cohort effects, opening up a large age-related difference in friends' use in the 1990s and into the early 2000s. The 23-26 year olds showed a later increase in friends' use and the 27-30 year olds showed a still later increase. After 2001 there was some decline in reported friends' use in the two youngest age strata while reported friends' use continued to climb in the older two strata. The net effect was to narrow the age differences among the young adult strata considerably.

- In the past decade (2010-2020), the proportion of respondents with *any friends* who used any ***cocaine*** decreased for 12th graders (to 16% in 2019), and increased unevenly for the three young adult age groups, reaching 21-31% in 2020 (with much of the decade change occurring in the last few years for 23-30 year olds) (Table 7-2). For 35 and 40 year olds (who are asked

about cocaine powder specifically), the proportion of respondents with friends who used any increased 4-8 percentage points (to 13-15% in 2020), and remained fairly level for 45 and 50 year olds (5-7% in 2020) (Table 7-2). Similar recent uneven increases were found for direct exposure to cocaine use among young adults (Table 7-3, Figure 7-11).

Regarding earlier trends, between 1986 and about 1992, all four age groups (covering 12th grade through age 30) showed a considerable drop in the proportion of respondents with *any* friends who used ***cocaine*** (Table 7-2) and in direct exposure to *any* cocaine use (Figure 7-11). (Self-reported use declined sharply during the same period, as perceived risk for cocaine rose sharply.) After that decline, the rates of *any* friends' use peaked in 1998 among 12th graders (31%) and 19-22 year olds (27%), remained fairly steady through 2007, and declined since for 12th graders through 2019 (16%) while decreasing and then increasing unevenly for 19-22 year olds through 2020 (21%). For 23-26 year olds, friends' use increased through 2004 (27%), declined unsteadily through 2016 (22%), and increased unevenly through 2020 (31%). For 27-30 year olds, friends' use increased through 2009 (22%), remained fairly level through 2016 (22%) and then increased unevenly through 2020 (25%). These changes, staggered somewhat by age since the mid-1990s, reflect cohort effects.

- In starting with longer-term trends regarding ***narcotics other than heroin***, there were substantial increases between the early 1990s and about 2000 in the proportion of 12th graders and 19-22 year olds reporting that they have *any* friends who use (Table 7-2), and having any exposure to use by others (Table 7-3 and Figure 7-15); also, there were smaller increases among 23-30 year olds, resulting in some considerable age-related differences. After 2002, the proportions of 18 year olds and 19-22 year olds declined some for both measures, while the 23-30 year olds continued to increase in a classic cohort-effect pattern of change, thus narrowing the age differences by 2009. There was a wording change in 2010 (the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc.) that served to increase the rates considerably for both measures for all age groups (as indicated in Figure 7-15). In 2010, the percentages of those reporting *any* friends using narcotics other than heroin were 36%, 31%, 37%, and 28%, respectively across the four age groups; since 2010, all four of these age bands have shown declines, reaching 14% among 12th graders in 2019, and reaching 9.4%, 15%, and 19% in 2020 among the three young adult age groups, respectively (Table 7-2). Between 2019 and 2020, the 7.1 percentage point decrease among 19-22 year olds was significant. In 2010, the percentages of those reporting *any* direct exposure to people using narcotics other than heroin were 30%, 28%, 26%, and 23% across the four age groups respectively (Table 7-3); since 2010, percentages decreased substantially for all four age groups, reaching 12th graders reaching 14% in 2019, and the young adult age groups reaching 12%, 10%, and 11%, respectively in 2020 (Table 7-3 and Figure 7-15). The proportional declines since 2010 for both measures of exposure have been largest in the younger age bands.

- In starting with longer-term trends, the proportions saying that *any* of their friends use ***MDMA*** (***ecstasy, Molly***) increased from 1989 (when it was first asked) through 2001 or 2002, with some increases being sharp beginning in 1992 and 1993 in a staggered fashion (Table 7-2). Twelfth graders showed the first sharp increase beginning after 1992, 19-22 year olds after 1994, 23-26 year olds after 1996 and 27-30 year olds after 1997. These sharp increases ended

among 12th graders in 2001 (to 42%) and among 19-30 year olds a year later in 2002 (to 43%, 37%, and 21% for the three young adult age groups respectively). Since those peak levels, the proportions saying that they had any friends using ecstasy have generally declined through about 2011 and 2012 for young adults (reaching lows of 19% for 19-26 year olds and 11% for 27-30 year olds). Since about 2011-2012, friends' use continued to decline modestly for 12th graders through 2019 (16%), whereas it has shown some uneven increases for the young adults (reaching 22%, 27%, and 30%, respectively, in 2020). The staggered nature of past increases in friends' use suggests a cohort effect at work, but the nearly simultaneous decline in the early 2000s strongly suggests a secular trend, likely due to the heavy media coverage during that period of adverse consequences associated with ecstasy use.

- Recent trends for exposure to additional illicit drugs deserve attention. Over the past decade (2010-2020), the proportions reporting that *any* of their friends used ***LSD*** was fairly level for 12th graders through 2019 (21%) and increased extensively for young adults, rising 14 to 17 percentage points to 30%, 26%, and 25%, respectively, across the three young adult age groups in 2020. Over the past decade, *any* friends' use of ***other hallucinogens*** decreased 13 percentage points for 12th graders to 19% in 2019, was fairly even for 19-22 year olds before increasing somewhat to 32% in 2020, increased unevenly 5 percentage points for 23-26 year olds to 28% in 2020, and increased 12 percentage points for 27-30 year olds to 27% in 2020. (These friends' use questions are not asked of those aged 35-60.) These recent increases among young adults in perceived friends' use of LSD and other hallucinogens are consistent with recent increases in direct exposure (Table 7-3) and in use (see chapters 5 and 9).

- Over the past decade (2010-2020), exposure to ***amphetamine*** use showed increase among young adults but not 12th graders. *Any* friends' use declined for 12th graders 11 percentage points to 19% in 2019, increased 12 percentage points to 39% in 2015 for 19-22 year olds before declining unevenly to 30% in 2020, increased 7 percentage points to 31% in 2020 for 23-26 year olds, and increased 16 percentage points to 33% in 2020 for 27-30 year olds. Similar change patterns by age over the past decade were seen for any direct exposure to amphetamine use (Table 7-3).

- Exposure to ***tranquilizers*** has generally decreased in recent years among 12th graders and young adults. In the 2020 panel surveys, we changed the tranquilizer items to include examples, inserting "(Librium, Valium, Xanax, etc.)" into the perceived friends use questions (for ages 19-60). With this change, there were substantial and significant increases in reports of *any* friends' use in 2020 among most adult age bands, reaching 16-22% among 19-60 year olds (Table 7-2). It is likely that the addition of the examples helped respondents recognize the more general category of tranquilizers. Before this item wording change, from 2010 through 2019, there were uneven decreases for most age bands, reaching 9.9% for 12th graders, 7.5-7.8% for 19-26 year olds, and 11-15% for 27-50 year olds. We note for *any* friends use of ***sedatives (barbiturates)***, there was a similar pattern of decrease over the past decade among 12th graders and 19-26 year olds (with uneven change for 27-30 year olds) (Table 7-2).

- Starting with longer-term trends, for all four of the youngest age groups (spanning ages 18-30), the proportions saying that they were *often* directly exposed to others drinking ***alcohol*** declined modestly between 1987 and 1992 (Figure 7-24, Table 7-3). The next decade or so saw rather little change in the four youngest age bands. Direct exposure among 12th graders

declined considerably from 2001 (53%) through 2019 (35%). The recent trend for 19-22 year olds peaked in 2007 (61%) and declined unevenly through 2020 (to 44%); it peaked in 2012 (56%) for 23-26 year olds and declined unevenly through 2020 (to 53%); and it peaked in 2012 (50%) for 27-30 year olds and showed some uneven decline through 2020 (to 46%). This is again indicative of a cohort effect with staggered decreases radiating up the age spectrum as the cohorts age. The greater proportional declines among the two younger age groups has served to widen the age gap somewhat over the past decade.

- Over the past decade, there have been mixed changes across the age groups in proportions reporting that *any* of their friends ***get drunk***[7] at least once a week. Since 2009, 12th graders showed consistent declines from 76% in 2010 to 54% in 2019, 19-22 year olds showed more modest declines from 81% in 2010 to 70% in 2020, 23-26 year olds showed uneven declines from 84% in 2010 to 75% in 2020, and those aged 27 to 30 showed a fairly level trend (79% in 2020); however, 35-50 year olds showed uneven increases from 40-60% in 2010 to 53-64% in 2020 (Table 7-2). In 2020, it remained the case that the majority of those aged 18 through 50 have *any* friends who get drunk at least once a week, with those aged 55 and 60 at 43%, and 36% respectively. The proportions saying that *most or all* of their friends get drunk often showed similar recent trends by age-group, but were considerably smaller and more differentiated by age (Table 7-2).

  Considering longer-term trends, the age groups above age 30 have consistently been much less likely to report that *any* of their friends ***get drunk*** at least once a week, compared with those ages 18 to 30 (Table 7-2). These proportions increased starting at different times: after 1998 among those age 35, after 2004 among those age 40, and after 2005 among those age 45, suggesting somewhat enduring cohort differences. The net effect has been to reduce the differences separating those in their 20s from those older in terms of the proportion having *any* friends who get drunk at least once a week. In the past decade, this trend toward smaller age differences among adults continued.

- The proportion who said *most or all of their friends smoked* ***cigarettes*** were at or near all-time lows for all ages 18-60 in 2019 or 2020. Regarding long-term trends, this measure of friends' use declined appreciably among 12th graders between 1975 and 1981 (Table 7-2), the same period in which self-reported use declined. After that, neither measure showed much change until about 1992. Thereafter, substantial increases in both measures occurred. By 1997, one-third (34%) of 12th graders reported that most or all of their friends smoked cigarettes (up from 21% in 1992); since then, that percentage declined (along with self-reported use) to 14% in 2008, where it leveled for a few years, and then declined again reaching 4.7% in 2019, an all-time low. Among 19-22 year olds, a decline in friends' use occurred between 1980 (or possibly earlier) and 1985, followed by a leveling through 1994 (22%); it then increased to 29% in 2000, before declining steadily and considerably to a new low of 3.7% in 2020. Among 23-26 year olds, a downturn was evident between 1984 (the first year for which data are available) and 1988, after which reported friends' use leveled through 2005 (20%) and then declined through 2020, reaching a new low of 3.6%. After 2002, some slight increases occurred through 2005 (13%) among the 27-30 year olds, followed by an unsteady decline through 2020,

[7] Due to the previously mentioned printing error, data are not available for the three young adult age bands in 2015, though they are included for the other age bands in Table 7-2. This situation was remedied for 2016 data.

reaching a new low of 2.6%. These staggered changes, until about 1998, illustrate that cohort effects were moving up the age spectrum. Among those aged 35-60, the proportions of those responding that *most or all* of their friends smoked cigarettes have consistently declined over the years since they entered the study (except those 35 years old who showed some increase in the middle- to late-1990s), reaching 1-3% in 2020, at or near new lows. Since 1998 (or the earliest year available for the age bands above age 30), the proportion saying that *any* of their friends smoked cigarettes showed consistent decline for all age groups through 2020, where they were at or near historic lows (Table 7-2).

PERCEIVED AVAILABILITY OF DRUGS AMONG ADULTS (AGES 18–60)

Adults participating in the follow-up surveys receive questions identical to those asked of 12th graders regarding how difficult they think it would be to get each of the various drugs if they wanted them. The questions are contained in only one of the six questionnaire forms used through modal age 30. Data for the young adult follow-up samples, which are grouped into the same four-year age bands used above (19-22, 23-26, 27-30), are presented in Table 7-4, along with data for 12th graders and those 35, 40, 45, 50, 55, and 60 years old. Sample sizes are presented at the bottom of the table. The availability question is not asked for all drugs in the adult samples, as may be seen in Table 7-4.

Perceived Availability

Substantial proportions of the American adult population have access to various illicit drugs. (We do not ask about access to alcohol and cigarettes because we assume these are readily available to all adults.) Table 7-4 presents trends in perceived availability for the various substances.

- ***Marijuana*** was by far the most readily available of all the illicit drugs surveyed in 2020 (and in all previous years) with 84-92% of the young adult age groups (19-30) saying it would be "fairly easy" or "very easy" to get if they wanted some. Perceived access decreased somewhat with age after age 30, but even at age 60, 74% of the respondents said they could get marijuana fairly or very easily (Table 7-4). That is, as of 2020, at least 80% of adults aged 19-55 (and 73% of 60 year olds) reported marijuana being readily available if they wanted it. This high level, especially for older adults, likely reflects the legal status of marijuana in many states, and will likely continue to increase in the years ahead as the legal status of marijuana continues to change across the U.S.

- Though less available than marijuana, ***amphetamines*** were still perceived as fairly available, with 50-57% of young adults and 26-35% of those aged 35-60 reporting that amphetamines would be fairly or very easy to get if they wanted some (Table 7-4).

- ***Cocaine*** was reported as readily available in 2020 by a significant proportion of young adults, with 33-45% saying it would be easy to get (Table 7-4). ***Powdered cocaine*** availability (asked of 35-60 year olds) ranged from 26% to 36% among 35-60 year olds in 2020.

- ***Heroin*** was reported as fairly or very easy to get if they wanted some in 2020 by 12%, 24%, and 20% of the three young adult age groups, respectively (Table 7-4). (The question is not asked of respondents above age 30.)

- Perceived availability of ***narcotics other than heroin*** rose with age among young adults. In 2020, the percentage of those who said that such drugs would be fairly or very easy to get was 30%, 36%, and 43%, respectively, across the three age groups (Table 7-4). (The question is not asked of respondents above age 30.)

- Perceived availability of ***sedatives*** (***barbiturates***) also rose with age among young adults. In 2020, it was 26%, 29%, and 34%, respectively, among the three age groups (Table 7-4). Availability of ***tranquilizers*** was higher in 2020 (likely due to item wording change discussed below when considering trends), and ranged from 38% to 44% among young adults. (These questions are not asked of respondents above age 30.)

- ***MDMA*** (***ecstasy, Molly***) was seen as readily available in 2020 to, 26%, 33%, and 29% of the three young adult age groups (Table 7-4). (The question is not asked of respondents above age 30.)

- ***Hallucinogens other than LSD*** (such as psilocybin) were reported as fairly or very easy to get in 2020 by 38%, 38%, and 36% for the three young adult age groups, respectively (Table 7-4). (The question is not asked of respondents above age 30.)

- Perceived availability of ***LSD*** was 35% among 19-22 year olds, 33% among 23-26 year olds, and 28% among 27-30 year olds in 2020 (Table 7-4). (The question is not asked of respondents above age 30.)

- ***Crystal methamphetamine*** (***ice***) was perceived to be fairly or very easy to get by only 8.0%, 18%, and 14% of the young adult age groups, respectively (Table 7-4). (The question is not asked of respondents above age 30.)

Trends in Perceived Availability

- ***Marijuana*** has been almost universally perceived to be available by older adolescents and young and middle adults throughout the history of the survey (Table 7-4). In the past five years (2015-2020), it decreased 5 percentage points among 19-22 year olds (84%), increased 4 percentage points among 23-26 year olds (92%), decreased 1 percentage point for 27-30 year olds (90%), was level for 35 year olds (86%), and increased 5-10 percentage points for 40-55 year olds (to 80-87%). For adults ages 23-60, perceived availability was at or near historic highs in 2019 or 2020. However, among 19-22 year olds, it declined in recent years, and the same was true for 12th graders (reaching 78% in 2019, a historic low).

  From the peak year in 1979, perceived availability of marijuana decreased slightly through 1991 among 12th graders and decreased slightly more from 1980 through 1991 among 19-22 year olds. After the late 1990s, the trends in availability across the 18 through 30 age bands had generally been quite parallel, suggesting secular trends in prevailing conditions that affected availability. Perceived availability has generally increased in the past two

decades through 2020 for those aged 27 to 55 (as data became available for older adults), remained fairly steady for those aged 23-26, and dropped for 12th graders and those aged 19-22, resulting in less variation in the age groups.

- The perceived availability of ***cocaine*** (Table 7-4) showed mixed trends over the last five years (2015-2020) for the various age groups: it decreased 5 percentage points for 12th graders (to 24% in 2019), was fairly level for 19-22 year olds (33% in 2020), increased 9 percentage points for 23-26 year olds (45% in 2020), and decreased 2 percentage points for 27-30 year olds (37% in 2020). Among age 35 and older respondents (who are asked about perceived availability of ***cocaine powder*** specifically), it increased 2-4 percentage points for 35, 40, and 45 year olds, and was fairly level for 50 and 55 year olds; in 2020, it ranged from 26% to 36% among 35-60 year olds (Table 7-4).

  Historic highs in perceived availability of ***cocaine*** occurred in the 1980s among all three young adult age strata (ages 19-30), reaching highest proportions in 1988 and 1989, at which time the older young adult age strata had higher availability than the younger ages. (From a policy perspective, it is worth noting that in 1987 the perceived availability of cocaine *increased* while the prevalence of use actually *dropped* sharply.) In the early 1990s, all four groups reported decreased availability by 4-7 percentage points, quite parallel to the drop in numbers of those who had friends who were users and to the decline in personal use. Until about 2001, there was some falloff in perceived cocaine availability in all age strata through age 30—particularly among those ages 23 through 30—and an increasing convergence among the age groups (ranging from 45% to 50% in 2001); it then generally leveled through 2007. From about 2007 through 2012 and 2013, all four age strata showed considerable declines in reported cocaine availability, followed by a decrease through 2019 for 12th graders and uneven changes for 19-30 year olds as discussed above.

- In 2019, questions about ***crack*** availability were deleted in the young adult surveys (in 2018 for 35-55 year olds) given its relatively low prevalence and availability and to make room for questions about other drugs. In considering earlier data, availability peaked in 1988-1989 for all age groups (it was first assessed in 1987) and declined through 1992, with little further change until 1995. Between 1995 and 2018, crack availability declined substantially in all of the lower four age strata (ages 18-30). Data on 35, 40, 45, and 50 year olds are available for shorter intervals (and only through 2017), but also show appreciable declines from initial measurements.

- Perceived availability of ***LSD*** showed uneven increases over the past five years (2015-2020) among 18-30 year olds: it increased 2 percentage points for 12th graders (to 28% in 2019), 9 percentage points for 19-22 year olds (to 35%), 12 percentage points for 23-26 year olds (to 33%), and 12 percentage points for 27-30 year olds (to 28%) (Table 7-4).

  The 2019/2020 estimates of perceived availability among 18-22 year olds (28-35%) and 23-30 year olds (28-33%) contrast with the mid-1990s, when availability was over 50% for 18-22 year olds and 36-44% for 23-30 year olds. Across the decades measured, the trends in LSD availability among young adults have had some parallels to those among 12th graders. For 12th graders, there was a drop of about 10 percentage points in the mid-1970s,

and a later drop from 1980 to 1986. The latter drop, at least, was paralleled in the data from 19-22 year olds. After 1986, LSD availability increased considerably in all age bands, reaching its peak levels by 1995 during the relapse phase of the illicit drug epidemic. At that time a considerable age-related difference developed, with availability lower in the older age groups. Since 1995, availability has fallen substantially in all age bands but particularly in the youngest two age bands, narrowing the differences among the age groups. Indeed, the drop-off in availability of LSD to 12th graders and 19-22 year olds was quite sharp in 2002, probably contributing to the steep decline in use that year because changes in attitudes and beliefs about LSD cannot explain it. Over the past decade through 2020, availability has increased unevenly among 12th graders and young adults. Perceived availability was asked of 35-50 year olds through 2018 (dropped in 2019); for this age group over the previous decade (2008-2018), it showed slight increases for 35 and 40 year olds (to 21-22% in 2018) and was fairly level for 45 and 50 year olds (22-23% in 2018).

- Over the past five years (2015-2020), perceived availability of ***hallucinogens other than LSD*** declined 4 percentage points for 12th graders (to 30% in 2019) and *increased* 3-9 percentage points for 19-30 year old (to 36-38% in 2020) (Table 7-4). (This question is not asked of respondents over age 30.)

  In the early 1980s, there was a fair decline among all age groups in the availability of hallucinogens other than LSD. There was little additional change through 1992. From 1992 to 1995, the three youngest age groups all showed an increase in availability, with 12th graders showing the largest increase. From 1996 to 2000, availability was fairly steady. All age groups showed substantial increases in 2001, undoubtedly due to the changed question wording which added *shrooms*, among other substances, to the examples of hallucinogens. (Shrooms refer primarily to psilocybin mushrooms.) Availability peaked in 2001-2004 for the four age groups and since has generally declined for 12th graders and 19-22 year olds and remained fairly level for 23-30 year olds (Table 7-4).

- Perceived availability of ***MDMA (ecstasy, Molly)*** showed uneven declines over the past five years (2015-2020) among the age groups: it decreased 13 percentage points for 12th graders (to 24% in 2019), 13 percentage points for 19-22 year olds (to 26% in 2020), 3 percentage points for 23-26 year olds (to 33% in 2020), and 4 percentage points for 27-30 year olds (to 29% in 2020). The 2019-2020 decrease among 27-30 year olds was a significant 10 percentage points (Table 7-4).

  Questions about the availability of MDMA (ecstasy, Molly) were first introduced in MTF surveys in 1989 and 1990 (and are not asked of those over age 30). Availability rose very substantially in all of the young adult age groups during the 1990s and early 2000s. Among 12th graders, reported availability nearly tripled from 22% in 1989 to 62% in 2001, the peak year of use for 12th graders. All four age groupings showed sharp increases in 2000 and 2001, with the older age groups continuing to increase through 2002 (to 41-60%), their peak year for use. The availability of MDMA showed considerable declines from about 2001 through about 2010 (reaching 36%, 30%, 35%, and 31%, respectively for the four age groups); since then, it showed uneven change for all age groups, showing net declines

for 12th graders (to 24% in 2019), for 19-22 year olds (to 26% in 2020), and for 23-30 year olds (to 29-33% in 2020).

- Over the past five years (2015-2020), perceived availability of ***heroin*** declined unevenly among 12th graders and young adults. It declined 4 percentage points for 12th graders (to 16% in 2019), declined a net 9 percentage points for 19-22 year olds (with a significant 8.3 percentage point drop between 2019 and 2020), was fairly level for 23-26 year olds (24% in 2020), and declined a net 7 percentage points for 27-30 year olds (with a significant 11.3 percentage point drop between 2019 and 2020) (Table 7-4). (This question is not asked of those over age 30).

  Across the years, perceived availability of heroin has been among the lowest of all drugs for young adults (with it sometimes being lower for crack or crystal methamphetamine). All four age groups have shown some gradual, modest decline in heroin availability since about 1997 or 1998, during which interval there has been rather little variability in heroin availability across the 18-to-30 age range. Heroin availability varied within a fairly narrow range from 1980 to 1985, then increased in all age groups through 1990. For the younger ages (18-22) heroin availability rose further through 1995 while in the older two age groups it increased some later in the 1990s. It is clear that heroin was much more available to all of these age groups in the 1990s than it was in the 1980s. This increase in the availability, and in the purity, of heroin most likely led to the emergence of non-injection forms of heroin use observed during this period. In the past decade from 2010 through 2020, heroin availability declined for 12th graders from 24% to 16% (in 2019), declined for 19-22 year olds from 22% to 12%, remained fairly level for 23-26 year olds (23% to 24%), and declined for 27-30 year olds (25% to 20%).

- The availability of ***narcotics other than heroin*** declined in the past five years (2015-2020) for each age group: it decreased 11 percentage points for 12th graders (to 31% in 2019), 18 percentage points for 19-22 year olds (to 30% in 2020), 16 percentage points for 23-26 year olds (to 36% in 2020) and 18 percentage points for 27-30 year olds (to 43% in 2020) (Table 7-4). It declined for all young adult age groups between 2019 and 2020, significantly so for 19-22 year olds[8] and 27-30 year olds. (This question is not asked of those over age 30).

  Over the years, availability rose slowly among all four age groups from 1980 through the early to mid-2000s, with the exception of a period of considerable stability from 1989 through 1994. After 1994, the modest increase in availability was accompanied by steadily rising use. Reported availability jumped in 2010, when new drugs, including Vicodin and OxyContin, were added to the list of examples in the question (this jump suggests that our earlier measure was underestimating availability to some extent). In 2010, availability was 54%, 55%, 56%, and 62%, respectively among the four age groups, revealing little age differentiation. Since 2010, availability declined steadily for 12th graders (to 31% in 2019) and declined unevenly for 19-22 year olds (to 30% in 2020); it rose through 2013 for the two older age groups (62% and 64%, respectively) before declining unevenly through 2020 (36% and 43%, respectively); these different trends served to increase the age differences

[8] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was not significant (see Table 7-4 footnote 14)

among the four groups. *Thus, availability of these drugs has been going down since 2011-2013, especially in the younger age strata, likely in response to state and federal efforts to reduce their misuse by reducing availability.*

- Over the past five years (2015-2020), perceived availability of ***amphetamines*** decreased 3 percentage points for 12th graders (to 39% in 2019), decreased 7 percentage points for 19-22 year olds (50% in 2020), and remained fairly level for 23-30 year olds (55-57% in 2020). Among middle and older adults across the past five years, availability was fairly level among 35-55 year olds (32-35% in 2020) (Table 7-4).

  In general over the years, perceived availability of amphetamines has declined to some extent for all age groups since about the time they were included in the study, and the age groups above age 30 have reported somewhat lower availability than the younger strata. In 1982, availability peaked for both 12th graders and 19-22 year olds, after which it fell through 1991 by 14-15 percentage points. Among 23-26 year olds, there was a decline of 14 percentage points between 1984 (when data were first available) and 2005. For 27-30 year olds, reported availability decreased by nine percentage points between 1988 (the first measurement point) and 2005. Decreases also occurred among 35-45 year olds in the 2000s but some reversal has been evident in recent years in the older cohorts. In 2011 all age strata from age 18 through age 35 showed an increase in perceived availability for amphetamines, statistically significant for those 19-22 and 23-26 years old. (It should be noted that the examples of amphetamines used in the question text were updated in 2011 to include Adderall and Ritalin, while "pep pills" and "bennies" were eliminated as outdated examples. Therefore, the sharp rise in reported *availabilit*y of amphetamines in 2011 among young adults likely was due to the revision of the examples provided). Between 2011 and 2020, availability declined unevenly for 18 year olds (from 47% to 39% in 2020), was fairly level for 19-30 year olds (from 52-56% to 50-55%), and was fairly level for 35-50 year olds (from 34-40% to 34-35%).

- Perceived availability of ***crystal methamphetamine*** (or "***ice***") has remained low and decreased unevenly for most groups. It decreased 3 percentage points for 12th graders (to 12% in 2019), 7 percentage points for 19-22 year olds (to 8.0% in 2020), increased 3 percentage points for 23-26 year olds (to 18% in 2020), and decreased 7 percentage points for 27-30 year olds (to 14% in 2020); the one year declines in 2020 were significant for 19-22 and 27-30 year olds (Table 7-4). (This question is not asked of those over age 30.)

  By way of contrast to amphetamines, crystal methamphetamine exhibited an increase in availability in the 1990s, rising for all four age strata from 1991 to 1998/1999 before stabilizing with similar rates of availability from ages 18 to 30. All four strata have shown some decline in recent years), starting with the youngest three age strata after 2006 and the 27-30 year olds after 2008. In recent years through 2020, availability has been lowest for the youngest three age bands, a reversal of the situation in the early 1990s (Table 7-4).

- Over the past five years (2015-2020), perceived availability of ***sedatives*** (***barbiturates***) was fairly level for 12th graders through 2019 (24%), and declined 6 to 9 percentage points for

young adults (reaching 26% to 34% in 2020) (Table 7-4). (This question is not asked of those over age 30.)

Perceived availability of sedatives (barbiturates) exhibited a long-term decline in availability over more than two decades from about 1981 or 1982 through 2003 in the two younger groups—a 20-percentage-point drop among 12th graders and a 23-percentage-point drop among 19-22 year olds. All four age groups showed increased perceived availability in 2004, no doubt due primarily to an updating of the examples given in the question, increasing to 46%, 44%, 49%, and 41%, respectively. Since then, it has decreased (sometimes unevenly) for each age group, dropping to 24% in 2019 for 12th graders, and to 26%, 29%, and 34% in 2020 for the three young adult age groups, respectively.

- Perceived availability of ***tranquilizers*** has generally decreased in recent years among young adults. In the 2020 panel surveys, we changed the tranquilizer items to include examples, inserting "(Librium, Valium, Xanax, etc.)" in the perceived availability items (for ages 19-30). With this change, there were substantial and significant (25 to 29 percentage point) increases in reported availability among young adults, reaching 38-44% in 2020 (Table 7-2). It is likely that the addition of the examples helped respondents recognize the more general category of tranquilizers (a similar case was found regarding perceived friends' use with this item wording change in 2020 as discussed above). Before this item wording change, from 2010 through 2019, there were 9 to 12 percentage point decreases among young adults (which is consistent with declines for sedatives (barbiturates) as discussed above). For 12th graders between 2010 and 2019, it dropped unevenly 4 percentage points. (This question is not asked of those over age 30.)

  The overall longer-term pattern across the years (prior to the wording change in 2020) for tranquilizer availability has been one of decline. It declined long-term by about four fifths among 12th graders, from 72% in 1975 to 15% in 2019. Since 1980, when data were first collected for 19-22 year olds, tranquilizer availability has declined by over three fourths (from 67% in 1980 to 12% in 2019), such that previous differences in availability between these two groups were eliminated by 1992. The older young adult age groups have also shown a considerable decline in the availability of tranquilizers through 2019, thus narrowing the differences among them. For the most part, trend lines for the different age groups have been quite parallel, as has been true for sedatives (barbiturates).

TABLE 7-1
Trends in Proportions of Respondents Reporting Their Close Friends Disapproving of Drug Use among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Percentage saying friends disapprove [1]

Q. How do you think your close friends feel (or would feel) about you. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Trying marijuana once or twice [3,4]	18	42.6	46.4	50.3	52.0	54.1	54.7	56.7	58.0	62.9	63.7	70.3	69.7	73.1	66.6	62.7	58.1	55.8	53.0	53.8	55.1
	19–22	41.0	40.6	46.9	47.1	51.6	54.5	55.2	54.7	58.7	63.0	63.6	64.7	64.7	63.4	63.7	58.5	64.3	58.4	57.0	56.5
	23–26	—	—	—	—	47.7	47.0	49.1	53.9	58.2	62.6	61.3	64.5	65.6	65.5	63.2	63.8	61.2	59.3	66.5	62.6
	27–30	—	—	—	—	—	—	—	—	58.6	58.7	61.4	64.6	63.5	64.4	66.3	66.1	65.8	65.0	65.4	61.8
Using marijuana occasionally	18	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4	75.8	79.2	73.8	69.1	65.4	63.1	59.9	60.4	61.6
	19–22	50.9	49.2	54.0	57.9	59.4	64.6	64.4	65.1	69.8	71.5	74.1	73.9	74.3	73.1	73.0	66.6	71.3	65.1	65.1	64.6
	23–26	—	—	—	—	54.3	56.4	57.1	63.1	68.1	73.2	71.8	72.5	75.3	73.5	72.2	70.7	70.8	68.5	73.6	70.2
	27–30	—	—	—	—	—	—	—	—	67.8	69.4	71.9	73.7	76.0	75.1	76.4	73.8	75.6	72.4	74.9	74.5
Using marijuana regularly	18	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7	85.9	88.0	83.5	80.6	78.9	76.1	74.1	74.7	74.5
	19–22	70.3	75.2	75.7	79.5	80.0	82.7	83.5	84.8	86.9	87.5	89.1	88.4	89.1	87.6	85.9	83.9	84.5	83.3	81.1	78.2
	23–26	—	—	—	—	77.8	78.4	80.9	82.0	85.8	89.2	88.1	87.9	90.3	89.1	88.8	84.9	89.5	85.6	87.1	86.8
	27–30	—	—	—	—	—	—	—	—	85.4	86.0	88.4	89.2	88.7	88.2	88.9	89.7	89.6	87.8	90.8	89.2
Trying LSD once or twice [2]	18	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9	87.9	87.3	83.5	83.4	82.6	80.8	79.3	81.7	83.2
	19–22	87.4	90.5	88.0	89.3	89.3	91.1	90.5	91.8	90.8	91.2	89.1	89.9	87.2	87.7	87.9	84.6	85.3	83.6	81.7	82.0
	23–26	—	—	—	—	87.4	90.8	88.6	89.8	88.9	91.0	90.1	92.4	88.9	87.7	86.3	85.3	88.5	85.4	87.6	84.5
	27–30	—	—	—	—	—	—	—	—	88.8	89.7	92.3	91.1	91.4	89.9	91.2	89.7	89.3	88.5	88.7	88.4
Trying cocaine once or twice [2]	18	—	—	—	—	—	—	79.6	83.9	88.1	88.9	90.5	91.8	92.2	91.1	91.4	91.1	89.2	87.3	88.8	88.7
	19–22	—	—	—	—	—	—	76.4	—	84.8	87.7	89.2	92.3	91.9	92.4	94.7	91.7	91.5	91.8	90.0	91.2
	23–26	—	—	—	—	—	—	70.8	—	81.4	84.5	84.1	86.7	87.4	87.7	87.9	90.4	90.0	91.1	92.0	89.6
	27–30	—	—	—	—	—	—	—	—	81.8	81.1	83.7	83.5	84.4	86.1	87.8	87.5	88.7	89.4	89.3	90.5
Taking cocaine occasionally [2]	18	—	—	—	—	—	—	87.3	89.7	92.1	92.1	94.2	94.7	94.4	93.7	93.9	93.8	92.5	90.8	92.2	91.8
	19–22	—	—	—	—	—	—	84.9	—	91.0	93.8	94.2	95.6	95.9	95.6	97.5	95.6	95.7	96.6	93.1	95.7
	23–26	—	—	—	—	—	—	81.7	—	88.2	91.5	92.4	94.1	93.8	93.5	94.3	94.6	95.4	95.1	95.2	95.2
	27–30	—	—	—	—	—	—	—	—	87.7	89.5	90.0	92.2	92.3	92.8	94.6	94.1	94.6	94.2	96.1	95.4
Trying an amphetamine once or twice [2]	18	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2	85.3	85.7	83.2	84.5	81.9	80.6	80.4	82.6	83.0
	19–22	75.8	76.7	75.3	74.3	77.0	79.7	81.5	81.3	83.0	83.5	84.5	86.5	83.8	85.0	87.2	83.1	86.0	84.5	84.0	85.8
	23–26	—	—	—	—	78.4	79.1	76.7	81.7	83.0	85.6	84.3	85.0	83.6	84.2	84.7	87.6	86.5	83.3	87.0	85.9
	27–30	—	—	—	—	—	—	—	—	82.7	84.1	84.9	84.6	84.7	84.1	85.9	85.5	85.6	85.9	85.8	87.2
Taking one or two drinks nearly every day [2]	18	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0	76.6	77.9	76.8	75.8	72.6	72.9	71.5	72.3	71.7
	19–22	71.9	72.1	68.6	73.5	71.6	72.2	72.7	70.2	73.9	77.1	73.3	73.7	74.0	71.2	73.0	68.3	68.9	73.5	67.3	68.6
	23–26	—	—	—	—	63.6	66.8	67.7	68.3	69.2	70.8	72.7	72.5	72.1	67.6	71.5	68.2	72.8	68.1	66.9	66.1
	27–30	—	—	—	—	—	—	—	—	71.0	68.0	70.4	71.9	68.8	73.2	70.9	68.8	65.7	67.3	66.7	64.3
Taking four or five drinks nearly every day [2]	18	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2	86.4	87.4	87.2	85.2	84.1	82.6	82.5	82.8	82.2
	19–22	93.7	91.7	89.9	91.9	91.7	92.5	91.5	90.8	90.4	92.5	89.9	91.7	92.6	89.6	90.1	88.8	88.1	90.0	85.9	87.9
	23–26	—	—	—	—	90.8	90.2	92.5	92.8	93.7	92.1	92.1	92.4	91.1	93.1	92.1	92.2	92.6	90.7	93.7	89.9
	27–30	—	—	—	—	—	—	—	—	92.8	92.0	92.9	92.7	92.7	93.9	94.0	92.9	91.9	93.8	92.1	95.3
Having five or more drinks once or twice each weekend	18	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0	58.1	60.8	58.5	59.1	58.0	57.8	56.4	55.5	57.6
	19–22	53.5	51.7	51.7	53.3	50.8	53.3	47.0	49.4	50.5	56.8	53.1	51.4	53.6	51.9	54.4	55.5	52.1	56.4	52.8	51.8
	23–26	—	—	—	—	53.8	57.3	61.0	57.2	58.8	57.5	55.1	56.8	58.4	57.6	61.4	58.9	58.4	55.6	60.0	54.5
	27–30	—	—	—	—	—	—	—	—	61.9	65.1	66.3	68.2	66.2	66.7	63.7	64.6	61.6	64.0	63.0	57.7
Smoking one or more packs of cigarettes per day	18	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3	74.0	76.2	71.8	72.4	69.2	69.3	68.5	69.0	71.2
	19–22	75.6	75.1	75.4	78.5	76.2	79.7	77.7	78.6	80.2	78.4	77.5	78.3	79.0	76.0	73.8	70.9	73.9	76.5	69.2	73.9
	23–26	—	—	—	—	73.9	77.3	80.3	80.5	79.5	80.5	78.5	83.3	82.3	77.4	80.1	78.8	78.3	75.8	76.5	78.0
	27–30	—	—	—	—	—	—	—	—	81.2	80.9	82.9	84.5	83.1	86.8	82.5	83.4	81.9	80.5	81.9	82.6
Approximate Weighted N =	18	*2,766*	*3,120*	*3,024*	*2,722*	*2,721*	*2,688*	*2,639*	*2,815*	*2,778*	*2,400*	*2,184*	*2,160*	*2,229*	*2,220*	*2,149*	*2,177*	*2,030*	*2,095*	*2,037*	*1,945*
	19–22	*569*	*597*	*580*	*577*	*582*	*556*	*577*	*595*	*584*	*555*	*559*	*537*	*520*	*510*	*470*	*480*	*471*	*466*	*436*	*430*
	23–26					*510*	*548*	*549*	*540*	*510*	*513*	*516*	*516*	*507*	*481*	*463*	*445*	*436*	*419*	*425*	*394*
	27–30									*483*	*518*	*479*	*480*	*451*	*451*	*457*	*439*	*439*	*422*	*440*	*397*

(Table continued on next page.)

TABLE 7-1 (cont.)
Trends in Proportions of Respondents Reporting Their Close Friends Disapproving of Drug Use among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. How do you think your close friends feel (or would feel) about you. . .	Age Group	Percentage saying friends disapprove [1]																					2019–2020 change
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Trying marijuana once or twice [3,4]	18	58.1	57.6	54.1	58.4	59.5	60.9	62.3	60.4	60.8	61.4	54.9	53.0	52.9	51.2	50.4	51.0	48.6	44.3	45.8	40.9	§	—
	19–22	56.0	54.2	53.4	56.5	61.0	57.9	60.5	58.4	62.4	57.0	57.4	52.4	54.6	52.2	50.7	46.7	40.5	41.1	34.9	34.8	33.2	-1.7
	23–26	64.6	55.2	53.8	51.4	57.7	55.9	60.7	55.8	62.1	57.1	58.0	55.5	59.3	50.2	50.1	43.7	44.7	40.0	39.1	33.3	27.0	-6.3
	27–30	63.9	64.9	67.1	61.9	67.2	61.2	64.1	58.2	57.1	55.6	60.5	57.1	56.8	48.2	49.5	45.5	42.1	41.6	39.5	40.7	31.7	-9.0 s
Using marijuana occasionally	18	63.9	64.3	60.3	64.2	65.0	67.6	68.1	65.8	66.3	68.5	61.8	59.4	59.5	57.6	56.2	58.1	54.9	51.4	53.2	49.0	§	—
	19–22	61.8	61.0	62.6	63.3	70.1	67.2	68.8	70.6	67.5	65.9	67.1	60.6	60.9	59.0	59.5	54.1	48.0	48.4	40.0	42.8	37.9	-4.8
	23–26	70.9	63.9	64.5	61.6	63.5	65.5	71.3	63.8	70.1	66.8	63.4	64.7	69.3	60.9	57.6	54.9	52.6	49.1	45.2	37.6	32.2	-5.3
	27–30	75.0	74.2	72.9	71.4	76.9	70.4	74.9	66.4	67.0	64.6	68.3	64.9	67.1	59.7	60.1	57.8	51.5	48.4	45.8	44.3	39.6	-4.8
Using marijuana regularly	18	76.1	77.8	75.3	77.0	77.3	79.5	79.8	78.3	78.0	79.1	73.8	73.3	72.7	71.2	70.1	70.9	68.4	65.2	67.9	62.7	§	—
	19–22	78.5	80.0	80.5	79.1	84.4	82.2	84.1	83.7	81.4	81.9	81.1	76.3	74.5	75.2	77.1	74.3	67.1	71.4	63.8	60.8	57.1	-3.7
	23–26	86.9	83.7	82.8	80.0	79.2	82.7	83.7	81.9	87.1	81.9	83.5	82.7	83.8	77.7	76.7	71.6	71.3	68.4	68.4	59.0	54.5	-4.5
	27–30	91.6	90.1	87.9	87.2	88.0	87.7	88.2	84.3	84.5	83.4	87.5	83.4	86.1	80.8	81.5	76.2	74.8	68.1	66.1	59.1	58.6	-0.5
Trying LSD once or twice [2]	18	84.7	85.5	84.9	87.5	87.3	88.4	89.5	88.4	86.3	87.2	84.5	85.6	85.0	84.9	84.6	81.9	83.3	81.3	82.7	81.3	§	—
	19–22	82.1	85.2	86.9	86.9	88.6	90.5	90.4	90.0	90.0	87.1	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	85.3	82.8	83.6	79.3	82.4	85.6	89.3	90.4	88.4	88.3	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	85.6	87.4	86.3	87.1	87.7	86.9	88.5	83.5	85.3	84.6	—	—	—	—	—	—	—	—	—	—	—	—
Trying cocaine once or twice [2]	18	90.2	89.3	89.1	91.2	87.9	89.0	88.7	89.6	88.7	90.2	89.7	89.7	89.2	89.2	88.6	87.0	89.1	88.5	88.7	89.3	§	—
	19–22	89.4	89.1	91.7	90.6	90.3	90.3	91.2	93.3	90.2	91.2	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	90.5	88.0	88.5	83.6	84.2	84.6	88.7	91.7	91.0	91.0	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	90.4	89.3	88.8	89.9	91.8	89.5	92.0	86.4	88.0	84.5	—	—	—	—	—	—	—	—	—	—	—	—
Taking cocaine occasionally [2]	18	92.8	92.2	92.2	93.0	91.0	92.3	92.4	93.1	92.0	92.7	91.8	92.9	92.8	92.5	91.4	90.6	91.5	91.7	93.1	91.6	§	—
	19–22	94.7	94.5	95.6	95.1	96.0	95.3	96.1	97.1	95.5	95.6	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	96.7	94.7	93.2	91.2	90.1	93.0	94.9	95.9	96.6	95.6	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	95.9	94.2	94.0	95.1	96.3	94.5	95.4	93.2	94.3	94.3	—	—	—	—	—	—	—	—	—	—	—	—
Trying an amphetamine once or twice [2]	18	84.1	83.8	83.3	85.9	84.7	86.1	86.7	87.3	87.1	87.0	85.8	84.6	83.7	83.5	83.2	83.2	83.2	83.7	84.5	85.1	§	—
	19–22	81.6	84.5	87.6	87.6	89.4	88.9	89.4	89.1	90.2	87.4	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	85.1	83.1	83.9	81.5	82.7	86.2	89.9	89.3	89.6	87.2	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	87.8	86.4	86.0	87.9	88.9	87.5	88.5	82.9	85.3	85.6	—	—	—	—	—	—	—	—	—	—	—	—
Taking one or two drinks nearly every day [2]	18	71.6	73.4	71.6	74.7	72.8	74.0	73.2	74.5	75.2	75.5	75.0	74.9	74.0	75.4	74.0	76.3	76.3	77.3	77.8	76.4	§	—
	19–22	66.6	64.9	68.5	64.4	72.4	68.3	68.7	68.4	69.5	68.8	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	65.4	64.4	61.6	62.1	61.8	62.3	66.1	62.5	63.4	59.4	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	67.3	67.1	64.0	64.5	65.0	62.8	64.9	59.4	58.9	59.8	—	—	—	—	—	—	—	—	—	—	—	—
Taking four or five drinks nearly every day [2]	18	82.8	84.4	80.1	83.1	82.9	82.7	83.3	84.8	84.7	84.6	83.4	85.8	84.1	85.8	83.8	85.3	85.6	87.3	86.5	85.9	§	—
	19–22	86.6	84.6	87.7	86.8	89.8	86.8	89.0	90.7	88.8	89.9	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	92.5	91.1	88.1	89.3	87.8	89.1	90.8	87.8	93.8	89.1	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	92.4	91.2	92.7	92.6	92.5	93.4	92.3	91.3	89.0	93.1	—	—	—	—	—	—	—	—	—	—	—	—
Having five or more drinks once or twice each weekend	18	57.7	57.8	55.6	60.3	59.4	59.9	60.6	60.0	62.1	63.5	62.0	62.2	62.3	65.2	65.6	68.5	70.7	69.0	72.1	70.7	§	—
	19–22	45.2	47.4	50.4	47.9	52.4	53.2	54.8	54.4	55.2	54.6	47.7	48.7	53.9	53.0	54.5	50.4	51.9	54.7	55.5	48.2	53.1	+4.9
	23–26	56.6	56.9	52.9	49.5	49.5	51.9	56.0	51.3	55.3	51.0	51.2	50.7	53.4	48.5	52.3	49.7	51.1	52.1	51.9	52.4	49.7	-2.7
	27–30	65.8	58.8	63.3	59.6	64.6	56.9	62.7	56.3	57.3	52.7	52.9	50.6	53.7	52.7	57.1	52.8	54.1	56.4	53.7	52.1	54.9	+2.8
Smoking one or more packs of cigarettes per day	18	72.6	74.5	75.7	79.2	78.6	81.1	81.2	81.4	82.5	81.6	81.4	81.6	83.2	84.4	84.0	85.1	87.1	85.3	87.0	88.8	§	—
	19–22	71.1	74.3	77.3	78.3	82.1	82.7	84.8	87.0	85.5	86.8	85.7	84.8	89.2	87.9	90.9	90.7	90.2	89.5	90.7	89.4	91.8	+2.3
	23–26	79.9	77.0	75.4	78.3	77.6	77.4	84.4	82.6	88.2	88.1	88.0	88.2	90.6	85.5	89.6	88.5	90.0	90.5	92.1	90.3	88.5	-1.8
	27–30	84.0	83.6	86.1	84.0	84.6	82.2	84.1	81.3	83.9	85.0	89.5	88.4	88.1	90.0	89.4	92.2	91.2	90.1	90.1	90.2	92.1	+1.9
Approximate Weighted N =	18	*1,775*	*1,862*	*1,820*	*2,133*	*2,208*	*2,183*	*2,183*	*2,161*	*2,090*	*2,033*	*2,101*	*2,132*	*2,126*	*1,916*	*1,863*	*1,992*	*1,763*	*1,922*	*1,972*	*2,013*	*§*	
	19–22	*379*	*402*	*361*	*399*	*427*	*395*	*395*	*361*	*370*	*389*	*347*	*364*	*337*	*309*	*289*	*263*	*246*	*255*	*272*	*254*	*285*	
	23–26	*398*	*378*	*366*	*363*	*377*	*361*	*344*	*349*	*336*	*322*	*355*	*320*	*329*	*327*	*284*	*299*	*238*	*244*	*249*	*233*	*274*	
	27–30	*394*	*374*	*364*	*346*	*408*	*362*	*327*	*330*	*318*	*333*	*322*	*321*	*285*	*303*	*288*	*265*	*272*	*279*	*258*	*254*	*241*	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' — ' indicates data not available.

§ Insufficient data for 2020 estimate.

[1] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

[2] These questions were dropped from the questionnaires beginning in 2010.

[3] For the estimate of Friends' Disapproval of Trying Marijuana Once or Twice in 2018, there was a significant difference (p<.05) among those age 19-22 between thye typical mail condition (28.4%) and the new web-push condition (39.9%) of suirvey administration.

[4] As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-7.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

TABLE 7-2
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take any illicit drug [2,7]																					
% saying any	18	87.5	85.4	86.3	82.6	81.0	82.4	82.2	81.7	79.1	76.9	71.0	69.1	67.3	71.0	78.3	78.6	80.6	83.4	84.6	82.0
	19–22	90.2	88.0	86.8	85.0	82.3	82.9	80.5	76.7	77.2	78.4	72.7	71.5	66.8	71.7	71.6	71.6	76.2	77.2	79.8	77.3
	23–26	—	—	—	—	83.6	82.7	80.3	80.9	74.4	73.8	65.8	63.0	67.3	64.6	66.7	65.3	64.6	67.0	67.6	67.9
	27–30	—	—	—	—	—	—	—	—	74.8	72.9	69.6	67.1	61.5	60.2	57.1	58.5	59.1	60.9	58.3	59.6
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	38.1	37.4	39.7	39.2	38.4	36.3
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.2	38.2
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	11.6	11.7	12.0	15.5	20.3	21.7	23.8	23.7	25.9	25.5
	19–22	34.9	32.8	28.1	22.4	21.9	18.2	16.2	14.0	13.5	10.9	10.5	8.8	9.0	10.4	14.9	13.1	17.3	16.2	16.8	20.6
	23–26	—	—	—	—	19.6	15.4	16.2	11.7	9.5	9.7	9.5	7.4	6.2	6.4	8.7	7.6	8.8	10.5	9.6	8.4
	27–30	—	—	—	—	—	—	—	—	8.6	6.4	5.9	2.9	5.8	5.0	5.6	6.1	3.6	4.5	5.3	5.7
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	1.9	2.0	3.0	3.1	2.8
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.0
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any illicit drug other than marijuana [2]	18	62.4	63.3	64.7	61.2	61.3	61.8	63.3	62.4	56.5	56.2	50.1	46.3	47.1	48.7	53.7	53.7	54.5	55.1	55.6	51.2
% saying any	19–22	67.9	67.8	66.7	65.2	60.8	62.1	61.0	57.3	53.5	60.8	53.4	51.5	45.3	51.4	46.3	46.4	46.5	49.7	53.3	54.8
	23–26	—	—	—	—	63.7	64.0	59.0	61.1	55.1	54.2	47.8	41.8	46.1	42.3	39.4	40.3	32.8	35.1	35.4	41.1
	27–30	—	—	—	—	—	—	—	—	55.9	55.0	49.7	47.2	37.7	38.5	33.9	37.7	36.4	33.9	34.1	35.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.4	21.6	22.1	19.2	19.3	19.0
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.9	21.0
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	11.1	11.9	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1	4.6	5.3	7.1	7.1	7.7	8.9	7.0	8.9	7.4
	19–22	9.8	12.9	11.8	9.8	9.3	8.6	7.6	5.0	5.3	4.0	3.2	2.6	3.3	4.0	4.4	3.5	6.2	4.1	4.3	5.1
	23–26	—	—	—	—	10.6	6.6	8.6	5.2	3.9	4.2	3.4	1.6	1.8	2.8	2.5	1.9	1.9	2.6	2.8	2.2
	27–30	—	—	—	—	—	—	—	—	4.6	3.0	2.8	1.0	1.4	1.5	1.5	1.5	0.9	1.2	0.9	1.3
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	0.5	0.7	0.5	0.7	0.9
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.8
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take any illicit drug [2,7]																							
% saying any	18	82.0	82.8	81.8	80.7	81.2	79.8	78.8	77.7	80.1	79.2	80.4	81.7	78.9	80.8	80.8	78.2	79.9	79.6	78.1	77.2	§	—
	19–22	83.1	81.1	78.3	79.4	78.1	78.6	74.7	79.8	77.4	80.3	78.6	78.1	78.8	78.3	79.4	—	83.5	83.8	81.2	80.6	78.6	-2.0
	23–26	67.8	66.9	73.4	70.8	70.8	74.2	72.2	71.3	72.2	74.5	75.7	80.3	74.2	76.9	78.5	—	80.2	79.1	85.8	87.0	83.0	-4.0
	27–30	55.6	57.2	61.8	58.6	63.1	63.7	62.3	62.7	66.7	70.0	66.9	69.2	72.3	72.9	73.6	—	74.5	78.0	82.3	82.6	84.8	+2.2
	35	37.7	39.1	40.9	37.5	37.9	40.0	40.4	42.1	44.9	44.4	45.0	50.8	49.0	52.7	55.3	55.9	60.9	62.9	61.7	64.0	67.5	+3.6
	40	38.0	38.4	36.2	36.5	34.6	36.2	35.4	34.6	35.9	39.0	37.3	36.6	40.3	42.1	42.0	44.0	48.0	49.0	52.0	59.0	61.1	+2.1
	45	—	—	—	37.8	38.3	34.3	36.7	38.5	35.9	36.1	37.7	36.2	39.2	39.5	41.3	39.6	42.8	43.8	48.2	48.5	53.7	+5.2 s
	50	—	—	—	—	—	—	—	—	39.3	37.0	36.5	36.0	38.4	39.1	39.8	41.1	40.4	44.0	44.3	45.9	51.2	+5.3 s
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	36.2	36.2	38.0	38.7	41.7	41.2	44.7	45.5	+0.8
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.0	42.8	44.6	+1.8
% saying most or all	18	24.5	25.2	23.1	23.5	23.0	20.2	20.9	21.7	21.3	22.4	25.4	29.1	26.4	26.7	24.6	28.0	24.9	26.1	26.7	25.4	§	—
	19–22	18.9	20.3	20.2	17.3	14.7	15.8	16.8	14.5	13.7	16.0	17.2	21.8	17.3	22.1	20.5	—	22.3	25.5	27.1	26.9	23.9	-3.0
	23–26	9.7	10.4	10.3	10.3	11.7	9.7	11.1	8.1	8.9	12.7	13.9	10.5	9.1	13.6	15.3	—	14.0	18.3	19.5	20.6	24.8	+4.2
	27–30	5.3	7.1	6.9	6.9	3.9	4.7	5.4	6.5	6.3	6.4	6.6	7.1	6.8	6.7	8.3	—	9.1	10.3	13.9	13.6	17.8	+4.2
	35	3.1	3.2	2.9	3.2	2.8	2.5	2.1	2.2	2.2	2.5	3.7	4.5	3.3	4.7	5.1	6.4	6.3	6.5	8.9	8.5	9.4	+0.9
	40	2.0	1.6	2.2	1.6	1.6	2.1	2.5	2.0	1.3	1.3	2.1	1.9	1.2	2.3	3.3	3.4	4.1	3.9	4.6	6.3	9.2	+2.9 s
	45	—	—	—	2.2	1.5	1.4	1.7	1.3	1.3	1.2	1.5	1.2	1.0	1.5	1.9	1.6	2.2	2.1	3.2	3.5	3.6	+0.1
	50	—	—	—	—	—	—	—	—	1.4	1.4	1.4	1.8	1.8	1.0	1.4	1.9	2.0	1.4	2.2	2.0	2.7	+0.8
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	0.9	2.2	1.3	2.0	2.3	1.9	2.6	+0.7
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.6	2.7	+1.1
Take any illicit drug other than marijuana [2]	18	52.5	55.0	54.3	50.0	51.4	51.3	51.0	50.0	49.3	49.4	53.7	49.9	48.9	45.4	43.7	41.2	44.2	40.3	41.1	38.7	§	—
% saying any	19–22	56.1	60.0	57.2	50.8	53.4	54.9	49.5	52.5	46.4	47.5	52.0	52.0	49.3	52.4	50.3	—	46.2	51.2	54.3	54.0	48.7	-5.3
	23–26	42.5	42.6	49.4	42.3	47.1	46.6	45.6	42.6	45.9	44.4	52.4	50.5	46.6	45.3	53.3	—	50.3	49.6	54.3	55.2	50.8	-4.4
	27–30	31.7	33.5	36.0	34.7	35.8	33.1	36.2	34.2	36.4	41.6	40.1	40.9	50.1	44.6	48.2	—	45.1	50.7	52.2	52.0	56.3	+4.3
	35	17.9	18.7	20.4	18.5	20.2	18.5	18.1	20.7	23.7	20.2	23.9	26.4	25.7	25.2	26.5	27.2	28.3	29.3	27.8	27.6	29.3	+1.7
	40	21.9	21.4	21.0	20.2	18.5	21.0	20.3	20.3	19.8	20.6	18.8	17.4	20.2	18.7	17.9	21.3	23.5	20.3	19.6	21.7	28.5	+6.8 ss
	45	—	—	—	23.4	25.1	20.8	22.7	25.0	21.2	20.7	20.9	21.5	22.6	20.9	19.7	18.3	18.3	19.8	21.5	18.4	24.1	+5.7 ss
	50	—	—	—	—	—	—	—	—	24.5	24.8	21.7	22.8	22.2	20.1	21.3	20.5	18.9	20.7	20.3	16.5	23.5	+7.0 sss
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	19.9	19.0	21.0	20.1	18.8	18.6	18.8	20.5	+1.7
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.2	17.3	21.0	+3.7 s
% saying most or all	18	7.4	7.0	6.1	6.7	7.3	6.7	5.3	6.5	5.3	5.6	7.1	6.5	5.5	4.3	5.1	6.0	4.6	4.6	4.8	4.3	§	—
	19–22	7.7	8.0	5.7	5.1	3.5	4.8	4.2	3.9	3.4	3.6	4.8	7.4	4.6	6.6	5.5	—	4.6	5.7	6.6	6.6	3.4	-3.2
	23–26	3.8	3.7	2.8	3.7	3.1	3.2	3.2	1.0	1.5	2.9	3.2	3.1	3.2	3.3	5.3	—	3.5	4.6	2.7	6.5	3.5	-3.0
	27–30	1.5	2.6	2.3	0.7	0.8	0.9	1.4	2.2	2.5	1.7	1.5	2.5	1.5	0.7	1.6	—	2.4	2.5	1.9	2.1	4.4	+2.3
	35	1.0	0.9	0.6	0.6	0.4	0.5	0.5	0.6	0.5	0.5	1.0	0.7	0.8	1.3	0.9	1.2	0.9	0.7	0.7	1.5	1.1	-0.4
	40	0.7	0.5	0.3	0.3	0.2	0.5	0.7	0.6	0.7	0.3	*	0.2	0.1	0.2	0.4	0.6	0.4	0.5	0.4	1.0	1.2	+0.2
	45	—	—	—	0.7	0.7	0.4	0.9	0.5	0.5	0.3	0.3	0.1	0.2	0.4	0.5	0.2	0.3	0.5	0.6	0.8	0.7	0.0
	50	—	—	—	—	—	—	—	—	0.5	0.4	0.3	0.8	0.4	0.2	0.3	0.3	0.5	0.2	0.2	0.1	0.4	+0.3
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.4	0.4	0.3	0.2	0.2	0.3	0.2	-0.1
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.5	0.8	+0.3

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Use marijuana																					
% saying any	18	86.4	83.0	84.4	80.3	77.7	79.5	79.2	78.4	75.3	72.5	68.3	65.8	63.1	67.4	75.6	76.1	78.0	81.4	83.2	80.7
	19–22	88.8	86.4	85.2	83.8	81.6	81.1	78.5	75.3	75.1	73.8	67.6	68.0	63.5	67.6	67.4	68.8	74.9	74.7	77.2	73.9
	23–26	—	—	—	—	82.0	80.8	77.7	79.4	71.6	69.8	61.8	59.6	61.3	61.2	62.6	63.2	62.6	63.5	65.0	64.4
	27–30	—	—	—	—	—	—	—	—	71.8	68.2	65.1	62.6	58.0	57.4	52.3	55.7	55.1	58.3	55.5	57.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.9	36.3	36.3	35.0	34.6	33.3
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.6	32.5
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	31.3	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1	10.0	10.3	13.9	18.9	20.7	22.2	22.5	23.8	24.2
	19–22	34.1	30.6	25.6	20.6	19.4	16.0	13.3	12.5	12.2	9.0	9.2	8.3	8.2	8.5	13.0	12.5	16.3	16.2	16.4	19.4
	23–26	—	—	—	—	17.0	14.3	13.7	10.4	7.8	8.6	8.3	6.9	5.6	5.6	7.5	6.6	8.2	9.8	9.0	8.5
	27–30	—	—	—	—	—	—	—	—	6.8	4.4	4.0	2.8	5.1	5.2	5.0	5.6	3.5	3.9	4.8	5.5
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	2.5	2.9	2.9	2.8	2.6
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	1.4
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use inhalants																					
% saying any	18	17.8	16.5	18.4	16.1	19.3	21.2	22.4	24.7	20.8	22.1	20.0	19.2	22.2	23.7	26.5	27.5	27.2	27.4	25.9	21.6
	19–22	11.9	13.2	13.8	12.3	11.7	9.6	10.9	12.7	10.9	11.7	13.0	12.2	12.6	13.8	14.0	14.2	16.2	13.7	16.2	16.3
	23–26	—	—	—	—	7.7	6.7	7.2	6.1	6.2	5.9	6.1	4.4	5.1	6.3	7.0	9.3	5.6	7.5	6.2	7.9
	27–30	—	—	—	—	—	—	—	—	4.6	3.5	2.9	2.5	3.3	2.9	3.5	4.0	4.1	3.6	3.8	4.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.2	0.9	1.3	1.1	1.1	1.5	2.0	1.9	1.2	1.9	1.0	0.7	1.8	1.8	2.0	2.0	2.4	1.9	2.7	1.8
	19–22	0.5	0.4	0.7	0.3	0.5	0.6	0.7	0.7	0.7	0.4	0.6	0.2	0.8	0.7	0.7	0.6	1.1	0.7	1.3	0.8
	23–26	—	—	—	—	0.6	0.2	0.6	0.1	0.2	0.4	0.4	0.1	*	0.1	0.2	0.7	0.5	0.8	*	0.1
	27–30	—	—	—	—	—	—	—	—	0.3	*	0.2	0.2	*	0.2	*	*	*	*	*	*
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Use marijuana																							
% saying any	18	80.5	81.2	79.4	78.9	79.5	77.4	76.4	74.8	78.2	77.2	79.7	80.6	77.7	80.2	79.3	76.9	78.9	78.2	76.5	76.4	§	—
	19–22	81.2	78.4	77.2	76.5	75.6	75.8	72.0	76.6	74.7	77.7	75.6	74.7	76.8	76.2	77.5	78.4	82.9	82.8	79.4	81.6	77.7	-4.0
	23–26	64.8	64.5	68.8	67.7	68.4	70.7	67.6	69.0	67.7	71.7	71.9	77.5	71.5	73.4	74.7	74.6	79.2	77.5	84.4	84.2	81.5	-2.8
	27–30	51.7	56.5	59.0	55.8	60.4	60.8	61.0	60.2	64.2	65.2	62.3	65.9	66.6	69.2	69.4	76.2	72.2	76.2	80.0	78.6	82.6	4.0
	35	34.9	35.6	37.4	32.9	34.7	37.2	37.3	38.6	42.1	40.6	41.3	47.4	45.1	48.8	54.0	53.4	57.0	60.7	60.1	62.9	65.3	+2.4
	40	32.3	31.8	31.4	30.7	29.9	30.4	29.4	29.2	29.6	33.6	32.1	32.4	35.8	38.0	38.2	39.4	45.0	46.4	49.7	57.8	58.7	+0.9
	45	—	—	—	31.1	29.4	26.3	28.4	30.0	28.6	29.4	32.6	30.3	33.0	34.5	36.4	34.8	37.6	40.4	45.7	45.3	50.9	+5.6 s
	50	—	—	—	—	—	—	—	—	30.1	26.9	28.0	27.9	31.3	33.0	34.0	36.2	36.1	39.4	40.5	43.7	47.3	+3.6
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	29.5	28.9	31.6	31.9	37.0	36.6	40.6	41.2	+0.6
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.3	38.9	40.9	+2.0
% saying most or all	18	23.2	24.0	21.4	21.7	21.1	17.9	19.6	19.2	19.9	20.9	23.6	27.3	25.0	25.7	23.4	25.9	23.8	24.3	25.7	24.9	§	—
	19–22	16.6	18.5	18.6	16.0	15.0	13.4	15.7	13.4	11.5	14.5	15.4	19.1	16.2	19.7	18.3	23.1	20.5	23.9	26.3	28.7	23.5	-5.2
	23–26	8.2	9.0	8.7	9.3	9.8	8.0	10.1	7.9	8.5	12.2	12.3	9.6	8.3	12.8	13.7	17.1	12.8	15.2	17.1	21.7	23.4	+1.7
	27–30	4.9	6.3	6.2	6.7	3.5	4.3	5.0	6.6	5.0	5.8	6.3	5.8	5.6	6.6	7.8	7.4	8.0	9.4	12.7	18.1	16.3	-1.9
	35	2.8	2.6	2.7	3.1	2.7	2.3	2.0	2.1	1.9	2.3	3.4	4.2	2.9	4.3	4.9	6.2	6.1	6.1	8.4	7.9	8.8	+0.9
	40	1.9	1.2	2.0	1.4	1.6	1.8	2.1	1.6	0.9	1.2	2.1	1.7	1.2	2.1	3.1	3.1	3.8	3.9	4.5	6.2	8.2	+2.0
	45	—	—	—	1.9	0.9	1.3	1.1	1.0	1.0	1.1	1.3	1.1	0.9	1.3	1.6	1.5	2.1	2.0	2.9	3.1	3.0	-0.1
	50	—	—	—	—	—	—	—	—	1.2	1.2	1.2	1.3	1.5	1.0	1.2	1.6	1.6	1.4	2.2	2.0	2.4	+0.3
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	0.7	1.9	1.1	1.9	2.2	2.0	2.4	0.4
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.4	2.2	+0.8
↓																							
Use inhalants																							
% saying any	18	23.5	22.2	21.0	17.5	17.9	18.1	18.9	17.9	18.0	18.0	19.0	16.4	12.3	12.1	9.4	8.7	8.8	7.2	9.0	8.0	§	—
	19–22	13.7	13.7	10.4	10.0	9.5	11.1	11.0	9.6	7.4	6.6	8.3	11.9	8.2	7.3	5.5	7.5	3.5	5.4	6.6	6.2	5.7	-0.4
	23–26	6.9	7.5	7.4	7.9	6.2	5.8	5.2	3.7	6.1	6.5	6.0	4.8	5.4	4.1	4.4	2.7	4.1	5.3	3.7	5.7	4.5	-1.2
	27–30	3.6	6.0	4.5	3.2	2.6	3.2	3.3	2.8	2.7	3.6	1.7	3.2	3.8	2.9	5.4	1.7	3.7	4.2	4.7	3.3	4.1	+0.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.4	1.4	1.2	1.1	1.2	2.0	1.2	1.6	1.1	0.9	1.8	1.4	0.9	1.1	0.7	0.8	0.8	0.7	1.1	0.7	§	—
	19–22	0.6	1.2	0.4	0.6	*	0.1	0.5	0.3	0.6	*	0.6	0.6	0.1	0.9	*	0.5	*	*	0.8	0.4	*	-0.4
	23–26	0.7	0.1	0.4	0.3	*	0.1	0.3	*	*	*	0.1	0.1	*	0.3	0.3	*	*	0.4	*	0.4	0.3	0.0
	27–30	*	0.3	0.3	*	*	*	*	*	0.3	0.3	*	0.3	*	0.1	0.5	*	*	0.4	*	0.4	*	-0.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Use nitrites																					
% saying any	18	19.0	17.4	17.5	14.5	15.0	15.6	18.0	18.3	13.6	13.3	10.4	8.9	9.0	10.7	10.0	10.7	11.2	11.9	12.9	10.9
	19–22	18.4	16.0	14.2	13.8	8.9	9.9	11.7	13.2	10.2	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	10.8	7.8	8.0	7.9	5.2	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	6.6	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.9	0.6	0.4	0.7	0.7	0.8	0.8	0.8	0.7	1.0	0.7
	19–22	0.3	0.4	0.9	0.6	0.6	0.6	0.4	0.4	0.2	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	0.8	0.3	0.4	0.3	0.1	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	0.5	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take LSD																					
% saying any	18	28.1	28.5	27.8	24.0	23.9	24.4	24.5	25.3	24.1	25.2	25.0	23.4	28.1	31.3	34.1	36.9	37.9	36.5	36.8	32.2
	19–22	30.9	25.9	26.5	22.6	21.6	18.8	18.7	18.2	19.0	20.1	20.1	22.0	22.2	28.8	23.8	26.9	28.6	24.7	29.4	28.2
	23–26	—	—	—	—	21.5	17.2	15.4	15.9	13.3	14.1	12.3	12.5	15.0	17.2	17.3	21.5	15.3	18.2	15.2	18.1
	27–30	—	—	—	—	—	—	—	—	10.4	7.7	9.1	8.6	10.9	8.7	8.1	12.0	11.6	12.3	12.6	13.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all [15]	18	1.8	2.2	2.4	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9	1.7	2.4	3.8	4.2	4.8	5.0	3.7	4.7	3.9
	19–22	1.2	0.8	0.9	1.0	0.6	0.8	0.9	0.6	1.3	0.4	1.2	1.4	1.9	2.1	2.5	2.3	3.8	1.4	2.5	1.8
	23–26	—	—	—	—	0.8	0.5	1.0	0.2	0.6	0.5	0.6	0.2	0.4	0.7	1.1	0.7	0.7	0.6	1.0	1.5
	27–30	—	—	—	—	—	—	—	—	0.3	0.2	0.3	0.3	*	0.3	0.4	0.3	0.4	0.4	0.1	0.6
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Use nitrites																							
% saying any	18	11.0	11.9	11.2	8.5	9.4	9.1	8.1	7.7	7.3	7.7	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.0	0.6	0.8	1.0	1.2	1.0	0.5	0.7	0.5	0.2	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take LSD																							
% saying any	18	31.9	32.2	28.6	21.9	23.5	19.5	18.7	18.3	20.9	21.3	22.3	22.5	21.3	17.7	18.0	18.9	22.7	20.1	21.5	21.2	§	—
	19–22	27.8	28.4	24.0	15.4	15.9	13.9	14.2	15.1	12.5	12.8	16.0	18.0	15.7	23.3	17.1	22.0	17.1	26.3	27.8	25.6	29.5	+3.9
	23–26	19.3	16.8	15.8	16.1	14.4	12.0	11.7	11.2	9.2	11.0	11.9	10.2	11.5	13.4	16.7	16.8	17.0	22.7	20.7	29.6	25.7	-3.9
	27–30	11.8	12.5	13.1	11.4	8.9	6.6	9.1	7.6	8.8	7.6	8.2	7.6	7.7	10.6	9.7	8.4	12.8	14.3	16.1	20.7	24.5	+3.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all [15]	18	3.1	2.9	1.7	1.9	1.5	1.5	0.8	1.2	1.1	1.1	1.5	1.4	1.3	1.2	1.2	1.6	1.0	1.5	2.0	1.9	§	—
	19–22	2.1	2.7	1.6	0.8	0.3	0.3	0.2	0.8	0.2	0.3	1.4	0.7	1.0	1.0	0.9	1.8	0.7	0.9	1.2	0.4	1.7	+1.3
	23–26	0.9	0.3	0.4	0.8	0.4	0.2	0.3	*	0.1	0.5	0.1	0.6	0.4	0.3	0.6	0.4	0.4	1.0	0.4	2.9	0.7	-2.2 s
	27–30	0.4	0.4	0.3	0.1	*	0.3	0.4	0.4	*	0.5	0.2	0.1	*	*	0.3	*	*	0.4	0.7	*	1.1	+1.1
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take other hallucinogens [3]																					
% saying any	18	28.2	26.3	25.6	22.1	21.3	22.0	22.3	21.7	17.8	18.1	15.9	15.1	17.0	19.3	21.4	23.8	26.4	26.3	26.3	22.5
	19–22	33.4	25.5	25.1	21.0	20.2	16.6	15.8	15.0	16.1	13.9	15.3	14.2	12.0	15.0	13.8	14.9	17.2	17.2	17.2	18.9
	23–26	—	—	—	—	20.0	16.7	13.2	13.2	11.7	9.6	8.7	8.5	9.8	9.4	10.3	11.7	10.4	13.0	13.0	9.6
	27–30	—	—	—	—	—	—	—	—	10.6	7.4	7.1	6.8	7.9	7.1	6.6	7.9	7.5	6.8	6.8	9.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0	0.8	1.0	1.7	2.2	2.2	2.3	2.6	2.6	2.4
	19–22	1.5	0.9	1.1	1.2	0.7	1.0	0.7	0.6	0.9	0.2	0.5	0.8	0.7	0.9	1.6	1.5	1.0	1.1	1.1	0.8
	23–26	—	—	—	—	0.8	0.3	0.5	0.3	0.2	0.3	0.8	0.1	0.4	0.7	0.6	0.8	0.1	0.8	0.8	0.8
	27–30	—	—	—	—	—	—	—	—	0.2	0.1	0.3	0.2	*	0.2	0.3	0.1	0.2	0.3	0.3	0.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take PCP																					
% saying any	18	22.2	17.2	17.3	14.2	14.2	15.9	16.1	15.5	13.5	14.7	13.0	12.0	12.7	15.6	15.5	18.3	20.3	19.7	19.7	16.8
	19–22	24.1	15.3	15.3	12.6	9.5	8.9	10.1	9.7	10.1	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	11.6	6.8	7.4	6.9	5.1	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	6.7	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.6	0.9	0.9	1.1	1.1	1.2	1.2	1.1	0.8	1.2	0.5	0.5	0.9	1.9	1.2	1.2	1.3	1.4	1.4	1.5
	19–22	0.5	0.3	0.3	0.5	0.7	0.7	0.2	0.1	0.3	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	0.6	*	0.4	*	0.2	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	0.4	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take other hallucinogens [3]	18	24.0	35.4	33.6	30.1	31.9	31.0	30.1	30.1	29.4	30.5	32.3	31.8	29.5	26.9	22.0	22.1	23.7	20.0	21.5	18.8	§	—
% saying any	19–22	20.9	33.6	33.5	24.8	26.8	25.1	27.8	26.7	21.9	21.8	26.4	26.4	22.6	28.3	19.9	27.1	23.2	26.8	31.6	26.6	32.4	+5.8
	23–26	11.3	18.6	22.4	20.2	24.5	18.5	18.9	15.9	21.1	19.6	22.6	16.5	17.5	17.4	25.5	20.3	21.1	24.2	24.2	28.0	27.6	-0.4
	27–30	8.0	14.6	14.9	13.5	12.4	9.4	14.9	10.6	16.9	12.1	14.9	13.9	17.1	16.5	15.6	18.8	17.3	19.4	20.2	24.0	26.9	+2.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	2.4	2.9	2.3	2.4	2.6	2.2	1.7	1.7	1.8	1.6	2.0	2.1	2.0	1.6	1.6	1.7	1.0	1.2	1.7	1.2	§	—
	19–22	2.0	2.3	2.2	1.5	1.1	0.6	0.9	1.0	1.3	0.6	0.9	0.7	0.8	1.0	1.0	1.3	0.7	0.9	1.0	0.4	1.1	+0.7
	23–26	0.3	0.6	0.7	1.0	0.8	0.7	1.0	0.4	0.4	1.2	0.2	0.7	0.5	1.2	1.1	0.5	0.6	1.4	0.4	1.7	0.9	-0.9
	27–30	0.4	0.6	1.0	0.1	*	0.4	0.4	0.4	0.4	0.6	0.7	0.5	0.3	0.4	0.1	*	0.3	0.4	0.7	0.2	1.2	+1.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take PCP																							
% saying any	18	17.5	19.1	17.2	13.6	11.8	10.1	10.6	9.4	9.4	9.3	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.7	1.3	1.0	1.5	1.1	1.0	0.5	0.8	0.5	0.5	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take MDMA (ecstasy, Molly)																					
% saying any [8]	18	—	—	—	—	—	—	—	—	—	—	12.4	11.9	10.7	12.8	15.9	20.7	24.2	27.7	27.7	26.7
	19–22	—	—	—	—	—	—	—	—	—	16.3	14.3	12.0	12.9	13.7	11.3	17.2	20.7	21.4	21.4	30.7
	23–26	—	—	—	—	—	—	—	—	—	7.6	9.0	9.5	11.0	9.8	11.4	11.2	11.3	15.1	15.1	15.2
	27–30	—	—	—	—	—	—	—	—	—	5.6	6.3	5.4	4.6	6.6	5.8	6.9	10.1	7.4	7.4	12.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	—	—	—	—	—	—	—	—	—	—	2.2	1.7	2.1	1.2	1.7	2.8	3.0	2.6	2.6	2.7
	19–22	—	—	—	—	—	—	—	—	—	0.4	0.7	0.2	0.7	0.7	0.5	0.5	0.8	1.7	1.7	2.9
	23–26	—	—	—	—	—	—	—	—	—	0.5	0.2	0.1	0.1	0.5	0.1	0.4	0.1	0.8	0.8	0.4
	27–30	—	—	—	—	—	—	—	—	—	0.5	0.3	*	0.1	0.3	0.2	0.5	0.1	0.3	0.3	0.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cocaine																					
% saying any	18	41.6	40.1	40.7	37.6	38.9	43.8	45.6	43.7	37.7	37.4	31.7	26.8	26.3	24.5	26.1	24.8	28.1	28.2	31.2	27.8
	19–22	51.0	48.9	49.8	46.5	47.6	45.9	48.3	45.7	42.0	42.7	33.2	29.7	22.8	24.3	21.5	22.0	19.4	22.2	26.8	25.7
	23–26	—	—	—	—	52.4	53.2	51.6	50.7	47.1	40.8	34.8	29.0	28.8	27.1	22.3	24.4	18.1	19.7	18.7	20.1
	27–30	—	—	—	—	—	—	—	—	47.9	43.3	38.3	35.7	29.9	27.6	22.6	26.2	20.8	21.5	18.6	20.7
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	1.5	2.1	1.5	2.0	2.2	2.0	3.2	2.9
	19–22	7.0	8.6	7.8	6.1	6.3	6.1	6.1	3.3	3.5	2.1	1.2	1.1	1.0	0.5	1.5	0.9	1.0	0.8	1.5	1.1
	23–26	—	—	—	—	9.1	5.3	7.0	4.1	3.1	2.7	2.1	0.6	0.9	0.8	1.0	0.3	0.4	1.1	0.9	0.5
	27–30	—	—	—	—	—	—	—	—	3.8	2.0	2.3	0.9	1.2	0.8	0.8	0.4	0.4	0.6	0.1	0.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take MDMA (ecstasy, Molly)																							
% saying any [8]	18	37.3	41.9	38.0	34.2	28.9	23.1	23.0	23.6	24.7	23.5	25.9	27.5	26.8	25.6	24.3	26.3	24.4	22.4	19.4	16.3	§	—
	19–22	42.4	43.3	43.4	31.3	27.6	28.3	25.2	21.6	19.3	24.4	20.4	22.0	18.9	27.4	19.9	—	23.8	26.5	23.2	25.5	21.6	-3.8
	23–26	25.9	29.4	36.8	27.0	31.2	25.3	23.4	16.5	20.8	19.7	20.7	19.5	18.8	19.1	22.7	—	24.9	29.0	28.7	29.3	26.7	-2.6
	27–30	13.1	17.8	20.6	19.4	20.6	15.6	22.6	15.9	17.8	17.0	12.7	10.6	15.8	13.5	17.7	—	20.5	24.1	25.9	32.6	30.3	-2.3
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	4.8	5.2	3.7	2.7	3.2	2.5	1.9	2.1	2.4	2.2	2.1	2.7	2.7	1.8	2.3	2.0	1.0	1.2	1.7	1.2	§	—
	19–22	4.9	5.8	2.7	1.9	1.9	1.1	0.7	0.8	0.9	1.6	1.3	2.9	1.2	2.0	1.5	—	2.6	1.3	1.3	0.5	0.6	+0.2
	23–26	2.9	1.7	1.2	2.0	1.1	1.3	0.9	0.3	0.4	0.7	0.6	0.4	1.7	1.0	2.2	—	0.6	0.4	1.0	1.8	1.0	-0.8
	27–30	0.4	0.3	0.9	0.5	0.6	0.2	*	0.1	0.9	0.7	0.1	0.5	0.3	0.1	0.8	—	1.3	0.4	0.2	1.0	1.2	+0.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cocaine																							
% saying any	18	27.2	27.1	26.8	23.8	29.3	28.1	29.7	29.7	25.2	24.0	22.9	18.8	18.1	18.8	17.9	18.3	16.9	17.0	18.1	15.7	§	—
	19–22	24.8	27.4	28.2	25.5	26.2	27.2	26.6	29.4	21.8	21.2	21.8	22.3	15.9	19.5	20.5	21.4	18.2	24.6	29.5	24.8	21.4	-3.4
	23–26	20.3	19.4	23.7	21.9	27.4	25.6	24.6	23.1	23.1	23.5	28.0	23.7	21.6	18.9	20.3	22.0	22.2	28.5	34.9	30.7	30.9	+0.2
	27–30	16.5	19.7	16.0	17.0	17.0	17.9	19.5	18.6	20.7	22.1	19.2	16.1	21.6	18.4	20.8	24.7	22.4	23.4	25.3	30.7	25.3	-5.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	2.0	1.7	1.7	2.4	2.3	2.3	1.9	2.1	1.2	1.8	1.4	1.0	0.8	1.1	0.8	1.5	0.9	1.1	1.0	1.5	§	—
	19–22	1.0	1.8	1.0	1.4	0.7	2.1	1.0	1.1	1.3	0.5	0.2	0.5	0.3	0.9	0.6	1.1	0.8	2.6	1.9	1.1	1.1	0.0
	23–26	0.8	1.6	1.0	1.6	1.0	1.5	1.4	0.8	0.6	1.7	0.9	0.4	0.6	0.9	1.1	1.0	0.6	2.0	0.2	1.9	1.5	-0.4
	27–30	0.4	0.5	0.6	0.3	0.3	*	*	1.4	0.9	0.7	0.2	0.5	0.6	0.5	0.4	0.4	0.5	0.8	0.6	2.1	1.5	-0.6
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take crack																					
% saying any [9]	18	—	—	—	—	—	—	—	27.4	25.4	26.1	19.2	17.6	17.8	17.9	20.0	19.2	21.6	22.2	24.4	19.0
	19–22	—	—	—	—	—	—	—	23.8	21.8	20.6	14.6	14.3	11.8	13.6	13.8	14.0	9.4	13.1	16.4	15.7
	23–26	—	—	—	—	—	—	—	26.4	22.4	19.8	14.4	10.8	10.8	8.8	8.8	11.1	8.2	8.3	8.3	8.8
	27–30	—	—	—	—	—	—	—	—	22.1	18.4	16.6	11.6	10.3	10.2	10.4	10.3	8.6	6.3	6.4	8.7
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5	5.1	4.4	3.1	2.8	3.2
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.8	3.0
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	—	—	—	—	—	—	—	2.2	1.1	2.1	0.6	0.6	0.7	0.9	1.0	1.1	0.9	1.1	1.7	1.5
	19–22	—	—	—	—	—	—	—	0.7	0.8	1.0	0.6	0.2	0.1	0.3	0.4	0.3	0.5	0.3	0.9	0.9
	23–26	—	—	—	—	—	—	—	0.8	0.9	0.8	0.5	0.1	0.1	0.5	0.2	*	0.3	0.5	0.4	*
	27–30	—	—	—	—	—	—	—	—	1.2	0.9	0.9	0.3	*	0.6	0.3	0.1	0.2	0.2	0.1	*
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.3	0.4	*	0.1	0.3
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	0.2
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cocaine powder																					
% saying any	18	—	—	—	—	—	—	—	—	—	25.3	24.6	19.8	19.7	18.1	20.7	19.2	22.8	24.8	22.9	22.0
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.2	12.9	15.4	11.1	10.4	10.0
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.8	8.9
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	—	—	—	—	—	—	—	—	—	2.3	2.5	1.8	2.0	1.6	1.9	1.7	1.9	2.0	1.9	1.9
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	0.3	0.6	0.4	0.4	0.6
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take crack																							
% saying any [9]	18	21.4	23.4	21.5	18.7	22.5	22.9	22.3	21.8	19.1	18.8	15.2	12.1	10.4	10.3	9.0	10.1	8.0	8.0	8.6	7.5	§	—
	19–22	16.5	17.4	18.0	11.8	16.0	14.9	14.5	16.0	12.2	11.3	7.2	8.3	5.1	8.3	6.9	—	5.9	4.9	8.1	—	—	—
	23–26	7.9	8.6	10.1	10.4	10.8	10.8	10.0	8.7	9.8	8.5	7.0	6.7	6.5	7.5	5.0	—	5.4	8.4	10.8	—	—	—
	27–30	6.0	7.1	6.4	6.5	5.2	8.5	9.1	6.9	5.8	9.5	3.6	4.2	3.6	4.6	4.2	—	4.8	5.2	5.6	—	—	—
	35	3.9	2.8	3.2	2.8	3.1	2.6	2.8	3.0	2.8	2.5	3.4	2.1	1.3	2.9	3.5	3.4	2.6	2.1	—	—	—	—
	40	2.9	3.5	2.6	2.7	2.6	2.8	2.3	3.1	1.9	1.2	1.5	1.2	1.2	1.2	2.1	1.9	1.1	1.2	—	—	—	—
	45	—	—	—	3.7	3.3	2.4	3.0	2.9	1.8	2.3	2.2	1.8	1.6	2.1	1.2	1.0	1.0	0.5	—	—	—	—
	50	—	—	—	—	—	—	—	—	2.0	1.6	1.8	1.4	1.1	1.2	1.9	1.3	0.9	0.9	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	1.2	1.1	0.9	0.8	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.4	0.8	0.8	1.4	1.6	1.6	1.0	1.3	1.1	1.1	1.5	0.9	0.8	0.9	0.8	1.0	0.7	1.0	0.8	1.1	§	—
	19–22	0.5	0.3	0.2	0.4	0.1	1.0	0.8	0.3	0.4	0.3	*	0.3	0.3	0.6	0.1	—	0.4	*	0.4	—	—	—
	23–26	0.5	0.3	*	0.3	0.5	0.2	0.7	0.1	0.3	*	0.4	0.1	*	0.3	0.1	—	1.2	0.9	*	—	—	—
	27–30	*	*	0.3	0.1	*	0.1	*	0.3	0.6	0.3	*	*	*	0.5	*	—	0.2	0.4	*	—	—	—
	35	0.5	0.2	0.3	0.3	0.1	0.2	0.2	0.2	*	0.1	0.3	*	0.1	*	*	0.3	0.2	0.1	—	—	—	—
	40	0.2	0.1	*	*	*	0.1	0.2	0.1	0.0	*	*	*	*	0.1	*	0.3	*	0.1	—	—	—	—
	45	—	—	—	0.4	0.3	0.2	0.2	*	*	0.1	*	*	0.1	0.1	0.2	*	0.1	*	—	—	—	—
	50	—	—	—	—	—	—	—	—	0.2	0.1	0.2	0.1	0.0	0.2	0.1	*	0.2	0.1	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.0	0.2	0.0	0.1	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cocaine powder																							
% saying any	18	21.3	20.1	22.4	23.2	25.4	23.2	22.8	22.3	22.6	19.1	17.6	15.9	17.4	15.6	15.4	14.7	16.0	17.1	15.8	12.9	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	10.3	9.4	9.4	8.2	9.2	8.3	8.4	9.1	11.4	8.7	10.5	12.8	9.0	11.6	12.8	13.2	12.0	13.4	15.4	15.1	15.1	0.0
	40	8.8	8.8	8.5	7.6	7.6	8.9	7.3	6.7	6.2	6.5	4.9	4.8	5.2	6.6	6.6	6.2	8.1	7.3	8.5	10.8	12.7	+1.9
	45	—	—	—	8.3	8.0	7.0	7.4	8.0	6.7	6.4	5.9	5.8	6.0	6.0	5.2	4.6	4.8	4.8	8.1	7.7	7.4	-0.2
	50	—	—	—	—	—	—	—	—	6.0	5.4	5.3	4.9	4.9	4.4	4.6	5.1	4.3	4.5	5.8	4.5	5.3	+0.8
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.0	3.8	3.5	3.9	4.9	4.5	4.4	-0.1
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.7	4.7	+0.9
% saying most or all	18	1.8	1.5	1.9	1.9	3.3	1.7	1.7	1.8	1.5	1.5	1.0	1.6	1.5	1.2	1.8	1.2	2.2	2.2	2.1	1.8	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	0.7	0.4	0.4	0.4	0.2	0.2	0.2	0.4	0.2	0.2	0.4	0.0	0.1	0.7	0.1	0.8	0.4	0.6	0.3	0.8	0.4	-0.3
	40	*	0.2	0.1	0.1	0.1	0.2	0.5	0.2	0.2	0.1	*	*	*	*	*	0.3	*	0.2	0.1	0.2	0.3	0.0
	45	—	—	—	0.5	0.5	0.2	0.4	0.1	0.1	*	*	*	0.1	0.3	0.2	*	0.1	0.3	0.3	0.5	0.3	-0.2
	50	—	—	—	—	—	—	—	—	0.2	0.2	0.2	0.0	0.0	0.1	0.2	*	0.4	0.1	0.1	0.1	0.2	+0.1
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.1	0.2	0.1	0.1	0.1	0.3	0.0	-0.2
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.3	+0.1

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take heroin																					
% saying any [10,16]	18	13.0	12.5	13.2	12.0	13.0	14.5	15.3	13.9	12.4	14.0	11.4	11.4	13.2	13.3	14.3	14.5	15.6	15.6	16.5	12.7
	19–22	11.0	8.1	9.4	7.5	7.1	6.5	8.5	8.5	7.8	6.8	6.5	6.1	4.7	7.0	8.1	10.4	6.7	7.4	9.4	9.7
	23–26	—	—	—	—	6.1	4.4	4.3	6.5	3.6	5.2	4.2	3.6	3.8	4.5	4.9	5.8	4.0	6.2	5.8	4.8
	27–30	—	—	—	—	—	—	—	—	3.8	2.8	4.5	2.7	3.1	3.6	4.2	3.6	4.4	4.2	3.5	3.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4	0.4	0.7	1.1	1.0	1.1	0.9	0.8	1.3	1.0
	19–22	0.3	0.5	0.1	0.2	0.4	0.6	0.2	0.3	0.2	0.2	0.3	0.2	0.1	0.2	0.4	0.4	0.4	0.2	0.5	0.1
	23–26	—	—	—	—	0.4	0.2	0.2	*	0.2	0.4	0.2	0.3	0.4	0.1	0.2	0.2	*	0.7	*	*
	27–30	—	—	—	—	—	—	—	—	0.2	0.1	0.2	0.2	*	0.2	0.3	*	*	*	0.1	*
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take other narcotics [4]																					
% saying any [17]	18	22.4	23.1	23.9	20.8	21.4	22.8	21.8	23.2	19.2	19.2	17.2	13.7	14.9	16.1	18.5	19.5	21.8	22.2	24.8	22.9
	19–22	22.8	20.4	21.9	17.9	17.4	16.9	14.6	15.4	14.1	15.0	12.9	14.1	10.8	13.2	10.5	15.9	13.4	13.2	15.2	19.8
	23–26	—	—	—	—	16.0	14.9	14.0	13.0	10.6	10.8	10.5	8.5	8.4	8.7	8.0	10.5	8.9	9.9	9.4	10.4
	27–30	—	—	—	—	—	—	—	—	12.1	8.6	9.1	9.3	7.5	8.2	8.0	7.7	9.5	7.9	8.3	7.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9	0.5	1.1	1.2	1.0	1.6	1.5	1.4	2.9	1.8
	19–22	0.9	0.7	0.6	0.5	0.8	1.0	0.5	0.4	0.9	0.1	0.6	0.4	0.5	0.6	0.6	0.6	0.4	0.4	0.8	0.4
	23–26	—	—	—	—	0.4	0.3	0.7	*	0.3	0.2	0.2	*	*	*	0.3	0.2	*	0.6	0.3	*
	27–30	—	—	—	—	—	—	—	—	0.3	*	0.2	0.2	0.1	0.2	0.2	*	0.2	*	*	0.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take heroin																							
% saying any [10,16]	18	14.9	13.1	12.9	10.3	12.7	13.1	12.7	12.9	11.2	12.7	12.4	10.2	7.7	8.5	7.9	7.1	6.0	5.3	5.8	4.6	§	—
	19–22	7.7	8.7	8.9	5.3	7.0	6.4	7.5	9.0	6.4	3.9	5.3	6.2	6.4	4.8	4.6	5.6	6.6	3.6	3.3	3.0	1.3	-1.7
	23–26	4.7	5.0	5.2	6.1	2.9	5.1	3.5	4.3	3.1	5.9	6.9	3.9	5.9	4.6	3.9	3.0	4.4	7.0	3.3	4.2	2.5	-1.7
	27–30	2.8	4.3	3.9	3.4	3.0	3.8	2.5	3.0	2.1	3.9	3.3	2.6	3.5	4.6	3.3	4.9	4.6	3.7	3.8	7.8	3.3	-4.5 s
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.1	0.9	0.7	0.9	0.9	1.1	0.8	1.4	0.7	0.9	1.3	0.6	0.6	0.6	0.5	0.7	0.7	0.9	0.3	0.7	§	—
	19–22	0.3	0.6	*	0.3	*	0.3	0.4	0.3	0.6	*	*	0.5	0.1	0.6	*	0.6	*	*	0.4	0.4	*	-0.4
	23–26	0.3	*	0.1	*	*	0.3	0.3	*	*	0.1	0.5	0.1	0.1	0.8	0.3	0.5	0.2	0.6	*	0.4	0.3	0.0
	27–30	*	*	0.3	*	*	*	*	*	*	0.3	*	0.3	*	0.1	0.1	*	0.2	0.4	*	0.2	*	-0.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take other narcotics [4]																							
% saying any [17]	18	23.1	24.0	27.5	21.6	24.6	21.4	23.0	20.7	20.6	21.5	36.3	31.0	28.5	25.8	22.0	20.0	20.5	18.4	14.7	14.2	§	—
	19–22	23.2	23.0	21.8	21.9	22.6	19.9	17.6	23.7	16.8	15.3	31.4	31.3	25.7	29.5	20.9	21.7	17.1	19.1	19.6	16.4	9.4	-7.1 s
	23–26	11.2	13.5	14.6	18.4	16.8	18.3	17.6	14.2	16.0	19.3	36.7	30.4	27.9	25.6	29.2	24.4	24.2	18.8	21.8	13.3	14.5	+1.2
	27–30	8.4	11.2	11.8	11.0	12.0	12.5	13.1	10.6	14.3	14.2	28.4	29.8	32.9	30.4	29.6	28.7	25.5	26.8	26.2	24.9	19.3	-5.5
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	2.0	2.0	2.1	2.4	2.4	1.9	1.8	2.6	1.3	1.9	3.8	2.6	1.8	1.9	1.8	1.5	1.7	1.7	1.3	0.9	§	—
	19–22	1.2	1.8	1.3	1.0	0.5	1.0	0.9	0.3	1.3	0.4	1.8	2.1	1.4	2.7	0.5	1.1	0.5	0.3	1.0	*	0.4	+0.4
	23–26	0.4	0.5	0.6	0.6	0.5	0.8	0.5	0.3	0.1	0.9	1.6	1.1	1.0	1.6	1.2	1.0	0.6	1.0	*	0.4	0.3	0.0
	27–30	*	*	0.3	0.1	*	*	0.6	*	0.6	0.6	0.9	1.2	0.1	0.5	0.5	*	0.5	0.9	0.2	0.2	0.5	+0.3
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take amphetamines [5]																					
% saying any	18	43.9	48.8	50.6	46.1	45.1	43.3	41.8	39.5	33.4	33.5	28.7	24.3	24.3	27.5	28.1	30.3	32.2	32.7	33.8	30.8
	19–22	54.1	52.2	51.3	49.7	46.1	42.1	38.5	34.5	26.8	29.6	23.3	26.2	19.5	21.0	20.9	21.7	21.6	21.1	24.4	25.5
	23–26	—	—	—	—	45.6	40.1	33.5	32.1	28.4	23.1	20.6	17.1	15.1	16.8	16.2	18.2	12.5	14.4	14.1	14.2
	27–30	—	—	—	—	—	—	—	—	26.1	21.6	19.3	17.0	15.3	14.0	13.1	13.7	15.5	12.9	11.0	11.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9	1.3	1.3	2.0	1.8	2.0	2.8	2.4	3.4	2.8
	19–22	3.8	5.7	4.6	3.8	3.3	2.9	1.3	1.9	1.4	0.7	1.0	0.6	0.9	0.2	1.1	1.2	0.7	0.7	1.2	0.7
	23–26	—	—	—	—	1.9	1.8	1.7	1.2	0.3	0.6	0.7	0.8	0.4	1.5	0.9	0.5	0.2	0.8	0.5	0.6
	27–30	—	—	—	—	—	—	—	—	0.6	0.4	0.5	0.5	0.1	0.5	0.5	0.3	0.3	0.1	0.3	0.6
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take sedatives/ barbiturates [6]																					
% saying any	18	30.5	31.1	31.3	28.3	26.6	27.1	25.6	24.3	19.7	20.3	17.4	14.8	16.4	17.8	18.2	17.8	21.6	20.4	22.8	20.9
	19–22	33.2	27.9	27.7	23.6	22.0	17.2	18.8	15.5	14.0	14.1	11.9	12.8	10.7	11.7	9.7	13.3	11.6	12.1	14.8	16.0
	23–26	—	—	—	—	22.2	18.7	16.3	14.1	11.2	10.4	8.9	8.3	8.7	8.2	7.6	9.6	6.9	8.4	7.9	8.3
	27–30	—	—	—	—	—	—	—	—	12.0	8.5	8.8	7.1	6.6	6.7	7.4	7.2	6.7	6.5	6.1	5.7
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6	0.5	0.6	1.0	1.1	1.4	1.6	1.1	2.5	1.4
	19–22	1.1	1.3	1.0	0.8	0.8	0.5	0.3	0.4	0.8	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.2	0.7	0.4	0.4
	23–26	—	—	—	—	0.4	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.3	0.2	*	*	0.8	*	*
	27–30	—	—	—	—	—	—	—	—	0.2	*	0.4	0.2	0.2	0.2	*	*	0.3	*	*	0.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take amphetamines [5]																							
% saying any	18	32.9	33.2	34.4	28.1	31.4	28.8	29.0	27.4	27.3	30.0	31.1	31.3	30.5	25.7	25.0	24.2	27.3	21.4	21.5	18.9	§	—
	19–22	28.4	28.0	28.6	24.0	23.5	25.9	25.4	26.9	19.9	26.6	27.3	29.5	30.5	37.9	33.4	38.5	30.6	35.2	30.9	32.3	29.5	-2.8
	23–26	14.5	17.5	18.4	18.0	18.8	18.4	19.7	17.6	17.9	21.3	23.8	27.7	26.1	27.0	31.5	28.5	30.5	32.4	33.1	33.6	31.3	-2.3
	27–30	11.9	12.9	12.3	12.0	13.5	11.8	12.5	10.0	12.8	16.4	16.4	17.2	22.9	24.7	24.1	27.0	25.4	30.0	31.8	36.2	33.2	-3.1
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	3.1	2.2	2.4	2.1	2.9	2.2	2.0	2.4	1.8	2.0	2.9	2.2	2.4	2.2	2.9	2.5	2.4	1.7	1.7	1.4	§	—
	19–22	1.7	1.6	1.3	1.2	0.5	0.7	1.1	0.4	1.3	1.6	1.2	4.3	2.0	3.5	3.8	4.3	2.4	3.0	2.2	1.1	0.6	-0.5
	23–26	0.3	0.5	0.3	0.7	0.1	0.3	0.7	*	0.1	0.3	0.8	1.3	1.5	1.9	2.2	1.3	1.9	2.4	1.6	1.1	0.9	-0.2
	27–30	0.1	0.5	0.9	0.1	*	0.4	0.4	0.4	0.3	0.5	0.3	0.3	0.3	0.1	0.3	0.8	0.5	1.1	0.7	1.6	1.7	0.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take sedatives/ barbiturates [6]																							
% saying any	18	21.6	22.1	25.3	18.1	25.2	22.3	22.5	20.8	19.8	21.0	23.5	21.1	17.3	15.5	14.2	14.5	15.1	12.9	11.9	11.3	§	—
	19–22	15.2	18.6	17.1	14.4	18.8	19.6	18.7	20.1	17.8	16.4	19.1	14.5	13.7	19.0	13.6	18.2	12.0	14.9	13.2	13.3	10.4	-2.8
	23–26	6.6	11.1	10.9	12.9	16.7	15.7	16.2	16.5	13.4	18.6	17.6	12.2	11.8	14.3	15.0	11.9	15.4	11.6	16.2	11.3	12.0	+0.7
	27–30	6.4	7.9	7.4	7.3	11.5	10.5	13.5	12.5	15.2	12.7	15.3	13.7	14.5	16.5	13.0	13.1	13.0	14.8	14.5	17.0	14.8	-2.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.7	1.1	1.7	1.9	2.0	1.8	1.3	1.6	1.3	1.3	1.5	1.3	1.5	1.2	1.1	1.4	1.4	1.0	0.8	1.3	§	—
	19–22	1.0	0.9	0.8	0.7	0.3	0.3	0.2	0.6	0.5	1.0	0.6	0.6	0.3	1.2	0.7	1.3	*	0.2	0.4	0.4	0.7	+0.2
	23–26	0.4	0.4	*	0.2	0.4	0.2	0.5	*	0.4	0.4	0.5	0.3	0.4	0.7	0.4	0.7	0.8	1.0	*	0.4	0.8	+0.4
	27–30	*	0.3	0.6	0.1	*	0.5	0.4	0.6	0.1	0.9	0.4	0.2	*	0.1	0.1	0.4	0.6	0.4	0.2	0.6	*	-0.6
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Take quaaludes																					
% saying any	18	32.5	35.0	35.5	29.7	26.1	26.0	23.5	22.0	17.1	16.6	14.3	12.0	13.1	14.2	14.2	15.5	18.1	16.1	17.4	15.5
	19–22	38.3	36.2	35.4	30.5	24.6	19.9	20.3	16.9	12.5	10.9	10.0	10.6	9.2	10.0	7.8	11.5	10.1	9.3	10.6	11.4
	23–26	—	—	—	—	25.7	21.0	17.4	15.0	12.1	10.3	8.6	5.9	6.4	7.6	7.7	9.0	6.3	6.5	6.6	6.4
	27–30	—	—	—	—	—	—	—	—	11.8	7.9	8.2	7.0	7.1	6.5	6.6	4.5	6.9	4.9	4.1	5.1
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8	0.5	0.8	1.1	1.1	1.3	1.7	1.1	2.0	1.4
	19–22	1.9	2.7	1.2	1.3	1.2	0.6	0.2	0.4	0.4	0.2	0.6	0.2	0.1	0.1	0.2	0.7	0.1	0.6	0.5	0.4
	23–26	—	—	—	—	0.6	0.3	0.7	0.2	0.2	0.4	0.2	0.1	0.2	0.6	0.2	0.2	*	0.8	*	0.2
	27–30	—	—	—	—	—	—	—	—	0.5	0.2	0.2	0.2	*	0.2	*	*	0.2	*	*	0.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take tranquilizers [26]																					
% saying any [11,12,18,19,20]	18	29.7	29.5	29.9	26.7	26.6	25.8	24.2	23.3	19.9	18.0	14.9	13.5	14.6	15.5	16.5	15.8	18.1	17.9	19.7	16.4
	19–22	37.5	33.9	28.7	22.9	22.0	19.7	20.6	18.0	16.4	14.8	13.4	13.0	11.3	11.9	9.5	13.6	10.5	11.7	13.7	16.2
	23–26	—	—	—	—	29.3	26.3	22.3	20.8	15.5	13.1	14.8	12.1	12.5	11.0	13.4	10.4	10.7	9.6	8.5	9.8
	27–30	—	—	—	—	—	—	—	—	20.1	16.6	16.9	14.9	12.0	12.5	13.9	11.9	11.0	10.8	12.6	10.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.3	12.2	13.1	10.8	10.7	11.4
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.7	14.8
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.9	1.4	1.1	1.2	1.5	1.2	1.3	1.0	0.7	1.5	0.5	0.4	0.7	0.9	0.9	1.1	1.4	0.8	2.3	1.3
	19–22	0.7	0.9	0.5	0.8	0.3	0.7	0.3	0.6	0.4	0.1	0.4	0.5	0.1	0.1	0.2	0.7	0.7	0.8	0.6	0.3
	23–26	—	—	—	—	0.4	0.3	0.5	*	0.3	0.4	0.2	0.3	0.1	0.4	0.2	*	*	1.1	0.1	*
	27–30	—	—	—	—	—	—	—	—	0.5	0.3	0.4	0.2	0.1	0.2	0.4	*	0.2	*	*	0.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.3	0.3	0.1	0.2	0.6
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0	0.4
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Take quaaludes																							
% saying any	18	16.2	17.8	18.0	14.2	16.6	13.6	13.4	13.6	11.2	14.3	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	13.1	14.6	13.0	10.3	8.3	8.2	8.6	8.8	5.9	5.3	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	4.9	7.7	8.5	8.9	6.5	7.7	5.6	5.6	4.1	8.0	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	5.0	4.9	6.6	4.3	4.4	3.6	4.9	4.3	5.8	4.5	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.4	1.2	1.2	1.2	1.6	1.3	1.3	1.6	0.8	1.1	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	0.9	0.8	0.1	0.4	*	0.4	0.2	*	0.2	*	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	0.3	0.3	0.1	0.2	0.1	0.2	0.3	0.3	*	0.1	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	0.3	*	0.3	*	*	0.3	0.7	*	0.3	0.5	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take tranquilizers [26]																							
% saying any [11,12,18,19,20]	18	19.4	18.6	21.2	17.2	18.3	16.9	15.3	15.5	15.0	15.8	16.1	13.9	13.3	11.7	10.1	11.5	12.0	11.1	10.5	9.9	§	—
	19–22	16.7	21.3	18.1	14.5	12.3	11.5	13.0	17.2	11.6	11.1	11.6	8.2	10.2	12.7	8.6	10.8	7.2	7.9	10.1	7.8	22.0	+14.3 sss
	23–26	11.2	12.4	14.9	12.9	15.1	13.1	10.7	12.3	12.6	15.5	13.4	9.9	7.3	9.3	8.9	7.5	7.9	8.0	12.2	7.5	20.3	+12.7 sss
	27–30	10.6	9.6	10.6	10.4	9.9	9.7	8.5	9.1	12.3	10.3	9.5	9.4	12.6	12.3	8.7	11.6	7.1	9.3	8.6	10.8	22.9	+12.1 sss
	35	10.8	12.2	12.5	11.4	12.7	12.4	12.2	14.7	16.1	14.8	17.6	17.7	17.9	17.3	17.7	19.2	19.5	18.7	16.0	15.0	19.6	+4.6 s
	40	15.2	15.1	15.6	15.0	13.6	14.1	16.1	16.0	15.0	15.1	13.6	12.9	15.8	14.5	13.2	14.5	17.1	14.7	12.0	12.3	20.0	+7.7 sss
	45	—	—	—	17.3	19.8	15.4	18.3	20.7	17.3	17.5	16.3	16.7	18.8	16.7	15.8	14.5	14.2	13.7	15.7	13.2	20.1	+6.9 sss
	50	—	—	—	—	—	—	—	—	19.7	21.0	17.8	19.1	18.1	16.7	17.9	15.7	15.0	16.3	15.6	13.0	18.9	+5.9 ss
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	17.0	16.6	17.0	16.8	15.8	15.4	14.6	15.8	1.2
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.7	14.3	18.3	+4.0 s
% saying most or all	18	2.1	1.3	1.6	1.5	1.7	1.6	1.2	1.8	1.2	1.5	1.4	0.8	0.8	1.0	1.3	1.5	1.1	1.0	0.7	0.7	§	—
	19–22	0.6	0.9	0.4	0.4	0.3	0.3	0.3	0.3	0.1	0.1	0.6	0.6	0.2	0.6	0.4	0.8	*	0.7	0.6	0.4	0.2	-0.2
	23–26	0.5	0.8	0.1	*	0.5	0.7	0.4	*	0.1	0.3	0.2	0.1	0.3	0.3	0.3	0.2	0.4	0.4	*	0.4	0.3	0.0
	27–30	*	0.4	0.6	0.1	*	0.2	0.2	*	0.1	0.5	*	*	*	0.1	0.1	0.6	0.4	0.4	0.2	*	0.5	+0.5
	35	0.6	0.2	0.1	0.2	0.3	0.5	0.3	0.5	0.3	0.4	0.6	0.3	0.4	0.4	0.5	0.4	0.4	0.1	0.3	0.2	0.4	+0.2
	40	0.1	0.3	0.2	*	0.2	0.2	0.3	0.3	0.3	0.1	*	*	0.1	*	0.2	*	0.1	0.4	0.1	0.3	0.6	+0.4
	45	—	—	—	0.3	0.2	0.2	0.1	0.3	*	0.2	0.1	0.1	*	0.2	0.2	0.1	0.1	0.1	*	0.4	0.2	-0.2
	50	—	—	—	—	—	—	—	—	0.3	0.1	0.1	0.4	0.2	0.1	0.2	0.2	0.2	0.2	*	*	0.1	+0.1
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.4	0.2	0.2	0.1	0.0	0.2	0.2	-0.1
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0	0.4	0.5	+0.2

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Drink alcoholic beverages																					
% saying any	18	96.1	94.7	95.7	95.5	94.6	94.6	95.6	95.4	95.7	95.1	92.0	91.2	90.5	88.9	90.1	90.9	89.6	90.7	91.2	90.2
	19–22	96.3	96.7	96.6	97.3	96.8	95.8	96.9	95.6	97.0	97.6	96.1	95.2	93.1	95.1	92.5	94.8	93.7	94.5	94.5	92.8
	23–26	—	—	—	—	96.8	96.8	96.2	95.9	95.3	95.4	94.7	93.9	95.1	94.4	94.0	94.1	92.7	95.4	95.5	93.3
	27–30	—	—	—	—	—	—	—	—	96.1	96.0	95.2	94.4	95.6	93.4	93.3	93.3	93.1	95.1	93.1	94.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	89.6	89.9	90.3	89.5	88.1	88.7
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	88.4	88.9
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5	58.6	56.9	57.0	59.6	56.4	56.4	60.9	61.0	58.2
	19–22	76.6	77.6	75.2	75.1	74.9	71.9	74.2	71.3	73.4	74.1	70.0	71.4	67.4	66.5	68.7	63.9	67.0	63.8	69.4	67.8
	23–26	—	—	—	—	73.2	74.4	69.5	74.9	68.9	69.8	67.1	69.3	68.8	68.7	70.7	67.0	68.9	66.6	67.4	63.6
	27–30	—	—	—	—	—	—	—	—	66.7	67.8	62.0	62.7	63.3	61.3	63.2	62.6	64.1	66.6	62.9	64.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43.8	45.1	49.5	46.6	47.1	46.0
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37.7	41.4
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Get drunk at least once a week																					
% saying any [21]	18	83.1	81.8	83.1	83.9	81.5	82.5	84.7	85.6	84.4	82.8	79.2	79.8	79.9	79.2	81.4	78.9	78.5	82.4	81.1	81.5
	19–22	80.9	79.9	80.0	80.4	79.8	76.7	82.0	81.1	80.6	80.4	80.1	80.8	76.5	81.1	79.6	83.2	80.9	79.2	82.3	82.8
	23–26	—	—	—	—	73.1	72.7	73.5	73.7	72.1	73.1	72.2	74.0	73.1	74.3	72.1	73.1	74.5	71.9	74.1	71.0
	27–30	—	—	—	—	—	—	—	—	66.3	61.8	65.4	65.2	65.5	64.5	62.7	67.1	66.7	65.4	65.5	65.9
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.3	43.2	44.9	42.9	46.1	44.5
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.6	40.6
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all [13,14,22,23,24]	18	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5	29.7	28.6	27.6	28.4	27.4	29.0	30.9	31.7	30.1
	19–22	21.9	23.3	22.0	20.2	22.7	21.7	20.8	21.3	24.0	22.6	23.6	24.9	22.6	28.8	26.3	28.2	26.0	26.6	29.8	29.3
	23–26	—	—	—	—	11.4	11.6	12.5	11.9	12.8	12.0	13.9	11.6	14.6	13.2	15.2	15.2	14.0	17.0	16.0	16.8
	27–30	—	—	—	—	—	—	—	—	5.2	6.3	6.7	6.6	5.9	6.7	6.4	7.9	8.6	7.7	9.3	12.1
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.6	3.6	5.4	3.2	4.4	4.9
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	3.0
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Drink alcoholic beverages																							
% saying any	18	89.8	89.2	88.0	87.9	87.8	87.2	86.0	85.1	85.2	83.7	83.9	82.6	82.0	82.0	79.7	75.5	77.2	75.7	74.2	71.2	§	—
	19–22	95.2	93.4	94.5	92.5	90.4	95.0	91.9	94.0	92.6	93.2	90.9	88.9	93.3	92.0	91.0	—	87.7	86.8	86.5	87.0	87.4	+0.5
	23–26	94.5	93.1	95.3	92.8	94.9	91.6	93.6	94.7	93.3	95.0	95.3	95.3	92.3	92.5	94.1	—	91.6	91.9	90.8	90.0	89.0	-1.0
	27–30	92.7	91.4	92.8	90.5	94.4	93.7	95.6	92.4	91.7	93.9	93.0	92.5	93.4	91.6	95.1	—	94.7	92.5	90.3	92.1	89.0	-3.0
	35	89.6	89.3	90.1	87.4	93.4	91.3	90.6	90.5	91.0	90.4	93.3	93.0	92.7	93.2	92.6	92.6	94.3	93.2	92.4	93.7	93.5	-0.2
	40	90.7	89.6	90.5	89.2	90.5	92.1	90.8	93.0	89.3	92.6	92.1	92.4	91.3	91.9	90.8	91.2	91.4	91.2	92.5	94.1	93.0	-1.1
	45	—	—	—	87.9	90.3	89.8	90.1	89.8	90.5	89.5	90.6	90.8	90.1	91.4	92.4	92.5	91.3	90.0	91.2	92.1	91.9	-0.2
	50	—	—	—	—	—	—	—	—	88.9	90.2	89.9	90.4	90.1	89.2	92.0	90.3	91.4	91.2	90.9	93.3	91.6	-1.6
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	87.6	89.3	89.5	88.3	89.9	90.7	90.4	90.3	-0.1
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	88.7	90.0	91.2	+1.1
% saying most or all	18	57.2	59.2	53.7	53.1	53.9	55.3	52.4	52.0	51.6	50.5	51.4	50.3	49.4	46.9	46.2	42.3	39.2	39.7	38.0	35.5	§	—
	19–22	70.1	65.4	68.8	63.9	66.4	71.8	65.4	71.1	64.4	69.7	69.1	63.3	66.3	63.2	63.4	—	66.1	62.4	62.8	60.2	62.5	2.3
	23–26	70.8	65.7	73.4	66.0	71.3	69.3	69.2	70.2	76.3	76.9	75.5	79.7	74.3	73.7	76.5	—	66.5	65.4	65.5	66.4	68.4	-2.5
	27–30	64.8	64.9	66.3	61.5	69.0	66.2	70.7	65.6	67.1	74.0	72.2	70.9	74.9	72.9	74.7	—	75.1	76.3	71.3	75.9	72.7	-3.2
	35	49.1	48.4	52.9	51.6	53.7	55.5	55.2	56.1	55.7	53.2	56.9	61.9	58.7	62.1	66.1	64.2	66.5	65.4	65.5	66.4	68.4	+2.0
	40	42.5	44.7	44.8	47.2	43.3	47.2	45.9	50.3	48.9	54.5	54.7	54.3	55.9	56.6	53.6	55.2	57.6	60.2	62.6	64.5	63.6	-0.9
	45	—	—	—	38.9	41.7	42.4	45.1	46.6	47.0	45.9	46.7	47.2	53.5	52.0	56.1	57.8	55.1	56.5	56.2	57.7	55.5	-2.1
	50	—	—	—	—	—	—	—	—	37.7	39.3	41.9	43.5	45.8	48.2	48.6	48.8	50.0	50.7	50.2	52.7	55.8	+3.1
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	39.1	41.0	42.4	46.9	47.7	47.4	48.3	44.5	-3.8
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.5	40.2	42.3	+2.0
Get drunk at least once a week																							
% saying any [21]	18	79.5	79.6	78.3	77.3	79.0	78.7	77.4	75.5	76.2	76.2	73.5	71.9	68.9	69.9	64.2	58.9	59.0	58.0	55.4	53.9	§	—
	19–22	82.2	81.9	81.5	81.5	80.5	85.1	81.7	84.4	81.3	82.8	81.2	78.3	83.6	77.7	78.2	—	75.6	76.5	72.1	75.1	69.9	-5.2
	23–26	76.5	74.7	81.0	76.4	75.8	80.7	80.9	80.4	79.5	83.0	83.7	83.9	79.7	83.1	85.6	—	81.2	76.1	79.0	77.3	75.3	-2.0
	27–30	64.3	64.7	68.9	66.5	73.8	72.4	74.6	72.0	71.7	78.7	78.2	78.3	80.1	74.4	77.2	—	77.9	79.2	78.9	79.1	78.8	-0.3
	35	46.9	47.6	48.3	47.9	52.0	50.7	52.6	55.0	56.0	56.0	59.2	63.2	62.4	63.9	65.4	68.0	67.8	68.2	66.5	66.3	66.3	0.0
	40	42.2	41.3	42.6	42.9	43.2	48.4	47.2	46.3	48.2	53.7	49.6	48.5	54.9	54.7	53.4	58.0	57.4	58.9	58.7	62.7	63.6	+0.9
	45	—	—	—	41.6	42.2	41.6	40.0	42.7	45.7	45.4	49.1	45.9	50.0	50.5	52.1	52.8	52.3	54.3	57.6	54.2	56.6	+2.4
	50	—	—	—	—	—	—	—	—	40.0	38.3	39.6	42.4	42.5	45.0	45.5	46.7	48.7	47.3	48.4	47.9	52.6	+4.7
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	35.1	35.4	39.2	39.7	38.9	39.9	43.6	42.8	-0.8
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.4	33.3	36.1	+2.7
% saying most or all [13,14,22,23,24]	18	32.4	32.7	28.3	27.1	27.6	28.5	27.7	27.0	25.2	24.4	23.7	23.8	21.2	20.7	18.5	15.5	11.5	12.4	11.6	11.2	§	—
	19–22	28.1	30.2	31.0	29.6	29.0	31.2	32.9	32.0	28.9	31.4	27.7	27.6	27.2	28.1	28.7	—	21.6	25.8	23.0	21.8	20.6	-1.2
	23–26	17.4	19.1	19.2	18.3	24.0	24.0	20.3	22.8	23.1	23.2	24.0	22.6	20.0	23.4	20.2	—	23.5	20.1	24.1	25.1	17.3	-7.8 s
	27–30	9.8	11.7	8.9	13.0	9.4	11.2	13.5	12.2	10.9	17.1	13.7	13.2	13.5	13.2	15.2	—	16.7	17.2	15.8	17.9	16.2	-1.7
	35	4.6	4.8	4.5	5.2	5.3	5.3	5.6	6.1	7.3	5.9	7.4	8.4	6.8	8.3	10.7	10.8	8.6	10.2	9.7	11.1	10.9	-0.2
	40	2.5	2.9	3.8	3.9	3.0	3.6	4.0	3.4	4.8	4.6	4.8	4.8	4.3	4.2	5.7	5.6	5.6	6.7	6.8	6.9	10.6	+3.7 s
	45	—	—	—	3.6	2.7	2.7	3.1	3.7	4.1	3.2	3.2	3.5	4.3	5.1	5.1	5.5	4.2	3.5	5.5	6.7	6.2	-0.5
	50	—	—	—	—	—	—	—	—	3.2	2.7	2.0	2.9	2.5	3.6	4.1	3.6	4.0	3.0	3.7	3.6	4.0	+0.4
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.9	3.2	3.1	2.9	2.5	4.4	3.1	-1.4
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	2.4	2.0	-0.4

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Percentage saying friends use [1]

Q. How many of your friends would you estimate. . .	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Smoke cigarettes																					
% saying any	18	90.6	88.5	88.3	87.0	86.0	87.0	87.8	88.3	87.7	86.5	84.9	85.7	84.4	84.8	88.1	87.9	88.3	89.9	89.5	89.3
	19–22	94.4	94.3	93.4	93.1	91.9	91.6	91.1	90.3	89.3	90.0	86.1	86.1	86.7	86.7	86.1	88.8	89.2	91.3	92.6	91.0
	23–26	—	—	—	—	93.9	95.0	91.6	92.1	89.8	90.1	88.7	89.6	85.6	88.3	86.4	86.8	85.3	85.4	88.7	84.1
	27–30	—	—	—	—	—	—	—	—	92.6	89.8	90.7	90.4	88.0	85.8	84.8	84.9	85.4	84.1	81.1	86.3
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	72.7	71.7	71.7	72.4	71.8	69.9
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	70.2	70.0
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all [25]	18	23.3	22.4	24.1	22.4	19.2	22.8	21.5	21.0	20.2	23.1	21.4	21.8	21.4	25.0	25.3	27.5	30.4	34.4	33.9	31.1
	19–22	31.8	27.6	25.6	25.2	25.6	22.7	21.9	22.5	19.3	19.9	19.2	20.2	20.3	22.2	21.7	28.4	24.0	25.1	28.8	26.8
	23–26	—	—	—	—	25.6	22.7	19.7	18.5	16.5	20.5	16.9	18.1	16.0	15.5	16.6	13.9	17.6	17.0	16.8	17.5
	27–30	—	—	—	—	—	—	—	—	15.8	14.2	11.6	12.9	11.9	14.3	10.9	12.3	10.4	12.1	12.3	13.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	7.2	9.3	7.2	8.0	9.0
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	7.4
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take steroids																					
% saying any	18	—	—	—	—	—	—	—	—	—	—	25.9	24.7	21.5	19.0	18.1	19.5	17.9	18.9	18.3	20.0
	19–22	—	—	—	—	—	—	—	—	—	23.4	21.5	22.2	19.7	20.7	16.8	16.6	16.1	16.8	20.0	20.6
	23–26	—	—	—	—	—	—	—	—	—	15.3	15.0	12.3	14.5	11.1	10.5	12.4	7.3	13.0	9.2	15.0
	27–30	—	—	—	—	—	—	—	—	—	9.9	10.5	7.5	8.0	8.0	8.0	8.0	10.2	9.1	7.0	11.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	—	—	—	—	—	—	—	—	—	—	1.8	1.0	1.7	0.9	1.2	1.3	0.8	1.7	1.4	0.9
	19–22	—	—	—	—	—	—	—	—	—	0.2	0.6	*	0.1	0.4	0.2	0.1	*	0.1	0.3	0.1
	23–26	—	—	—	—	—	—	—	—	—	0.4	*	*	0.2	0.1	0.1	*	*	0.5	*	0.1
	27–30	—	—	—	—	—	—	—	—	—	0.5	*	*	*	0.2	0.1	*	*	*	*	*
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1] 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Smoke cigarettes																							
% saying any	18	87.2	86.8	85.4	83.3	83.7	81.8	81.4	77.1	78.4	79.6	78.0	75.4	74.3	72.1	66.4	60.2	58.4	54.0	50.9	44.4	§	—
	19–22	90.9	90.9	89.7	86.5	89.7	89.3	85.8	86.8	84.4	88.3	81.8	79.4	78.2	77.4	76.5	76.0	70.8	63.9	62.2	59.2	55.4	-3.8
	23–26	86.5	86.7	86.4	86.5	87.0	87.3	85.4	84.1	86.8	85.3	87.7	86.5	83.1	80.3	82.2	79.8	77.5	72.9	74.4	69.1	65.4	-3.8
	27–30	85.1	84.9	87.0	82.8	83.5	81.0	84.4	81.7	82.1	84.1	84.6	83.8	85.2	81.6	84.4	78.6	74.5	77.5	73.8	69.2	69.5	+0.3
	35	70.8	69.2	66.6	67.0	67.7	65.5	67.0	64.8	67.6	62.2	65.4	66.1	66.4	63.2	63.8	65.2	65.0	62.6	60.1	56.7	53.9	-2.7
	40	67.8	64.3	65.5	65.1	62.4	63.8	64.6	59.2	59.7	60.5	57.4	57.4	56.7	59.1	56.2	54.5	54.8	52.4	48.9	53.7	50.4	-3.3
	45	—	—	—	66.1	67.0	62.9	60.9	58.5	56.1	57.7	60.6	58.0	57.4	54.3	56.0	49.7	52.1	50.4	52.5	46.0	47.5	+1.5
	50	—	—	—	—	—	—	—	—	62.1	61.3	59.2	55.9	57.4	54.7	55.4	55.4	52.4	52.8	53.1	47.5	46.5	-1.0
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	56.5	52.4	52.9	48.5	49.4	47.4	47.5	43.4	-4.0
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	47.9	47.1	45.1	-2.0
% saying most or all [25]	18	28.2	25.0	23.0	19.6	20.6	16.7	15.8	16.4	13.9	14.1	14.9	14.1	12.2	11.0	8.1	6.5	5.9	6.6	6.1	4.7	§	—
	19–22	29.4	27.0	25.7	20.2	20.7	20.4	15.2	17.9	12.9	15.3	16.7	13.7	13.6	10.8	9.4	8.9	5.4	5.0	3.8	4.3	3.7	-0.5
	23–26	17.0	15.5	15.1	18.3	19.8	19.6	13.9	14.7	15.0	13.4	15.0	11.1	10.6	13.5	11.4	9.5	5.6	7.9	3.5	6.5	3.6	-2.9
	27–30	11.7	10.2	12.9	12.2	9.2	12.6	12.6	12.7	10.8	12.4	7.9	7.4	10.0	6.8	7.7	5.9	5.8	6.3	6.3	4.4	2.6	-1.8
	35	6.7	8.8	6.6	6.3	6.9	6.0	6.8	5.7	5.9	6.4	6.8	6.2	5.5	4.9	5.8	6.0	4.0	4.5	3.7	3.1	3.4	+0.3
	40	6.8	5.7	5.8	5.9	6.0	7.0	5.1	4.7	4.5	3.9	4.0	4.2	2.9	3.8	4.0	4.1	2.7	3.5	2.6	3.3	2.9	-0.4
	45	—	—	—	5.7	5.9	6.1	5.4	4.5	3.7	4.8	5.2	3.8	3.4	4.6	2.5	3.3	2.8	1.3	1.7	2.1	3.0	0.9
	50	—	—	—	—	—	—	—	—	4.0	4.3	4.2	3.6	2.6	2.3	4.4	3.4	2.6	2.5	2.6	2.3	1.7	-0.5
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	2.2	2.7	1.9	1.7	1.9	2.9	1.9	-1.0
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.3	1.4	+0.1
Take steroids																							
% saying any	18	19.8	21.7	21.6	21.1	22.8	19.1	19.8	20.1	19.4	19.3	16.4	16.0	18.7	17.4	15.7	12.8	15.5	13.7	13.0	11.7	§	—
	19–22	18.9	20.0	19.3	17.1	21.4	20.1	21.0	18.3	14.8	16.8	13.8	15.3	12.6	11.1	16.4	12.7	8.6	9.6	8.4	—	—	—
	23–26	12.2	13.6	14.3	12.9	12.4	11.6	13.4	13.8	13.3	12.8	11.7	13.9	10.0	11.6	12.7	8.7	11.9	10.6	9.2	—	—	—
	27–30	9.3	10.7	6.4	11.6	10.1	7.4	7.5	6.7	6.6	12.0	9.2	8.5	11.6	10.0	9.1	11.0	9.4	10.9	11.2	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
% saying most or all	18	1.9	1.2	1.5	1.5	2.6	1.5	0.9	1.2	1.3	1.5	1.7	1.1	1.8	1.5	1.7	1.0	1.9	1.7	1.5	1.3	§	—
	19–22	0.3	0.7	0.7	0.4	*	0.1	0.3	0.3	0.3	*	0.7	0.6	0.4	0.7	0.5	0.4	*	*	0.8	—	—	—
	23–26	0.3	0.2	0.1	*	0.1	0.3	0.3	*	*	0.7	*	0.1	0.1	0.3	0.1	*	0.9	0.4	*	—	—	—
	27–30	*	*	0.3	*	*	0.1	*	*	*	0.3	*	*	*	*	*	0.2	*	0.4	*	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

	Age Group	Percentage saying friends use [1]																			
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Approximate	18	2,987	3,307	3,303	3,095	2,945	2,971	2,798	2,948	2,961	2,587	2,361	2,339	2,373	2,410	2,337	2,379	2,156	2,292	*2,313*	*2,060*
Weighted N =	19–22	576	592	564	579	543	554	579	572	562	579	556	526	510	468	435	470	469	467	*437*	*426*
	23–26					527	534	546	528	528	506	510	507	516	495	449	456	416	419	*394*	*414*
	27–30									516	507	499	476	478	461	419	450	464	454	*428*	*424*
	35															1,200	1,187	1,187	1,209	*1,067*	*1,071*
	40																			*1,098*	*1,156*
	45																				
	50																				
	55																				
	60																				

(Cont.)

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TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How many of your friends would you estimate. . .	Age Group	Percentage saying friends use [1]																				
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Approximate	18	1,838	1,923	1,968	2,233	2,271	2,266	2,266	2,253	2,125	2,110	2,195	2,208	2,144	1,973	1,920	2,055	1,795	1,955	2,028	1,932	§
Weighted N =	19–22	402	402	375	388	443	395	377	362	375	382	376	353	348	340	315	297	251	269	258	241	266
	23–26	387	403	358	362	411	361	336	340	355	311	359	314	330	328	305	305	272	268	269	274	299
	27–30	363	359	348	369	396	363	350	324	332	309	340	325	333	284	307	260	287	287	306	271	275
	35	1,033	1,005	918	968	985	1,041	953	884	905	974	922	858	877	848	776	741	740	731	676	697	699
	40	1,144	1,119	1,083	945	1,004	975	951	896	924	905	952	877	852	844	919	808	782	819	762	704	683
	45				976	1,074	1,052	1,009	999	904	937	889	887	874	844	825	889	812	773	781	805	761
	50									940	1,009	1,016	974	987	840	891	830	845	793	760	754	884
	55														880	943	933	926	941	788	808	811
	60														880	943	933	926	941	673	693	698

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' — ' indicates data not available. ' * ' indicates a prevalence rate of less than 0.05%.

§ Insufficient data for 2020 estimate.

[1]Answer alternatives were: (1) None, (2) A few, (3) Some, (4) Most, (5) All. The any percentage combines categories (2)–(5). The most or all percentage combines categories (4) and (5).

[2]For the young adult sample, any illicit drug includes all of the drugs listed in this table except cigarettes and alcohol. For the 35-, 40-, 45-, and 50-year-olds, any illicit drug includes marijuana, tranquilizers, crack, cocaine powder, and other illicit drugs.

[3]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

[4]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[5]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

[6]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

[7]No data reported in 2015 due to a printing error in the questionnaire in which this question is asked.

[8]For the estimate of Any Friends' Use of Ecstasy (MDMA, Molly) in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (20.5%) and the new web-push condition (30.0%) of survey administration.

[9]For the estimate of Any Friends' Use of Crack in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (14.5%) and the new web-push condition (6.9%) of survey administration.

[10]For the estimate of Any Friends' Use of Heroin in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (5.6%) and the new web-push condition (0.9%) of survey administration.

[11]For the estimate of Any Friends' Use of Tranquilizers in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (16.5%) and the new web-push condition (7.7%) of survey administration.

[12]For the estimate of Any Friends' Use of Tranquilizers in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (6.0%) and the new web-push condition (11.9%) of survey administration.

[13]For the estimate of Most Friends Get Drunk at Least Once a Week in 2018, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (16.8%) and the new web-push condition (28.7%) of survey administration.

[14]For the estimate of Most Friends Get Drunk at Least Once a Week in 2019, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (10.3%) and the new web-push condition (29.9%) of survey administration.

[15]As indicated, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-3.6, p<.01).

[16]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-5.3, p<.05).

[17]As indicated, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-9.9, p<.01).

[18]As indicated, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+12.4, p<.01).

[19]As indicated, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+12.0, p<.01).

[20]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+13.3, p<.01).

[21]For the estimate of Any Friends Get Drunk Once a Week in 2020, there was a significant difference (p<.05) among those age 35 between the typical mail condition (70.3%) and the new web-push condition (62.7%) of survey administration.

[22]As indicated, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-12.6, p<.01).

[23]For the estimate of Most Friends Get Drunk Once a Week in 2020, there was a significant difference (p<.05) among those age 40 between the typical mail condition (7.7%) and the new web-push condition (12.8%) of survey administration.

(Table continued on next page.)

TABLE 7-2 (cont.)
Trends in Friends' Use of Drugs as Estimated by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

[24]For the estimate of Most Friends Get Drunk Once a Week in 2020, there was a significant difference (p<.01) among those age 45 between the typical mail condition (8.8%) and the new web-push condition (4.1%) of survey administration.

[25]For the estimate of Any Friends' Use of Cigarettes in 2020, there was a significant difference (p<.05) among those age 60 between the typical mail condition (0.3%) and the new web-push condition (2.1%) of survey administration.

[26]In 2020, the question text was changed to include examples of tranquilizers: "Librium, Valium, Xanax, etc." This change likely explains the discontinuity in the 2020 results.

TABLE 7-3
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

Percentage saying exposed to drug [1]

Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Any illicit drug [2]																			
% saying any [15]																			
18	84.3	82.7	81.4	79.4	77.9	77.7	75.5	73.9	71.3	68.6	67.6	64.2	61.3	66.1	70.8	75.3	78.0	78.8	77.2
19–22	80.6	81.0	81.5	76.5	76.3	77.4	74.6	72.7	69.5	61.5	60.8	58.9	58.6	58.4	60.7	66.4	67.2	65.3	69.1
23–26	—	—	—	—	68.9	70.2	68.0	62.4	62.7	58.3	54.6	52.1	48.2	49.9	47.1	54.2	50.3	55.4	50.6
27–30	—	—	—	—	—	—	—	—	52.4	50.2	47.0	39.6	41.7	38.9	45.6	42.4	44.9	41.6	37.5
% saying often exposed																			
18	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7	18.2	18.0	24.0	29.3	32.3	33.8	34.7	33.2
19–22	34.6	34.0	32.1	24.4	24.4	23.7	21.1	18.9	19.9	16.2	16.4	17.6	21.4	16.1	18.1	23.7	20.4	25.3	24.2
23–26	—	—	—	—	20.7	23.3	18.5	17.4	18.2	13.8	13.7	13.3	12.2	11.1	11.1	12.5	12.8	14.3	14.2
27–30	—	—	—	—	—	—	—	—	13.7	12.0	10.8	8.2	10.5	9.0	12.5	8.5	10.1	10.3	8.5
Any illicit drug other than marijuana [2]																			
% saying any																			
18	58.5	62.6	62.5	59.4	59.8	59.3	55.3	51.7	47.8	47.1	45.4	40.0	41.6	42.6	45.3	47.2	49.7	47.9	47.3
19–22	56.9	58.4	61.6	54.9	57.1	53.3	53.4	48.5	46.4	36.5	39.4	33.8	37.1	29.4	33.9	36.8	36.5	39.4	40.0
23–26	—	—	—	—	51.5	51.9	51.5	43.6	42.9	36.8	34.0	30.0	27.3	27.8	24.9	26.8	23.2	25.6	27.1
27–30	—	—	—	—	—	—	—	—	35.8	33.7	31.5	25.8	26.6	24.2	25.8	21.1	21.8	21.4	15.4
% saying often exposed [8,16]																			
18	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2	7.9	7.5	9.6	9.4	11.1	12.1	11.7	9.9
19–22	11.8	15.6	13.5	11.1	10.7	10.2	8.2	8.1	7.5	6.7	4.5	4.4	5.5	4.1	5.1	7.7	3.9	7.6	7.0
23–26	—	—	—	—	9.0	10.4	9.3	8.5	6.7	5.0	5.1	3.5	2.6	3.0	2.2	3.5	3.4	3.1	3.1
27–30	—	—	—	—	—	—	—	—	6.0	4.7	4.1	3.2	3.7	2.4	3.4	2.9	3.4	3.2	1.0
Marijuana																			
% saying any [17]																			
18	82.0	80.2	77.9	76.2	74.4	73.5	72.0	70.4	67.0	64.8	63.4	59.6	56.8	61.0	67.2	72.7	75.6	76.8	75.5
19–22	79.8	79.8	78.7	72.7	74.1	75.5	72.4	70.5	66.3	59.3	57.5	55.0	56.4	55.4	56.8	64.0	64.8	63.4	67.1
23–26	—	—	—	—	65.3	66.0	64.1	59.0	57.6	55.0	50.6	47.9	44.6	45.9	44.4	51.0	47.8	53.1	48.8
27–30	—	—	—	—	—	—	—	—	49.1	47.4	42.1	36.0	38.2	35.3	41.9	38.3	41.8	39.1	35.7
% saying often exposed																			
18	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8	16.0	15.6	20.9	27.6	30.7	31.8	32.9	31.4
19–22	32.6	30.5	30.3	21.1	21.9	20.3	18.6	16.4	18.3	14.2	14.7	15.9	19.9	14.7	17.0	22.1	20.3	23.7	22.8
23–26	—	—	—	—	17.5	20.6	14.6	14.8	15.6	11.6	11.2	11.6	10.9	10.4	10.4	11.1	11.5	12.9	13.6
27–30	—	—	—	—	—	—	—	—	10.9	9.8	8.5	6.7	8.9	7.6	10.7	7.4	9.1	8.9	8.1
LSD																			
% saying any																			
18	17.2	17.4	16.1	13.8	12.5	13.2	13.1	12.9	13.4	15.0	14.9	15.7	17.8	21.0	24.2	26.1	27.6	25.9	23.1
19–22	17.4	15.8	16.0	13.5	12.8	12.7	10.8	10.9	12.0	12.0	12.1	13.1	19.3	13.4	16.5	18.6	20.7	22.3	21.0
23–26	—	—	—	—	8.3	9.3	8.8	7.3	6.3	6.7	8.4	8.6	8.8	7.8	8.4	9.9	8.6	7.6	9.8
27–30	—	—	—	—	—	—	—	—	3.6	3.2	3.3	3.6	3.9	4.9	5.3	5.5	4.3	3.9	3.2
% saying often exposed																			
18	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6	2.9	3.0	3.9	4.2	6.1	4.7	5.1	3.2
19–22	1.4	1.5	1.4	0.6	0.8	0.7	0.5	1.2	0.6	1.1	1.2	1.0	2.0	1.1	0.4	3.6	1.4	1.8	2.0
23–26	—	—	—	—	0.3	0.4	0.4	0.7	0.6	0.3	0.5	0.2	0.8	0.3	0.5	0.5	0.4	0.2	0.1
27–30	—	—	—	—	—	—	—	—	0.3	0.2	0.5	0.2	0.2	0.5	0.5	0.2	0.2	*	*
Other hallucinogens [3]																			
% saying any [10,18]																			
18	20.4	17.6	16.8	13.1	12.7	12.5	11.8	10.0	9.0	8.8	9.4	9.4	9.7	12.1	14.0	15.8	16.6	17.8	15.9
19–22	18.3	16.3	16.3	12.5	10.5	11.0	9.2	9.1	7.7	8.4	8.3	8.9	10.6	6.7	8.3	12.8	13.1	15.0	15.0
23–26	—	—	—	—	8.4	8.9	9.1	6.0	5.1	4.8	5.7	5.5	5.1	5.7	5.2	5.5	6.9	5.6	8.7
27–30	—	—	—	—	—	—	—	—	5.0	3.4	3.4	3.4	2.1	3.7	3.4	4.2	3.2	2.9	2.6
% saying often exposed																			
18	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2	1.3	1.1	1.9	2.3	2.5	2.7	2.8	1.7
19–22	1.1	0.9	0.9	0.7	0.8	0.8	0.2	0.8	0.3	0.4	0.4	0.5	0.7	0.4	0.2	1.6	0.7	0.7	0.5
23–26	—	—	—	—	0.1	0.3	0.5	0.6	0.8	0.1	0.4	0.4	*	0.2	0.4	0.3	0.3	0.2	*
27–30	—	—	—	—	—	—	—	—	0.2	0.4	0.5	0.3	0.1	0.5	0.2	0.3	0.2	0.5	*

(Table continued on next page.)

TABLE 7-3 (cont.)
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

Percentage saying exposed to drug [1]

Age Group	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Any illicit drug [2]																							
% saying any [15]																							
18	77.9	76.0	76.5	76.5	73.6	74.3	73.0	73.7	70.8	71.9	74.1	76.0	76.6	76.4	75.4	75.2	75.4	75.1	74.8	72.7	75.4	§	—
19–22	65.8	64.7	69.7	65.7	68.0	67.6	68.8	67.1	67.4	66.2	69.8	66.0	68.3	70.4	72.1	73.6	72.5	73.1	72.3	76.4	78.7	73.9	-4.8
23–26	50.5	55.1	56.4	56.5	57.0	53.5	53.9	56.7	58.3	56.3	57.7	56.3	62.6	67.0	65.2	65.1	68.2	68.9	73.9	74.2	73.1	75.4	+2.2
27–30	41.1	40.8	42.2	47.0	46.7	43.3	45.7	48.4	44.1	48.7	42.5	49.3	51.6	58.9	57.2	57.1	56.7	58.6	69.0	66.5	75.5	63.5	-12.0 ss
% saying often exposed																							
18	35.6	32.6	33.6	32.6	31.8	30.4	29.9	29.7	27.8	28.6	31.4	33.2	34.6	34.9	32.3	31.3	32.5	33.1	32.8	30.8	33.5	§	—
19–22	24.0	21.3	26.1	25.2	26.5	26.8	25.2	24.2	22.8	20.1	23.7	26.5	24.8	27.3	24.6	29.8	26.2	32.1	28.0	35.5	37.4	33.8	-3.5
23–26	15.0	15.9	16.4	15.9	17.8	15.1	18.7	14.9	18.9	15.4	14.9	18.8	19.4	21.2	20.8	20.1	23.2	23.3	22.9	25.4	29.7	28.0	-1.6
27–30	9.6	9.4	10.4	13.8	13.9	10.3	14.5	13.2	9.7	9.7	12.1	13.2	13.6	15.7	18.5	16.1	18.9	19.8	21.1	24.7	31.5	28.6	-2.9
Any illicit drug other than marijuana [2]																							
% saying any																							
18	46.5	47.2	49.9	49.3	46.3	48.3	45.9	45.4	45.4	43.8	44.3	47.2	46.6	45.0	44.2	41.0	44.3	43.8	41.7	40.1	38.1	§	—
19–22	36.4	38.1	39.2	38.0	40.2	40.9	41.1	38.5	42.7	38.2	37.1	38.5	38.5	41.8	38.9	44.0	42.3	49.3	44.2	46.6	44.1	43.2	-0.8
23–26	28.0	31.0	31.4	31.5	32.2	32.6	32.3	34.5	33.1	31.3	33.0	34.8	39.9	37.8	37.4	33.9	38.6	38.5	39.4	46.4	43.2	43.4	+0.2
27–30	19.5	17.2	22.2	23.1	26.1	23.2	27.1	27.4	24.8	27.7	22.8	29.3	33.4	35.2	34.4	30.1	35.9	31.6	37.1	35.3	41.0	37.1	-3.9
% saying often exposed [8,16]																							
18	11.7	10.5	11.9	12.6	10.8	11.4	10.6	11.4	10.8	8.2	9.4	10.2	11.5	11.6	9.3	9.7	9.2	10.3	10.7	7.5	7.4	§	—
19–22	4.8	6.4	7.8	8.6	5.2	7.9	8.0	6.7	6.9	6.6	6.8	6.6	6.9	10.1	8.1	9.4	7.0	9.6	7.5	8.0	7.4	7.0	-0.5
23–26	4.3	3.5	3.4	5.0	5.4	5.4	4.0	5.4	6.7	5.4	3.8	6.4	6.3	7.6	5.8	7.0	5.8	8.1	6.6	7.5	7.0	6.2	-0.8
27–30	2.5	1.6	3.7	4.7	4.9	2.4	5.6	4.0	3.4	2.3	3.0	4.8	4.2	4.5	4.8	4.9	6.6	6.0	4.4	6.6	7.8	3.1	-4.6 s
Marijuana																							
% saying any [17]																							
18	75.8	73.8	74.9	74.2	71.4	72.2	70.8	71.4	68.4	69.8	71.8	74.2	74.6	75.1	73.7	73.4	73.2	73.1	73.5	70.1	73.7	§	—
19–22	63.5	63.9	68.0	64.6	64.8	65.1	66.8	65.4	66.3	64.3	67.5	64.9	65.7	67.6	69.0	71.1	70.3	71.9	70.6	76.1	78.3	72.8	-5.5
23–26	48.1	51.8	54.2	53.5	54.4	50.6	49.7	51.9	53.3	54.0	55.5	54.0	57.9	63.9	63.4	61.1	63.6	66.7	70.9	71.8	73.0	74.7	+1.7
27–30	38.7	38.8	37.0	44.6	44.1	40.4	42.4	44.1	40.7	44.8	39.8	43.5	46.1	56.0	52.3	54.4	53.3	58.1	67.4	65.1	73.0	62.0	-11.0 ss
% saying often exposed																							
18	34.4	30.3	30.8	30.7	30.4	28.0	27.0	27.8	25.1	27.0	29.3	31.3	32.3	32.2	30.6	29.2	30.5	31.2	30.4	28.0	32.0	§	—
19–22	23.0	20.4	24.5	24.8	24.2	24.5	23.6	23.1	20.1	18.3	22.6	25.2	22.9	24.2	22.6	28.2	25.7	30.1	26.7	34.3	35.8	32.2	-3.6
23–26	13.2	15.2	15.6	14.9	16.2	13.7	17.8	12.5	16.2	13.7	13.5	17.0	18.0	19.7	18.3	18.8	21.2	21.5	21.0	23.6	27.6	25.7	-1.8
27–30	8.8	8.6	8.4	11.7	11.7	9.6	12.2	11.5	8.2	8.5	12.3	10.8	10.9	13.9	16.0	14.7	16.5	17.7	20.4	22.3	29.7	28.1	-1.6
LSD																							
% saying any																							
18	23.6	22.0	21.6	17.2	14.2	12.4	10.8	11.6	12.4	12.1	11.9	14.1	13.5	13.0	13.8	12.9	15.7	15.5	17.4	15.4	15.1	§	—
19–22	20.1	15.9	15.2	13.6	10.0	8.5	7.2	10.4	6.3	9.2	9.1	9.7	10.1	12.2	10.0	13.1	13.4	19.3	15.5	14.3	19.1	22.6	+3.6
23–26	9.4	9.8	11.1	9.3	5.5	4.4	4.7	5.6	4.5	4.8	3.7	5.7	8.9	9.6	8.3	7.6	6.1	10.3	11.4	10.8	18.3	17.9	-0.4
27–30	3.7	3.2	4.3	4.8	3.0	4.7	4.0	3.4	3.9	1.7	3.8	4.2	4.1	4.2	4.7	4.6	7.7	6.2	9.8	7.6	9.7	11.8	+2.1
% saying often exposed																							
18	4.1	3.3	2.8	2.6	1.8	1.6	1.5	1.9	1.7	0.8	1.3	1.4	1.4	1.6	1.5	1.5	1.9	2.1	2.4	2.0	1.9	§	—
19–22	1.7	1.4	2.4	0.9	0.2	0.1	0.7	0.7	0.3	0.7	0.3	0.1	0.2	0.6	0.9	0.4	0.9	1.0	0.7	1.0	1.2	2.0	+0.8
23–26	0.3	0.2	*	0.3	0.3	*	0.3	*	0.5	0.6	*	0.6	0.3	1.4	0.1	0.8	0.1	0.8	0.2	0.9	0.9	1.3	+0.4
27–30	0.1	*	*	*	0.3	0.3	0.6	*	0.1	*	0.3	0.5	0.5	0.6	1.0	0.3	0.9	0.2	0.6	0.2	0.6	*	-0.6
Other hallucinogens [3]																							
% saying any [10,18]																							
18	17.7	16.3	28.1	26.4	25.8	24.8	24.3	23.8	23.5	23.6	22.0	25.0	23.8	22.7	22.3	19.8	20.4	18.6	17.5	15.5	15.7	§	—
19–22	12.4	11.8	22.8	23.4	18.9	18.7	19.5	17.8	20.2	17.5	17.5	19.6	17.5	17.0	14.6	19.1	17.1	18.7	13.1	17.2	16.2	24.1	+8.0 s
23–26	5.8	8.9	14.8	14.7	11.9	10.1	11.3	10.3	9.8	9.8	9.9	12.5	13.8	13.6	14.6	10.3	11.8	11.4	12.2	14.7	17.3	18.2	+0.9
27–30	3.0	3.0	6.4	7.7	6.3	7.9	8.8	7.8	6.8	5.2	7.5	5.0	8.1	7.8	7.2	8.3	12.0	5.9	13.4	10.5	14.0	15.3	+1.3
% saying often exposed																							
18	2.7	2.1	3.6	4.5	3.2	3.2	2.6	4.1	3.0	1.9	2.7	2.2	2.5	2.7	2.4	1.9	1.9	2.4	2.5	1.8	1.6	§	—
19–22	0.6	0.8	2.6	2.4	0.4	0.7	1.2	0.7	0.7	0.9	0.9	1.1	1.3	0.8	*	0.9	0.6	0.6	1.1	1.3	0.8	1.1	+0.2
23–26	*	0.4	0.2	0.4	*	*	0.5	*	0.6	0.7	0.1	0.7	0.3	1.1	0.3	1.1	*	0.8	0.2	0.9	1.3	2.4	+1.0
27–30	0.1	*	0.4	*	*	0.3	0.6	*	0.4	0.3	0.3	0.7	0.5	0.8	0.9	0.9	1.2	0.2	0.6	0.2	0.8	0.4	-0.5

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(List of drugs continued.)

TABLE 7-3 (cont.)
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

Percentage saying exposed to drug [1]

Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Cocaine																			
% saying any [11]																			
18	37.7	36.3	34.9	33.3	35.6	38.3	37.4	34.9	30.2	30.2	27.7	21.3	19.8	19.2	18.8	21.6	25.0	25.6	26.6
19–22	37.6	42.3	43.6	36.6	38.9	39.4	41.5	37.0	36.2	26.6	24.0	18.5	19.8	13.5	14.7	14.1	19.3	18.8	21.6
23–26	—	—	—	—	38.5	40.6	42.0	34.5	35.9	28.0	24.0	19.9	16.7	14.6	14.3	14.1	12.5	14.0	16.0
27–30	—	—	—	—	—	—	—	—	28.9	28.3	24.2	18.6	19.4	16.6	14.3	11.4	12.1	11.4	8.6
% saying often exposed [9]																			
18	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7	3.4	2.7	2.9	2.5	3.2	4.0	4.2	3.7
19–22	5.8	7.6	6.5	4.3	6.5	7.0	5.4	5.2	4.8	4.3	2.2	1.6	1.7	1.7	1.8	1.7	1.2	2.4	3.2
23–26	—	—	—	—	5.3	8.5	7.0	6.0	5.4	3.5	2.5	1.7	1.4	1.7	1.0	1.7	1.3	1.8	1.5
27–30	—	—	—	—	—	—	—	—	4.4	3.9	2.9	2.2	2.0	1.2	1.5	1.4	1.9	1.6	0.8
Heroin																			
% saying any [19]																			
18	7.4	6.6	7.1	5.1	6.0	5.5	6.0	5.8	5.7	6.5	5.4	5.1	5.4	5.7	7.3	7.9	8.6	9.1	8.7
19–22	4.4	3.3	4.1	2.9	3.1	4.8	2.9	2.9	2.9	2.9	2.5	3.0	2.7	2.0	3.7	3.8	3.6	3.7	6.4
23–26	—	—	—	—	2.3	3.3	3.2	2.9	1.7	2.3	2.3	1.8	1.7	1.5	1.9	2.8	2.9	2.7	3.1
27–30	—	—	—	—	—	—	—	—	2.1	1.4	1.5	0.9	1.0	2.0	2.0	1.7	1.5	1.3	1.4
% saying often exposed																			
18	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5	0.9	0.7	1.1	0.7	1.2	1.6	1.2	0.9
19–22	0.2	0.3	0.3	0.1	0.2	0.5	0.2	0.1	0.2	0.1	0.2	0.4	0.6	0.4	0.6	1.2	0.2	0.4	0.7
23–26	—	—	—	—	*	0.7	0.3	0.6	0.4	0.3	0.6	0.3	*	*	*	0.2	0.2	0.3	0.5
27–30	—	—	—	—	—	—	—	—	0.3	0.3	0.5	0.2	0.2	0.9	0.3	0.6	0.6	*	*
Other narcotics [4]																			
% saying any																			
18	19.6	17.5	18.5	17.3	18.0	18.4	15.6	14.4	14.8	13.8	14.2	11.3	11.1	12.4	14.9	15.5	18.5	20.4	20.7
19–22	14.4	14.4	15.2	10.9	12.4	13.7	9.8	12.2	11.2	9.0	9.4	9.2	8.5	6.8	10.1	12.1	11.5	14.5	15.3
23–26	—	—	—	—	9.0	12.3	9.2	9.7	7.4	8.0	5.9	8.3	7.0	4.6	6.9	7.8	7.4	6.5	8.1
27–30	—	—	—	—	—	—	—	—	6.5	6.5	5.8	5.5	3.7	5.6	5.9	5.7	4.7	4.9	3.6
% saying often exposed [20]																			
18	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.6	1.4	1.3	1.7	1.7	2.1	3.4	2.5	2.8
19–22	0.7	0.5	0.5	0.9	0.7	1.0	0.5	0.4	0.9	0.3	0.2	1.0	0.9	0.6	0.8	1.4	0.7	1.5	1.7
23–26	—	—	—	—	0.4	0.5	1.3	0.8	0.8	0.5	1.6	0.7	0.1	0.3	0.1	0.1	0.3	0.7	0.5
27–30	—	—	—	—	—	—	—	—	0.7	0.5	1.0	0.3	0.8	1.2	0.8	0.8	0.7	0.5	*
Amphetamines [5]																			
% saying any [12]																			
18	40.8	49.5	50.2	46.1	45.0	41.0	36.5	31.7	27.9	27.4	28.3	23.6	24.5	24.7	28.2	28.1	31.5	31.0	29.9
19–22	42.3	48.6	48.4	39.7	41.3	35.9	31.3	26.7	21.2	18.5	19.5	17.4	21.3	15.1	20.3	21.0	22.3	24.6	24.8
23–26	—	—	—	—	32.3	30.5	29.1	20.9	18.8	14.0	16.8	14.6	11.8	13.2	11.2	13.0	11.1	11.7	14.6
27–30	—	—	—	—	—	—	—	—	15.6	14.3	13.5	10.7	11.4	11.3	11.0	10.6	7.6	9.1	6.6
% saying often exposed [21]																			
18	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1	3.1	3.0	3.9	4.1	4.5	5.6	5.2	4.7
19–22	7.4	9.9	7.7	6.9	5.4	4.4	3.1	3.3	2.2	1.5	1.1	1.9	2.6	1.5	3.3	5.0	1.3	4.1	2.9
23–26	—	—	—	—	3.9	3.2	2.2	3.3	1.9	0.7	2.0	1.3	0.2	0.8	0.9	1.6	1.3	1.4	2.2
27–30	—	—	—	—	—	—	—	—	2.0	2.0	1.2	0.8	0.8	1.3	0.7	1.6	1.8	1.0	0.2

(Table continued on next page.)

TABLE 7-3 (cont.)
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

Percentage saying exposed to drug [1]

Age Group	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Cocaine																							
% saying any [11]																							
18	25.8	24.2	24.5	24.9	24.8	24.4	25.7	28.2	25.2	24.1	20.0	20.0	19.3	17.4	16.7	17.6	18.0	18.2	17.6	17.1	17.1	§	—
19–22	18.5	19.1	20.6	22.5	18.4	23.6	22.7	22.9	22.5	22.7	18.6	17.8	15.5	18.9	11.5	17.6	18.0	28.7	18.6	25.4	24.5	22.9	-1.6
23–26	18.2	16.4	16.9	18.3	17.4	18.7	19.2	19.3	19.0	18.2	15.3	14.7	20.5	17.2	14.4	15.6	15.7	20.0	20.0	24.0	24.9	25.9	+1.0
27–30	11.6	10.2	11.6	12.2	12.6	13.0	15.8	16.0	14.1	14.8	13.2	11.4	13.1	14.2	15.0	12.1	17.8	15.4	19.3	20.3	19.8	21.5	+1.7
% saying often exposed [9]																							
18	4.6	4.6	4.5	5.3	5.0	4.7	4.2	5.3	4.6	3.6	2.6	2.1	2.3	2.8	2.1	2.2	2.3	3.0	3.0	1.7	2.4	§	—
19–22	1.4	3.8	3.0	4.1	1.6	2.6	4.0	2.6	1.8	2.6	2.6	0.7	1.2	3.2	1.7	2.4	1.2	1.8	1.5	4.1	1.9	2.3	+0.4
23–26	2.2	1.8	1.0	2.5	1.9	2.9	1.8	2.0	3.2	1.0	1.0	1.2	1.4	2.0	1.0	2.1	0.8	3.4	3.2	3.3	3.5	2.6	-0.9
27–30	1.5	0.3	1.6	2.4	1.7	0.7	2.4	0.8	0.7	1.4	0.8	0.1	1.4	0.8	1.6	1.8	2.0	2.2	1.9	1.7	1.8	1.4	-0.3
Heroin																							
% saying any [19]																							
18	8.1	9.1	8.7	8.3	7.3	6.6	7.3	9.0	8.6	6.8	7.3	8.3	6.4	6.0	6.6	5.2	5.6	5.3	6.4	5.2	4.9	§	—
19–22	3.2	5.2	3.2	5.3	3.4	3.0	3.2	3.7	3.3	4.8	4.3	3.2	4.0	3.6	3.4	3.6	3.2	2.9	4.4	3.4	2.3	6.1	+3.8 s
23–26	2.9	2.6	2.4	3.8	2.0	3.1	2.6	3.5	3.6	1.8	1.8	4.1	4.8	2.4	2.3	2.4	3.9	5.1	5.2	4.7	4.0	2.9	-1.1
27–30	1.9	1.9	2.3	2.7	1.3	3.2	2.9	2.3	3.0	2.2	1.9	1.5	3.5	3.0	3.9	5.3	2.6	3.4	5.5	3.4	4.5	3.8	-0.8
% saying often exposed																							
18	1.3	1.5	0.7	1.3	1.2	1.2	0.8	1.7	1.1	0.8	0.8	1.0	1.1	1.3	0.7	0.7	1.2	0.9	1.1	0.6	0.6	§	—
19–22	0.8	0.7	0.8	0.6	0.2	*	0.8	0.1	*	0.6	*	0.4	0.7	1.0	1.0	0.9	*	*	0.5	0.6	0.4	0.7	+0.3
23–26	1.0	*	*	0.8	0.5	0.5	0.3	0.6	0.3	*	*	1.2	0.3	0.2	*	0.3	1.1	0.8	0.6	0.8	0.5	0.5	0.0
27–30	0.2	*	*	0.7	0.3	*	0.4	0.3	0.4	0.3	0.6	*	1.2	0.7	1.3	0.5	1.0	0.9	1.0	0.7	0.6	0.2	-0.3
Other narcotics [4]																							
% saying any																							
18	21.9	21.1	21.6	22.5	21.8	20.3	19.0	18.9	18.9	16.3	16.3	30.3	27.5	27.1	22.9	20.9	21.0	21.0	19.9	18.1	14.4	§	—
19–22	13.9	17.0	18.3	18.7	13.6	14.5	16.8	15.3	12.5	13.2	14.2	27.5	23.7	25.2	19.5	21.3	17.8	19.9	15.3	16.9	12.1	11.5	-0.5
23–26	9.4	10.9	12.2	12.0	12.6	12.6	12.4	13.0	14.4	11.2	13.2	25.9	25.3	24.1	22.5	17.8	19.6	20.4	16.7	15.6	12.6	10.1	-2.5
27–30	5.2	6.5	9.0	7.9	9.5	8.8	11.6	10.6	9.2	9.1	9.7	23.4	22.7	23.6	24.5	19.4	19.1	14.8	22.8	16.5	16.1	11.0	-5.1
% saying often exposed [20]																							
18	3.9	2.9	3.0	3.8	3.0	3.3	2.6	3.4	3.4	2.1	2.7	5.3	5.6	5.7	3.8	3.6	2.8	3.8	3.4	1.8	1.3	§	—
19–22	1.1	2.4	1.6	3.0	1.2	0.8	2.4	1.9	1.7	1.9	1.6	3.3	2.1	1.6	2.2	2.0	1.7	0.4	0.7	1.5	0.9	0.8	-0.1
23–26	1.1	0.7	1.0	0.9	1.6	1.4	1.3	1.1	1.8	1.0	1.3	4.4	2.5	3.6	1.5	2.3	2.0	4.0	1.6	1.4	*	1.2	+1.2
27–30	0.2	1.1	1.0	0.7	1.2	0.1	1.7	0.7	0.8	0.4	1.4	3.0	3.1	2.3	3.1	2.6	2.3	2.6	1.4	0.9	3.5	0.2	-3.3 ss
Amphetamines [5]																							
% saying any [12]																							
18	30.1	29.5	31.5	30.6	27.4	27.2	26.4	26.6	23.8	23.3	23.8	23.6	28.0	26.2	25.4	23.7	25.7	24.3	22.4	21.9	21.0	§	—
19–22	21.2	24.8	23.3	25.5	21.6	23.7	22.2	22.7	22.8	17.6	18.0	19.4	26.0	27.4	26.2	30.4	30.3	34.2	26.3	31.4	29.5	26.6	-2.9
23–26	12.3	18.5	18.2	17.9	15.4	18.8	15.6	18.7	16.6	13.7	15.3	15.8	24.2	23.1	21.4	22.0	23.5	25.8	23.0	32.2	28.8	30.8	+2.0
27–30	10.4	7.4	11.1	11.5	12.2	11.4	12.2	14.1	10.0	10.3	10.3	12.6	16.4	19.0	19.1	17.7	23.1	19.9	20.3	19.1	23.7	20.7	-3.0
% saying often exposed [21]																							
18	6.3	4.4	6.0	6.4	4.9	5.3	4.1	5.6	4.3	3.0	4.3	3.3	6.1	5.7	5.3	5.7	5.2	5.0	5.0	3.3	4.0	§	—
19–22	2.2	2.4	2.6	5.6	1.7	4.1	3.1	2.9	2.3	2.1	3.0	3.9	3.3	5.5	3.7	6.8	5.4	8.2	4.9	4.3	5.4	4.0	-1.5
23–26	1.7	1.4	2.2	0.7	1.3	1.7	1.6	2.6	1.6	1.8	1.1	1.6	3.1	4.1	3.2	3.6	2.3	3.6	3.0	4.6	4.8	4.0	-0.8
27–30	1.1	0.4	0.6	1.5	1.0	1.2	1.0	0.8	1.1	0.3	0.7	0.6	1.7	3.0	2.7	2.0	3.5	2.7	1.8	3.1	3.6	0.9	-2.7 s

(List of drugs continued.)

TABLE 7-3 (cont.)
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

Percentage saying exposed to drug [1]

Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Sedatives/barbiturates [6]																			
% saying any [22,23]																			
18	25.2	25.9	25.7	22.5	21.2	18.9	15.8	13.1	12.4	11.8	13.3	10.0	10.2	11.9	13.0	14.5	15.5	16.1	16.1
19–22	25.6	23.1	21.8	18.3	15.7	14.7	12.8	12.0	8.2	8.3	6.5	7.9	7.3	7.2	7.4	10.1	8.8	11.7	13.4
23–26	—	—	—	—	16.1	13.1	11.0	7.1	7.1	6.6	6.9	5.9	6.5	3.8	4.2	5.7	6.6	4.9	8.5
27–30	—	—	—	—	—	—	—	—	8.0	6.8	5.9	5.4	5.2	5.7	4.5	5.2	3.5	3.8	2.7
% saying often exposed																			
18	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7	1.2	1.1	1.6	1.7	2.0	2.9	2.5	2.7
19–22	2.5	2.8	1.1	1.4	0.7	1.3	0.5	0.7	0.7	0.3	0.7	0.4	0.7	0.7	1.3	1.3	0.4	0.9	1.4
23–26	—	—	—	—	0.7	0.9	1.7	0.8	0.6	0.3	1.1	0.3	0.3	*	*	0.2	0.3	0.8	0.5
27–30	—	—	—	—	—	—	—	—	0.7	0.4	0.6	0.2	0.4	1.2	0.2	0.6	0.5	0.2	*
Tranquilizers [7,27]																			
% saying any [24,25]																			
18	29.1	29.0	26.6	23.5	23.1	23.4	19.6	18.4	18.2	15.1	16.3	14.2	12.7	13.8	16.5	15.7	17.9	18.9	17.3
19–22	29.6	26.9	28.5	19.5	21.2	19.5	16.4	18.5	13.8	12.0	12.7	12.6	11.0	10.0	12.0	11.8	10.7	15.6	16.9
23–26	—	—	—	—	23.1	21.0	16.9	15.9	13.4	12.9	12.0	10.4	9.7	10.9	9.8	10.3	10.1	9.4	10.9
27–30	—	—	—	—	—	—	—	—	15.0	11.6	11.1	9.7	10.3	10.4	9.0	11.2	9.6	9.6	6.1
% saying often exposed [13]																			
18	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9	1.4	1.9	1.7	1.8	2.3	3.5	3.2	2.8
19–22	3.2	2.6	1.8	2.1	1.5	1.7	0.9	1.1	1.8	1.0	1.1	1.1	1.5	1.1	1.3	1.5	0.5	1.3	1.6
23–26	—	—	—	—	2.0	1.6	2.6	1.8	1.2	0.8	0.5	1.0	0.6	0.7	0.1	1.1	1.5	0.7	1.1
27–30	—	—	—	—	—	—	—	—	1.4	0.3	1.7	0.8	1.3	1.3	1.0	1.1	0.8	1.2	0.2
Alcoholic beverages																			
% saying any [14,26]																			
18	94.7	94.0	94.0	94.0	94.0	94.0	94.1	93.9	93.1	92.3	93.6	91.7	90.6	91.8	90.0	91.2	91.5	91.4	92.2
19–22	94.3	93.8	94.5	93.4	94.2	92.7	93.6	94.4	92.5	91.8	92.4	94.0	93.3	92.9	93.7	93.1	93.7	93.1	91.8
23–26	—	—	—	—	90.3	92.7	91.4	90.6	91.1	92.9	91.3	91.0	91.4	90.3	89.5	91.9	89.6	93.1	89.1
27–30	—	—	—	—	—	—	—	—	87.1	88.4	86.2	87.7	87.3	86.6	86.2	89.3	89.2	86.4	88.4
% saying often exposed																			
18	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1	54.5	53.1	51.9	54.0	54.0	54.5	53.9	54.5
19–22	59.6	61.2	62.5	56.6	59.3	61.8	59.9	61.4	55.4	53.8	56.0	53.9	56.1	56.8	57.0	56.3	52.3	54.2	57.9
23–26	—	—	—	—	52.1	54.8	51.4	53.0	48.1	50.9	49.7	48.4	45.4	45.4	43.3	47.5	44.8	49.8	44.6
27–30	—	—	—	—	—	—	—	—	39.9	39.5	38.7	38.0	39.9	38.1	39.3	38.0	34.7	37.1	36.6
Approximate																			
Weighted N =																			
18	*3,259*	*3,608*	*3,645*	*3,334*	*3,238*	*3,252*	*3,078*	*3,296*	*3,300*	*2,795*	*2,556*	*2,525*	*2,630*	*2,730*	*2,581*	*2,608*	*2,407*	*2,595*	*2,541*
19–22	*582*	*574*	*601*	*569*	*578*	*549*	*591*	*582*	*556*	*567*	*567*	*532*	*528*	*489*	*460*	*464*	*485*	*471*	*445*
23–26					*533*	*532*	*557*	*529*	*531*	*514*	*523*	*494*	*532*	*513*	*471*	*467*	*447*	*424*	*400*
27–30									*522*	*507*	*506*	*478*	*502*	*457*	*425*	*452*	*432*	*455*	*449*

(Table continued on next page.)

TABLE 7-3 (cont.)
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

	Age Group	Percentage saying exposed to drug [1]																						2019–2020 change
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Sedatives/barbiturates [6]																								
% saying any [22,23]	18	17.1	16.3	17.1	17.7	14.8	21.5	20.4	21.3	18.8	16.7	17.6	18.8	16.2	16.0	15.0	13.4	13.5	12.8	11.2	11.4	9.6	§	—
	19–22	11.6	13.1	13.1	16.0	11.9	17.2	17.8	16.0	16.1	15.2	17.3	16.1	12.2	14.8	10.7	14.2	13.1	16.9	9.3	12.9	10.3	8.9	-1.3
	23–26	7.1	9.3	9.0	9.8	7.9	15.9	12.5	14.8	13.1	12.4	12.7	13.4	15.2	14.9	10.6	11.9	11.5	13.3	12.1	12.2	12.1	8.3	-3.8
	27–30	4.1	2.9	5.3	6.0	6.1	9.2	12.4	11.9	10.3	10.1	9.9	11.6	10.4	11.7	10.1	11.8	12.1	10.5	13.1	11.7	13.9	7.8	-6.1 s
% saying often exposed	18	3.8	2.7	2.7	4.6	2.8	4.1	3.7	3.9	3.9	2.1	3.4	2.5	3.1	2.9	2.5	2.3	1.8	2.5	2.3	1.9	1.5	§	—
	19–22	0.9	1.6	1.2	1.8	0.8	1.7	2.1	2.5	1.4	2.2	1.9	0.9	1.2	1.7	1.0	1.5	1.9	1.5	0.9	1.0	1.7	1.8	+0.1
	23–26	0.9	0.7	0.2	0.3	0.4	0.7	1.1	1.1	1.6	1.7	0.7	1.0	1.0	1.5	0.8	1.3	0.5	1.4	0.8	0.8	1.1	0.9	-0.2
	27–30	0.6	0.2	0.9	0.4	0.6	0.4	1.7	0.7	1.3	0.4	1.7	0.9	1.3	1.1	2.0	0.6	1.4	0.2	1.4	1.0	1.5	0.2	-1.3
Tranquilizers [7,27]																								
% saying any [24,25]	18	18.2	17.7	23.8	22.7	21.0	22.1	20.9	21.8	19.3	19.9	20.0	18.2	17.0	17.6	16.4	16.0	19.7	22.2	22.6	20.5	19.2	§	—
	19–22	14.3	18.5	21.3	23.6	20.0	21.9	20.6	23.1	21.4	20.0	19.6	18.1	16.6	19.0	13.3	18.3	16.8	24.4	18.1	20.6	15.7	14.6	-1.1
	23–26	10.8	12.3	16.4	20.1	18.7	19.9	20.1	19.9	18.8	18.4	17.5	21.4	19.6	21.0	19.5	15.5	17.9	19.3	18.0	16.0	17.3	11.8	-5.5
	27–30	8.8	7.6	12.6	13.6	15.3	14.6	18.1	19.2	16.7	16.8	13.5	18.6	16.5	19.5	17.5	16.3	17.4	13.8	23.5	17.5	22.5	11.7	-10.8 sss
% saying often exposed [13]	18	3.7	3.5	4.9	5.8	4.2	4.1	4.5	5.4	4.9	3.7	3.9	2.8	3.4	3.3	3.4	3.4	2.6	4.6	4.7	3.1	1.9	§	—
	19–22	1.5	1.7	3.1	3.6	2.3	2.7	2.7	3.2	3.0	3.2	2.1	1.7	2.9	2.0	1.7	2.3	2.0	2.7	1.8	1.9	1.4	1.3	-0.1
	23–26	1.5	1.7	1.3	2.1	1.6	2.0	1.3	2.6	2.4	3.6	1.5	3.2	2.6	2.5	1.6	1.8	1.2	1.9	3.1	1.1	1.1	1.7	+0.7
	27–30	0.9	0.4	1.6	1.6	1.9	0.8	3.5	2.9	2.6	1.0	2.0	1.7	2.0	2.3	1.8	1.9	3.6	2.0	1.9	1.8	1.8	0.4	-1.5
Alcoholic beverages																								
% saying any [14,26]	18	91.8	90.7	90.8	89.5	88.3	87.6	87.4	87.6	86.5	85.7	86.5	85.2	85.0	85.3	84.8	82.1	80.5	80.4	78.9	78.3	78.4	§	—
	19–22	91.0	93.3	94.3	93.7	93.6	92.5	92.7	92.0	91.8	90.5	91.2	86.5	87.5	85.8	82.8	89.7	85.5	86.9	81.6	83.6	85.5	86.1	+0.6
	23–26	91.5	92.1	90.1	91.9	91.8	92.2	90.0	94.0	94.5	92.0	93.0	91.1	94.2	88.7	88.7	82.7	87.2	86.9	90.2	89.2	86.0	93.4	+7.3 ss
	27–30	88.7	89.8	91.2	89.0	90.0	85.3	92.2	91.8	89.6	94.4	91.0	91.2	92.5	90.5	88.8	85.6	89.3	85.3	83.6	89.4	88.8	86.2	-2.6
% saying often exposed	18	53.5	50.2	52.7	50.8	49.0	48.2	49.1	47.8	46.4	45.4	46.3	45.8	40.7	43.0	41.7	40.3	38.0	37.4	35.4	33.6	35.1	§	—
	19–22	54.7	54.3	53.4	54.9	55.7	54.3	58.9	55.0	60.7	53.9	53.4	48.5	46.0	50.6	45.3	49.5	51.1	53.2	43.2	45.1	50.1	43.8	-6.3
	23–26	45.7	49.6	48.8	46.3	50.5	48.3	46.4	57.1	54.2	49.6	53.8	51.3	52.5	55.6	49.3	44.4	49.3	47.6	52.3	51.1	48.1	52.6	+4.6
	27–30	38.3	34.4	40.0	39.6	40.6	36.8	43.6	47.3	44.3	47.8	45.2	43.0	49.3	50.4	48.1	47.7	47.4	48.7	46.5	44.5	48.2	45.8	-2.4
Approximate Weighted N =	18	*2,312*	*2,153*	*2,147*	*2,162*	*2,454*	*2,456*	*2,469*	*2,469*	*2,448*	*2,332*	*2,274*	*2,434*	*2,372*	*2,299*	*2,150*	*2,075*	*2,177*	*2,018*	*2,086*	*2,200*	*2,086*	*§*	
	19–22	*450*	*415*	*412*	*403*	*396*	*432*	*377*	*378*	*333*	*365*	*368*	*364*	*340*	*356*	*281*	*316*	*264*	*251*	*228*	*271*	*251*	*312*	
	23–26	*398*	*389*	*406*	*345*	*385*	*404*	*374*	*363*	*327*	*333*	*328*	*347*	*308*	*334*	*311*	*308*	*286*	*271*	*237*	*264*	*234*	*307*	
	27–30	*430*	*395*	*369*	*359*	*347*	*370*	*370*	*330*	*356*	*339*	*324*	*336*	*306*	*312*	*301*	*303*	*263*	*259*	*276*	*285*	*260*	*287*	

(Table continued on next page.)

TABLE 7-3 (cont.)
Trends in Direct Exposure to Drug Use
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' — ' indicates data not available. ' * ' indicates a prevalence rate of less than 0.05%.

§ Insufficient data for 2020 estimate.

[1]Answer alternatives were: (1) Not at all, (2) Once or twice, (3) Occasionally, (4) Often. The "any" percentage combines categories (2)–(4).

[2]These estimates were derived from responses to the question for the following drugs: marijuana, LSD, other hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), and tranquilizers.

[3]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

[4]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[5]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

[6]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

[7]In 2001 Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

[8]For the estimate of Often Being Exposed to Use of Any Illicit Drug other than Marijuana in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (9.9%) and the new web-push condition (3.1%) of survey administration.

[9]For the estimate of Often Being Exposed to Use of Cocaine in 2018, there was a significant difference (p<.05) among those age 19-22 between the typical mail condition (1.3%) and the new web-push condition (6.2%) of survey administration.

[10]For the estimate of Any Exposure to Use of Other Hallucinogens in 2019, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (11.3%) and the new web-push condition (22.4%) of survey administration.

[11]For the estimate of Any Exposure to Use of Cocaine in 2019, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (18.5%) and the new web-push condition (30.1%) of survey administration.

[12]For the estimate of Any Exposure to Use of Amphetamines in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (29.4%) and the new web-push condition (18.2%) of survey administration.

[13]For the estimate of Often Being Exposed to Use of Tranquilizers in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (3.7%) and the new web-push condition (0.0%) of survey administration.

[14]For the estimate of Any Exposure to Use of Alcohol in 2019, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (80.5%) and the new web-push condition (90.6%) of survey administration.

[15]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-12.2, p<.05).

[16]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-4.4, p<.05).

[17]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-12.6, p<.05).

[18]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+7.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[19]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+3.1, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[20]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was also significant (-3.4, p<.01).

[21]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-1.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[22]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was significant (-7.4, p<.05).

[23]As noted, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-4.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[24]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was significant (-7.9, p<.05).

[25]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was also significant (-7.3, p<.05).

[26]As noted, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-2.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[27]In 2020, the question text was changed to include examples of tranquilizers: "Librium, Valium, Xanax, etc." This change may have affected the 2020 results.

TABLE 7-4
Trends in Availability of Drugs as Perceived by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?

Percentage saying fairly easy or very easy to get [1]

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Marijuana	18	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4	83.3	82.7	83.0	85.5	88.5	88.7	89.6	90.4	88.9
	19–22	95.6	91.1	92.4	89.7	88.3	89.5	87.2	85.9	87.1	87.1	86.2	86.0	87.8	85.6	87.2	87.9	89.3	90.6	89.9	87.4
	23–26	—	—	—	—	92.5	88.8	88.8	90.3	86.9	88.7	83.3	82.5	83.8	84.6	87.1	86.2	85.3	84.4	87.5	85.9
	27–30	—	—	—	—	—	—	—	—	89.3	86.0	83.1	83.8	80.7	82.8	80.3	83.3	82.6	84.5	82.1	83.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	75.7	75.6	73.0	77.1	76.0	74.9
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	73.4	71.7
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amyl & butyl nitrites	18	—	—	—	—	—	—	—	23.9	25.9	26.8	24.4	22.7	25.9	25.9	26.7	26.0	23.9	23.8	25.1	21.4
	19–22	—	—	—	—	—	—	—	22.8	26.0	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	23.1	28.0	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	26.7	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LSD [6]	18	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7	39.5	44.5	49.2	50.8	53.8	51.3	50.7	48.8	44.7
	19–22	39.6	38.4	35.1	31.8	32.7	29.6	30.5	29.9	33.9	36.4	36.6	37.8	42.5	44.9	43.7	50.5	50.8	47.7	51.1	43.8
	23–26	—	—	—	—	32.7	29.1	30.0	27.5	32.7	32.6	30.2	32.8	33.5	33.4	40.1	41.0	43.6	39.2	40.4	41.2
	27–30	—	—	—	—	—	—	—	—	29.4	29.9	32.3	27.0	30.9	30.5	27.2	35.6	33.6	35.2	32.9	35.7
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.8	32.4	28.4	32.9	31.2	27.7
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.1	31.0
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other hallucinogens [2,7]	18	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3	28.0	29.9	33.5	33.8	35.8	33.9	33.9	35.1	29.5
	19–22	42.1	37.7	33.5	31.0	28.9	28.7	26.3	27.5	28.7	28.1	28.9	26.6	28.3	29.5	28.6	31.5	31.5	33.4	34.1	31.1
	23–26	—	—	—	—	31.8	29.6	26.4	25.6	29.6	28.7	27.0	25.7	27.7	25.3	28.3	29.2	32.6	31.0	32.4	31.5
	27–30	—	—	—	—	—	—	—	—	28.6	29.6	30.8	24.9	24.8	25.4	24.7	29.3	25.9	28.0	25.2	30.3
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PCP	18	—	—	—	—	—	—	—	22.8	24.9	28.9	27.7	27.6	31.7	31.7	31.4	31.0	30.5	30.0	30.7	26.7
	19–22	—	—	—	—	—	—	—	21.7	24.6	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	21.2	27.6	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	24.3	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MDMA (ecstasy, Molly) [11]	18	—	—	—	—	—	—	—	—	—	21.7	22.0	22.1	24.2	28.1	31.2	34.2	36.9	38.8	38.2	40.1
	19–22	—	—	—	—	—	—	—	—	—	—	26.6	24.9	27.1	23.9	27.0	29.3	33.4	35.6	39.4	43.2
	23–26	—	—	—	—	—	—	—	—	—	—	21.4	23.1	26.4	24.0	26.0	27.8	28.7	31.1	30.1	34.9
	27–30	—	—	—	—	—	—	—	—	—	—	27.1	20.8	22.2	22.8	21.9	27.1	29.3	24.3	26.4	30.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Years Cont.)

(Table continued on next page.)

TABLE 7-4 (cont.)
Trends in Availability of Drugs as Perceived by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?

Percentage saying fairly easy or very easy to get [1]

	Age Group	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Marijuana	18	88.5	88.5	87.2	87.1	85.8	85.6	84.9	83.9	83.9	81.1	82.1	82.2	81.6	81.4	81.3	79.5	81.0	79.8	79.7	78.0	§	—
	19–22	89.6	91.7	88.1	87.7	87.3	88.0	86.8	88.4	87.5	83.0	84.2	82.9	85.4	83.9	85.7	88.7	86.5	90.1	84.6	87.2	83.8	-3.3
	23–26	88.4	87.0	89.1	87.2	88.8	87.0	86.8	87.6	85.3	89.4	83.3	88.3	87.0	87.4	87.7	87.4	88.5	88.8	88.1	91.9	91.6	-0.3
	27–30	81.5	84.8	83.6	81.8	86.0	84.6	87.6	87.8	86.4	88.9	84.6	85.6	85.1	86.8	86.4	91.5	86.8	87.0	89.9	89.4	90.4	+1.0
	35	77.1	75.3	76.5	75.1	75.6	73.8	75.1	75.5	76.4	75.7	75.6	80.4	80.5	80.2	84.4	85.5	84.7	84.9	83.5	89.9	85.9	-4.0 s
	40	73.1	70.4	72.1	72.3	68.9	73.6	69.7	71.2	72.5	72.9	73.6	74.6	74.6	78.8	76.0	77.3	80.7	82.3	84.3	86.6	86.5	-0.1
	45	—	—	—	68.5	69.9	70.1	67.9	70.1	68.1	67.9	73.4	69.8	71.8	73.6	76.9	77.2	81.1	82.6	83.5	82.7	81.9	-0.8
	50	—	—	—	—	—	—	—	—	64.4	65.8	67.9	65.8	68.9	70.1	71.9	75.8	74.5	76.6	78.7	81.1	83.6	+2.5
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	68.8	72.1	71.7	72.8	76.7	74.6	78.6	80.1	+1.5
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	71.3	76.1	73.4	-2.6
Amyl & butyl nitrites	18	23.3	22.5	22.3	19.7	20.0	19.7	18.4	18.1	16.9	15.7	—	—	—	—	—	—	—	—	—	—	—	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LSD [6]	18	46.9	44.7	39.6	33.6	33.1	28.6	29.0	28.7	28.5	26.3	25.1	25.1	27.6	24.5	25.9	26.5	28.0	26.3	28.0	28.2	§	—
	19–22	47.1	42.5	37.9	34.1	30.3	27.7	29.0	23.0	19.7	24.2	26.1	24.8	23.2	26.2	22.3	25.8	24.6	33.3	33.3	29.5	35.2	+5.7
	23–26	40.4	38.3	37.2	34.1	38.5	26.5	30.3	25.2	24.1	26.1	24.2	21.4	19.3	22.8	17.2	20.5	17.7	23.0	27.2	32.7	32.6	-0.1
	27–30	35.6	38.3	32.3	33.5	30.0	29.3	29.7	26.8	28.1	22.5	25.2	26.6	19.1	21.7	21.1	15.5	20.4	17.9	22.1	22.6	28.4	+5.8
	35	32.2	28.7	29.1	29.8	25.6	24.0	28.7	26.6	26.4	26.9	25.5	24.0	23.0	24.1	22.2	19.3	20.8	18.5	21.4	—	—	—
	40	28.5	25.7	27.4	25.0	24.4	24.3	23.9	21.5	25.1	22.2	23.3	22.6	21.6	20.1	23.0	20.6	21.4	18.8	22.3	—	—	—
	45	—	—	—	24.2	27.0	25.4	23.7	23.6	21.1	19.4	23.6	21.3	18.9	23.4	21.2	17.9	19.7	21.6	21.8	—	—	—
	50	—	—	—	—	—	—	—	—	19.0	21.9	18.6	20.3	18.1	17.1	17.7	19.7	19.5	17.3	22.6	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other hallucinogens [2,7]	18	34.5	48.5	47.7	47.2	49.4	45.0	43.9	43.7	42.8	40.5	39.5	38.3	37.8	36.6	33.6	31.4	32.5	28.4	28.6	29.7	§	—
	19–22	33.4	45.9	48.8	45.1	46.9	48.5	41.9	39.3	34.7	38.1	39.1	37.5	36.4	34.1	31.2	35.4	30.6	32.4	34.2	37.4	37.7	+0.3
	23–26	28.5	38.3	39.7	39.2	44.4	39.2	41.5	36.8	39.3	39.2	32.3	35.0	32.7	31.8	27.5	31.1	29.6	30.1	32.1	37.3	38.4	+1.1
	27–30	25.0	38.6	33.3	35.6	31.2	30.8	32.1	30.0	36.2	32.0	34.7	33.4	31.4	33.3	31.0	27.3	24.3	27.2	29.4	34.9	36.1	+1.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PCP	18	28.8	27.2	25.8	21.9	24.2	23.2	23.1	21.0	20.6	19.2	18.5	17.2	14.2	15.3	11.0	13.8	12.6	10.6	10.8	11.0	§	—
	19–22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	23–26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	27–30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MDMA (ecstasy, Molly) [11]	18	51.4	61.5	59.1	57.5	47.9	40.3	40.3	40.9	41.9	35.1	36.4	37.1	35.9	35.1	36.1	37.1	32.5	29.3	27.7	24.3	§	—
	19–22	49.9	55.5	59.7	52.1	45.8	43.5	41.2	38.4	34.7	37.1	30.4	37.9	28.3	33.9	32.9	38.6	33.4	32.0	38.7	28.2	26.1	-2.2
	23–26	41.8	51.5	52.9	49.3	51.3	46.4	44.6	42.2	41.5	36.8	35.2	34.0	32.2	35.7	30.9	36.3	30.8	35.0	33.6	38.1	33.1	-5.0
	27–30	35.5	40.6	41.2	41.0	41.1	38.0	40.5	40.7	42.2	38.0	31.2	33.8	32.8	28.6	29.7	33.2	35.8	33.1	31.7	39.2	29.0	-10.2 s
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

↓
(List of drugs continued.)

TABLE 7-4 (cont.)
Trends in Availability of Drugs as Perceived by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?

Percentage saying fairly easy or very easy to get [1]

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cocaine	18	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5	51.0	52.7	48.5	46.6	47.7	48.1	48.5	51.3	47.6
	19–22		56.2	57.1	55.2	56.2	56.9	60.4	65.0	64.9	66.8	61.7	54.3	54.5	49.2	49.9	49.4	44.4	49.7	47.7	52.6
	23–26	—	—	—	—	63.7	67.2	65.8	69.0	71.7	70.0	65.6	58.0	61.1	53.8	54.4	54.7	50.2	46.9	51.8	45.7
	27–30	—	—	—	—	—	—	—	—	68.6	68.2	64.0	60.0	63.1	56.8	53.1	57.0	53.0	50.4	46.9	50.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crack	18	—	—	—	—	—	—	—	41.1	42.1	47.0	42.4	39.9	43.5	43.6	40.5	41.9	40.7	40.6	43.8	41.1
	19–22	—	—	—	—	—	—	—	41.9	47.3	47.2	46.9	42.1	42.1	38.4	41.6	40.7	32.9	39.9	40.0	40.8
	23–26	—	—	—	—	—	—	—	44.5	53.0	49.9	46.9	42.0	42.6	42.5	42.4	42.3	37.9	37.2	38.4	35.0
	27–30	—	—	—	—	—	—	—	—	46.5	46.8	46.8	43.1	45.2	45.8	41.1	44.7	39.9	36.5	33.3	38.8
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	49.6	48.2	43.1	44.3	45.0	41.6
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43.3	44.3
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine powder	18	—	—	—	—	—	—	—	52.9	50.3	53.7	49.0	46.0	48.0	45.4	43.7	43.8	44.4	43.3	45.7	43.7
	19–22	—	—	—	—	—	—	—	58.7	60.2	61.7	56.5	52.5	48.9	45.7	47.8	45.5	41.3	46.0	47.1	45.2
	23–26	—	—	—	—	—	—	—	64.9	69.1	60.1	58.6	53.2	56.4	50.5	49.7	49.6	45.9	43.6	44.4	44.3
	27–30	—	—	—	—	—	—	—	—	63.5	62.8	57.9	55.8	56.8	55.0	48.9	52.9	48.4	45.1	43.9	46.5
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53.9	52.1	46.7	48.3	47.0	43.4
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.0	46.7
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
																					—
Heroin [12,13]	18	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9	30.6	34.9	33.7	34.1	35.1	32.2	33.8	35.6	32.1
	19–22	18.9	19.4	19.3	16.4	17.2	20.8	21.2	24.4	28.5	31.6	30.7	25.3	30.2	30.0	33.2	35.2	29.1	31.4	32.1	32.7
	23–26	—	—	—	—	18.6	18.1	21.0	22.3	28.4	31.2	28.1	25.6	25.7	25.7	29.2	29.3	32.3	30.5	35.1	31.9
	27–30	—	—	—	—	—	—	—	—	23.6	27.4	29.5	22.1	25.6	28.5	24.4	30.7	29.5	30.0	28.3	33.0
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Some other narcotic [3,14,15]	18	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1	34.6	37.1	37.5	38.0	39.8	40.0	38.9	42.8	40.8
	19–22	32.7	32.4	30.8	31.0	28.7	34.3	32.6	33.8	37.9	37.9	35.6	35.4	35.2	33.5	35.1	38.7	37.3	38.3	38.9	39.5
	23–26	—	—	—	—	32.8	32.1	33.6	32.2	35.9	36.4	34.7	33.2	33.9	33.1	35.8	32.6	36.7	35.7	39.9	38.2
	27–30	—	—	—	—	—	—	—	—	31.6	36.2	36.1	29.0	31.8	33.0	34.8	36.9	37.2	35.2	32.2	36.9
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines [4,8]	18	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7	57.3	58.8	61.5	62.0	62.8	59.4	59.8	60.8	58.1
	19–22	71.7	72.6	73.5	69.7	69.1	69.1	63.1	61.8	61.3	62.2	57.7	58.3	56.3	56.0	56.6	60.3	56.9	55.5	56.3	57.6
	23–26	—	—	—	—	65.8	66.0	64.5	65.3	62.2	60.1	55.8	54.8	54.5	52.6	52.9	56.0	52.8	51.2	53.2	49.1
	27–30	—	—	—	—	—	—	—	—	54.3	58.6	55.3	54.4	50.4	52.9	48.3	53.7	51.7	48.1	41.4	48.2
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.6	43.5	39.1	40.9	39.4	38.5
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41.0	41.9
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE 7-4 (cont.)
Trends in Availability of Drugs as Perceived by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?

Percentage saying fairly easy or very easy to get [1]

	Age Group	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Cocaine	18	47.8	46.2	44.6	43.3	47.8	44.7	46.5	47.1	42.4	39.4	35.5	30.5	29.8	30.5	29.2	29.1	28.6	27.3	28.1	24.2	§	—
	19–22	52.1	49.6	47.6	46.7	47.0	50.0	47.4	47.3	44.0	38.5	37.2	39.2	32.9	28.1	34.4	33.3	37.3	37.0	40.5	38.3	33.2	-5.0
	23–26	45.0	44.6	47.8	40.8	50.7	48.4	51.2	47.4	45.5	44.0	41.1	37.8	37.4	36.8	36.8	36.2	36.8	38.0	38.6	38.5	44.8	+6.3
	27–30	44.6	45.5	46.3	42.9	38.0	43.1	43.2	45.8	50.6	43.6	40.8	44.2	42.3	35.0	41.6	39.4	39.7	40.1	41.8	42.5	36.8	-5.7
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crack	18	42.6	40.2	38.5	35.3	39.2	39.3	38.8	37.5	35.2	31.9	26.1	24.0	22.0	24.6	20.1	22.0	19.8	18.1	20.8	16.9	§	—
	19–22	40.2	37.3	35.7	37.5	33.7	34.0	35.2	35.7	31.4	27.3	27.2	27.3	20.6	20.8	23.3	21.0	20.0	18.3	22.1	—	—	—
	23–26	31.9	37.1	33.9	32.8	36.5	35.1	34.0	31.4	33.1	27.4	27.1	25.3	27.6	24.2	26.7	21.9	19.4	23.6	21.2	—	—	—
	27–30	35.9	36.9	33.4	33.7	28.0	34.4	29.6	36.4	36.1	33.1	27.5	28.9	25.2	24.6	26.5	26.5	28.4	22.6	22.8	—	—	—
	35	45.0	41.2	38.9	40.5	36.1	34.2	37.1	35.1	33.2	31.6	30.0	30.4	27.3	28.7	25.7	26.1	26.3	24.3	—	—	—	—
	40	42.0	38.7	39.5	39.0	35.8	38.6	37.1	32.7	35.2	33.2	30.9	30.1	27.9	25.5	28.1	24.7	25.0	22.7	—	—	—	—
	45	—	—	—	37.0	40.0	40.6	36.2	37.0	34.2	31.7	36.2	32.3	28.2	32.3	27.3	24.7	28.8	26.5	—	—	—	—
	50	—	—	—	—	—	—	—	—	32.8	36.3	32.4	29.5	30.5	30.0	27.2	29.9	28.6	24.2	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	30.2	34.6	28.7	28.0	28.6	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine powder	18	44.6	40.7	40.2	37.4	41.7	41.6	42.5	41.2	38.9	33.9	29.0	26.4	25.1	28.4	22.3	25.8	22.9	21.3	23.0	19.9	§	—
	19–22	45.2	43.3	43.9	45.5	43.2	44.3	44.2	44.5	39.0	36.1	35.6	35.4	26.0	25.1	31.8	33.0	29.2	29.2	36.0	—	—	—
	23–26	41.8	44.4	40.7	43.4	48.5	45.1	46.4	45.0	41.4	41.6	40.3	37.5	37.0	35.1	34.0	34.3	32.4	34.5	35.5	—	—	—
	27–30	43.9	42.7	42.4	39.7	37.9	40.2	42.7	43.0	47.5	41.3	38.2	38.4	37.0	35.4	36.9	40.7	38.1	36.1	37.2	—	—	—
	35	47.9	43.1	41.7	42.0	39.6	35.8	39.5	37.4	38.6	34.9	35.5	35.3	31.4	35.2	31.9	34.2	35.3	33.7	38.4	34.7	35.8	+1.1
	40	44.7	41.5	41.5	40.7	38.5	40.3	37.8	35.2	36.5	33.9	33.5	31.8	29.5	29.8	31.6	28.6	30.2	27.7	35.2	35.5	32.8	-2.7
	45	—	—	—	39.0	40.2	40.6	37.3	38.2	34.1	31.5	37.2	33.2	28.7	34.0	29.9	26.6	29.6	29.6	31.7	29.3	29.1	-0.2
	50	—	—	—	—	—	—	—	—	32.6	35.9	32.8	31.0	30.8	30.3	27.8	30.7	29.3	27.0	33.2	32.2	28.8	-3.4
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	30.6	35.3	30.4	29.8	30.9	32.3	33.7	30.7	-3.0
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.9	34.4	26.4	-8.1 sss
Heroin [12,13]	18	33.5	32.3	29.0	27.9	29.6	27.3	27.4	29.7	25.4	27.4	24.1	20.8	19.9	22.1	20.2	20.4	20.0	19.1	18.4	16.1	§	—
	19–22	29.4	30.2	26.4	26.9	22.6	25.4	25.3	26.5	24.2	19.4	22.0	21.2	19.3	16.0	20.2	21.1	24.5	20.0	19.2	20.5	12.2	-8.3 ss
	23–26	25.7	26.6	27.2	25.5	30.9	22.5	28.1	22.2	23.4	23.4	23.1	21.1	22.7	23.1	21.1	21.2	24.9	22.1	22.3	20.9	24.0	+3.0
	27–30	29.3	29.9	27.0	27.5	22.0	27.8	25.4	27.5	26.3	25.2	25.2	28.0	23.3	20.9	25.5	26.9	28.7	28.9	29.2	30.9	19.6	-11.3 ss
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Some other narcotic [3,14,15]	18	43.9	40.5	44.0	39.3	40.2	39.2	39.6	37.3	34.9	36.1	54.2	50.7	50.4	46.5	42.2	39.0	39.3	35.8	32.5	31.0	§	—
	19–22	41.1	44.1	40.4	40.6	39.4	41.4	38.5	38.3	38.0	35.3	55.2	53.8	52.2	53.5	49.7	47.5	46.8	40.1	42.4	39.2	30.1	-9.1 s
	23–26	38.1	35.8	40.0	40.3	47.7	44.7	45.5	41.7	41.2	42.5	56.2	59.6	58.6	62.1	52.1	52.6	55.0	48.3	49.6	42.4	36.1	-6.3
	27–30	32.4	39.4	38.5	38.9	35.8	37.7	39.8	41.3	39.4	43.5	62.3	65.2	59.8	64.4	56.2	60.9	55.2	57.6	52.9	53.2	43.3	-9.9 s
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines [4,8]	18	57.1	57.1	57.4	55.0	55.4	51.2	52.9	49.6	47.9	47.1	44.1	47.0	45.4	42.7	44.5	41.9	41.1	38.0	39.3	39.0	§	—
	19–22	60.2	56.5	53.7	55.1	53.9	56.9	52.3	55.8	49.5	49.8	43.6	52.3	54.4	54.0	55.3	57.4	54.8	57.9	53.8	55.5	49.6	-5.9
	23–26	51.1	49.4	48.2	50.3	51.8	51.9	58.0	53.7	46.9	51.0	45.5	55.5	55.6	59.4	54.3	54.7	52.5	52.7	51.3	54.5	56.9	+2.4
	27–30	47.6	49.3	45.6	48.7	43.9	45.3	49.2	48.1	45.0	51.1	46.4	49.9	54.6	54.2	55.5	56.6	49.2	58.0	54.6	59.0	54.9	-4.1
	35	42.2	39.6	39.2	39.2	35.4	35.4	40.3	40.4	40.6	39.2	37.1	40.4	37.5	40.7	38.9	37.3	38.9	36.2	38.2	38.6	35.2	-3.4
	40	39.4	37.5	39.4	38.7	37.9	41.1	38.4	37.6	39.2	37.2	37.0	34.3	35.8	34.6	35.6	34.0	36.7	34.8	40.6	36.5	33.3	-3.2
	45	—	—	—	35.8	39.8	39.3	37.1	38.3	36.8	33.0	39.8	37.0	34.5	39.3	35.2	32.4	35.2	34.9	34.8	35.7	31.6	-4.1
	50	—	—	—	—	—	—	—	—	32.8	38.0	34.4	33.9	32.3	33.0	31.1	33.5	34.9	32.7	37.9	35.8	32.5	-3.2
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	36.8	39.6	35.3	35.2	34.8	35.4	32.1	33.8	+1.7
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.3	33.6	25.9	- 7.6 sss

(List of drugs continued.)

TABLE 7-4 (cont.)
Trends in Availability of Drugs as Perceived by Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?

Percentage saying fairly easy or very easy to get [1]

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Crystal methamphetamine (ice) [10,16,17]	18	—	—	—	—	—	—	—	—	—	—	24.0	24.3	26.0	26.6	25.6	27.0	26.9	27.6	29.8	27.6
	19–22	—	—	—	—	—	—	—	—	—	—	24.0	21.8	22.5	20.9	24.7	25.5	25.4	29.3	31.0	31.8
	23–26	—	—	—	—	—	—	—	—	—	—	22.3	20.0	21.3	22.9	24.5	24.7	24.7	25.8	30.2	28.5
	27–30	—	—	—	—	—	—	—	—	—	—	27.3	19.7	22.0	21.2	21.7	25.8	26.1	25.1	22.6	29.1
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sedatives/ barbiturates [5]	18	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9	42.4	44.0	44.5	43.3	42.3	41.4	40.0	40.7	37.9
	19–22	59.5	61.1	56.8	54.2	48.1	52.7	46.8	44.6	45.5	47.7	44.2	41.7	43.4	41.9	40.6	42.9	41.1	39.8	39.2	42.3
	23–26	—	—	—	—	52.7	47.7	46.4	45.9	47.4	44.8	41.6	39.6	42.0	38.8	40.3	42.1	40.6	39.1	42.6	39.7
	27–30	—	—	—	—	—	—	—	—	43.2	44.5	44.2	38.5	37.8	39.7	37.4	39.9	41.2	39.1	33.9	38.4
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
																					—
Tranquilizers [9,18,19,20,21]	18	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7	40.8	40.9	41.1	39.2	37.8	36.0	35.4	36.2	32.7
	19–22	67.4	62.8	62.0	62.3	52.5	55.6	52.9	50.3	50.0	49.4	45.4	44.8	40.7	40.9	41.0	40.2	37.6	37.8	36.8	37.1
	23–26	—	—	—	—	60.2	54.3	54.1	56.3	52.8	51.4	47.8	45.1	48.1	43.2	45.9	44.3	42.3	36.4	39.4	38.3
	27–30	—	—	—	—	—	—	—	—	55.3	54.4	54.9	47.5	47.8	47.4	44.4	44.8	46.2	41.9	39.9	41.5
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	18	—	—	—	—	—	—	—	—	—	—	—	46.7	46.8	44.8	42.9	45.5	40.3	41.7	44.5	44.6
	19–22	—	—	—	—	—	—	—	—	—	—	44.1	44.8	46.3	41.7	40.9	41.8	40.8	39.2	39.2	40.5
	23–26	—	—	—	—	—	—	—	—	—	—	37.6	35.8	39.3	35.8	37.0	37.4	33.9	35.5	34.9	37.1
	27–30	—	—	—	—	—	—	—	—	—	—	36.4	30.6	35.0	31.6	30.5	33.1	35.6	32.5	30.5	34.5
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate Weighted N =	18	*3,240*	*3,578*	*3,602*	*3,385*	*3,269*	*3,274*	*3,077*	*3,271*	*3,231*	*2,806*	*2,549*	*2,476*	*2,586*	*2,670*	*2,526*	*2,552*	*2,340*	*2,517*	*2,520*	*2,215*
	19–22	*582*	*601*	*582*	*588*	*559*	*571*	*592*	*581*	*568*	*572*	*571*	*534*	*512*	*480*	*459*	*470*	*467*	*463*	*433*	*425*
	23–26					*540*	*541*	*548*	*539*	*526*	*514*	*532*	*511*	*523*	*500*	*463*	*449*	*418*	*419*	*395*	*415*
	27–30									*519*	*513*	*510*	*487*	*475*	*473*	*437*	*446*	*468*	*459*	*425*	*424*
	35															*1,142*	*1,141*	*1,146*	*1,150*	*1,032*	*1,022*
	40																			*1,029*	*1,093*
	45																				
	50																				
	55																				
	60																				

(Table continued on next page.)

TABLE 7-4 (cont.)
Trends in Availability of Drugs as Perceived by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Age Group	Percentage saying fairly easy or very easy to get [1]																					2019–2020 change
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Crystal methamphetamine (ice) [10,16,17]	18	27.8	28.3	28.3	26.1	26.7	27.2	26.7	25.1	23.3	22.3	18.3	17.1	14.5	17.2	13.7	15.3	14.5	13.6	13.6	11.9	§	—
	19–22	27.4	28.4	31.2	26.5	27.1	28.9	29.1	27.7	24.1	19.2	19.3	19.4	13.5	15.3	15.3	15.0	15.7	10.9	15.0	13.4	8.0	-5.4 s
	23–26	25.8	26.4	25.1	26.4	32.3	27.8	32.3	27.8	27.7	23.1	26.1	18.2	23.5	16.3	16.0	15.1	14.0	16.2	15.1	15.8	18.0	+2.2
	27–30	25.3	27.6	29.5	30.9	25.5	27.4	31.8	29.7	31.4	27.7	27.6	26.2	24.2	22.3	22.0	20.3	22.6	17.9	16.7	20.2	13.7	-6.5 s
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sedatives/ barbiturates [5]	18	37.4	35.7	36.6	35.3	46.3	44.4	43.8	41.7	38.8	37.9	36.8	32.4	28.7	27.9	26.3	25.0	25.7	23.4	23.0	23.6	§	—
	19–22	40.6	39.3	40.8	38.4	43.8	47.8	42.6	47.5	43.2	42.6	39.6	38.1	31.6	32.1	32.6	35.3	31.1	30.3	28.2	25.8	25.9	+0.1
	23–26	37.6	36.1	36.4	37.8	49.4	48.4	51.4	46.5	43.3	47.7	40.4	41.3	40.1	42.2	33.2	35.1	32.0	28.2	29.7	26.3	29.1	+2.7
	27–30	36.1	38.1	34.8	35.6	40.5	42.9	43.3	46.4	44.7	48.5	43.1	42.9	42.3	44.8	39.9	42.9	35.9	36.5	35.1	36.3	34.4	-1.9
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [9,18,19,20,21]	18	33.8	33.1	32.9	29.8	30.1	25.7	24.4	23.6	22.4	21.2	18.4	16.8	14.9	15.0	14.4	14.9	15.2	14.9	13.0	14.7	§	—
	19–22	36.5	34.9	34.6	34.2	29.7	30.1	22.8	28.5	23.3	18.3	20.2	18.6	17.3	17.4	16.8	19.7	17.8	15.0	15.0	11.4	38.7	+27.4 sss
	23–26	37.6	38.7	33.7	32.5	36.6	32.9	33.0	31.7	30.3	27.7	21.8	23.0	22.1	18.5	17.5	16.6	13.3	15.9	14.4	12.0	38.1	+26.1 sss
	27–30	36.7	42.9	38.1	35.9	30.6	33.5	32.1	32.4	33.1	30.1	30.6	27.1	25.7	28.1	21.2	22.1	20.3	18.1	17.4	19.1	44.0	+24.9 sss
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	18	44.8	44.4	45.5	40.7	42.6	39.7	41.1	40.1	35.2	30.3	27.3	26.1	25.0	28.5	22.0	23.7	21.3	20.1	21.1	19.2	§	—
	19–22	40.3	38.1	41.4	39.4	37.8	37.6	37.1	37.9	33.5	28.7	25.1	24.3	21.2	20.6	25.7	25.1	24.8	19.8	22.3	—	—	—
	23–26	34.0	34.7	33.1	31.1	34.7	31.2	34.2	33.3	30.2	28.6	22.2	29.2	25.6	23.6	24.1	18.3	18.7	18.5	23.0	—	—	—
	27–30	36.2	34.6	33.0	32.6	30.6	32.4	29.7	30.9	31.0	31.9	27.6	27.0	23.9	22.3	22.6	23.9	22.5	23.5	19.9	—	—	—
	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Approximate Weighted N =	18	*2,095*	*1,850*	*2,138*	*2,391*	*2,169*	*2,161*	*2,161*	*2,420*	*2,276*	*2,243*	*2,395*	*2,337*	*2,280*	*2,092*	*2,066*	*2,181*	*1,966*	*1,882*	*1,931*	*1,945*	*§*	
	19–22	*400*	*398*	*375*	*386*	*441*	*392*	*376*	*362*	*380*	*377*	*377*	*355*	*341*	*342*	*313*	*294*	*252*	*266*	*261*	*243*	*285*	
	23–26	*388*	*401*	*362*	*356*	*411*	*359*	*335*	*338*	*355*	*312*	*358*	*313*	*332*	*325*	*309*	*305*	*271*	*267*	*269*	*274*	*305*	
	27–30	*365*	*357*	*349*	*368*	*393*	*359*	*347*	*324*	*334*	*305*	*340*	*325*	*334*	*281*	*310*	*258*	*284*	*291*	*303*	*275*	*277*	
	35	*981*	*977*	*890*	*934*	*963*	*1,009*	*925*	*863*	*898*	*952*	*895*	*852*	*875*	*844*	*769*	*726*	*732*	*727*	*675*	*700*	*706*	
	40	*1,096*	*1,065*	*1,037*	*898*	*967*	*928*	*919*	*868*	*881*	*870*	*911*	*850*	*823*	*820*	*883*	*787*	*765*	*796*	*746*	*688*	*665*	
	45				*911*	*1,026*	*1,005*	*972*	*954*	*851*	*888*	*846*	*852*	*842*	*806*	*785*	*839*	*783*	*738*	*753*	*779*	*734*	
	50									*902*	*975*	*989*	*939*	*958*	*819*	*868*	*802*	*827*	*776*	*738*	*733*	*867*	
	55														*832*	*903*	*907*	*909*	*920*	*766*	*787*	*784*	
	60																						

(Table continued on next page.)

TABLE 7-4 (cont.)
Trends in Availability of Drugs as Perceived by
Respondents in Modal Age Groups of 18, 19–22, 23–26, 27–30, 35, 40, 45, 50, 55, and 60

§ Insufficient data for 2020 estimate.

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.
' — ' indicates data not available.

[1]Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

[2]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

[3]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin,OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

[4]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

[5]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

[6]For the estimate of Availability of LSD in 2018, there was a significant difference (p<.01) among those age 23-26 between the typical mail condition (19.0%) and the new web-push condition (35.1%) of survey administration.

[7]For the estimate of Availability of Other Hallucinogens in 2018, there was a significant difference (p<.01) among those age 27-30 between the typical mail condition (20.9%) and the new web-push condition (37.6%) of survey administration.

[8]For the estimate of Availability of Amphetamines in 2018, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (48.4%) and the new web-push condition (60.3%) of survey administration.

[9]For the estimate of Availability of Tranquilizers in 2018, there was a significant difference (p<.05) among those age 23-26 between the typical mail condition (18.3%) and the new web-push condition (9.6%) of survey administration.

[10]For the estimate of Availability of Crystal Methamphetamine (Ice) in 2019, there was a significant difference (p<.05) among those age 27-30 between the typical mail condition (15.3%) and the new web-push condition (25.3%) of survey administration.

[11]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-15.0, p<.01).

[12]As indicated, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-11.0, p<.01).

[13]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, only, the difference was also significant (-13.3, p<.01).

[14]As noted, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-9.2, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[15]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-13.0, p<.05).

[16]As indicated, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-8.2, p<.05).

[17]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-11.5, p<.01).

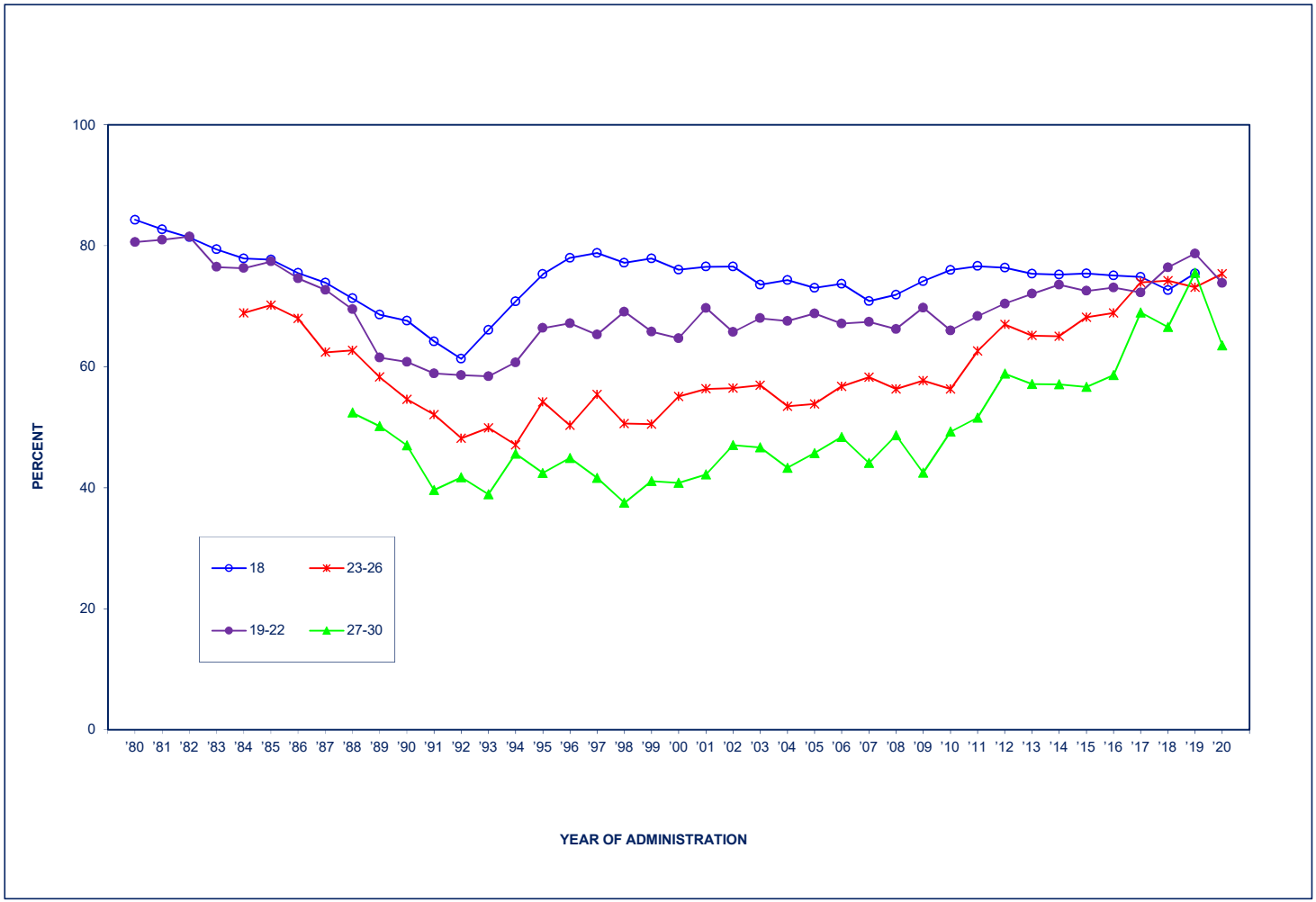
[18]As indicated, the one-year difference between 2019 and 2020 for respondents ages 19-22 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+26.5, p<.001).

[19]As indicated, the one-year difference between 2019 and 2020 for respondents ages 23-26 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+28.4, p<.001).

[20]As indicated, the one-year difference between 2019 and 2020 for respondents ages 27-30 is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+28.1, p<.001).

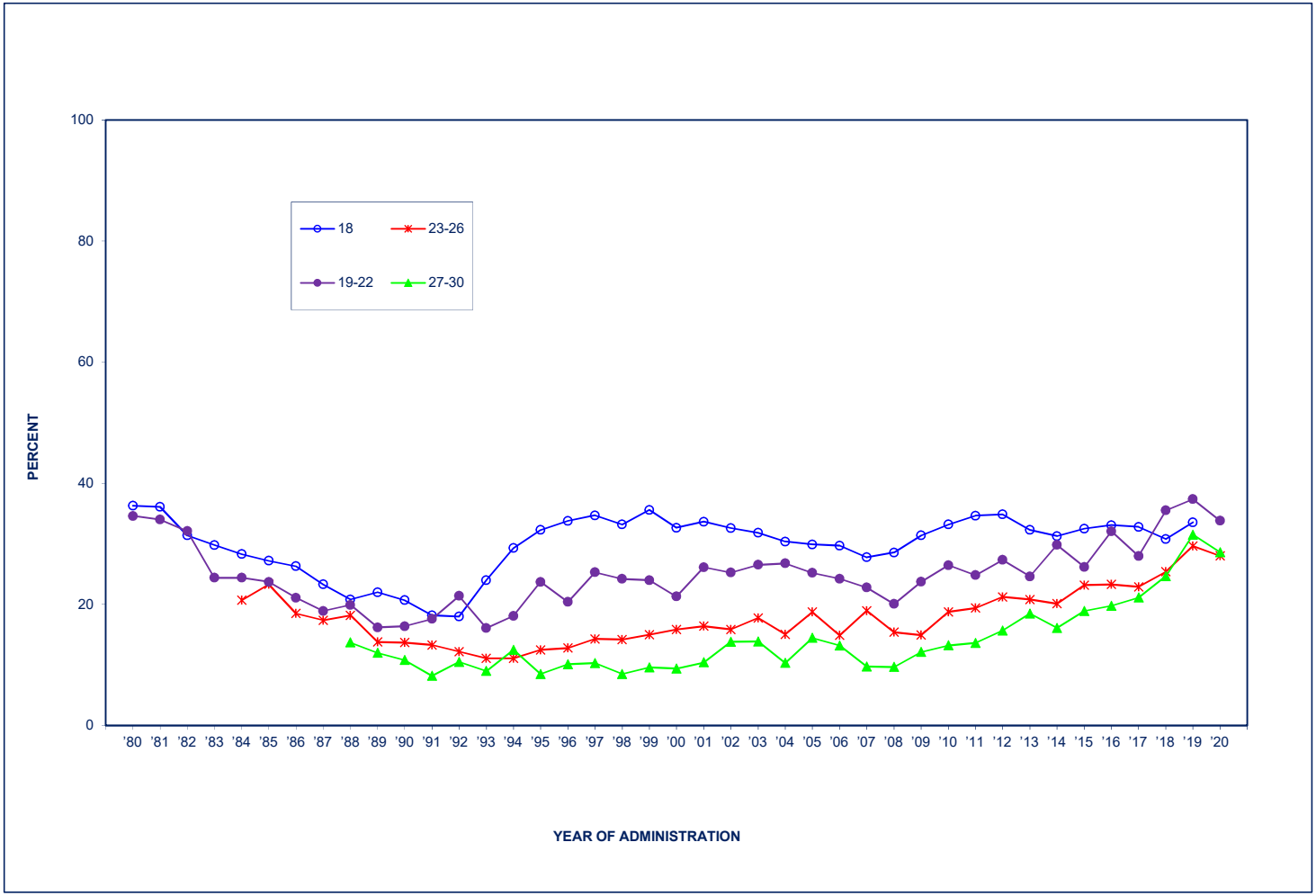
[21]In 2020, the question text was changed to include examples of tranquilizers: "Librium, Valium, Xanax, etc." This change likely explains the discontinuity in the 2020 results.

FIGURE 7-1
Trends in Direct Exposure to Use of ANY ILLICIT DRUGS
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



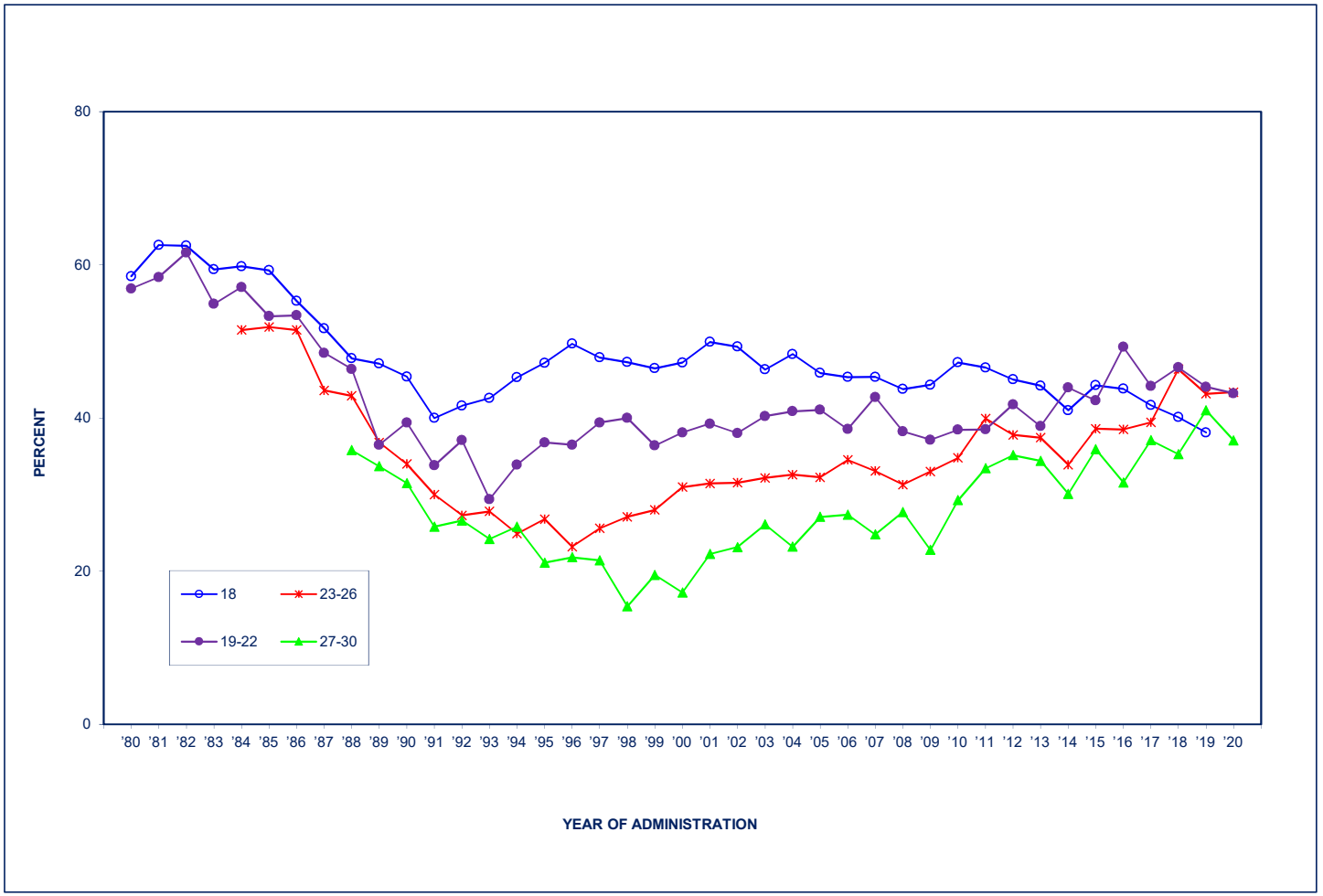
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-2
Trends in Direct Exposure to Use of ANY ILLICIT DRUGS
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

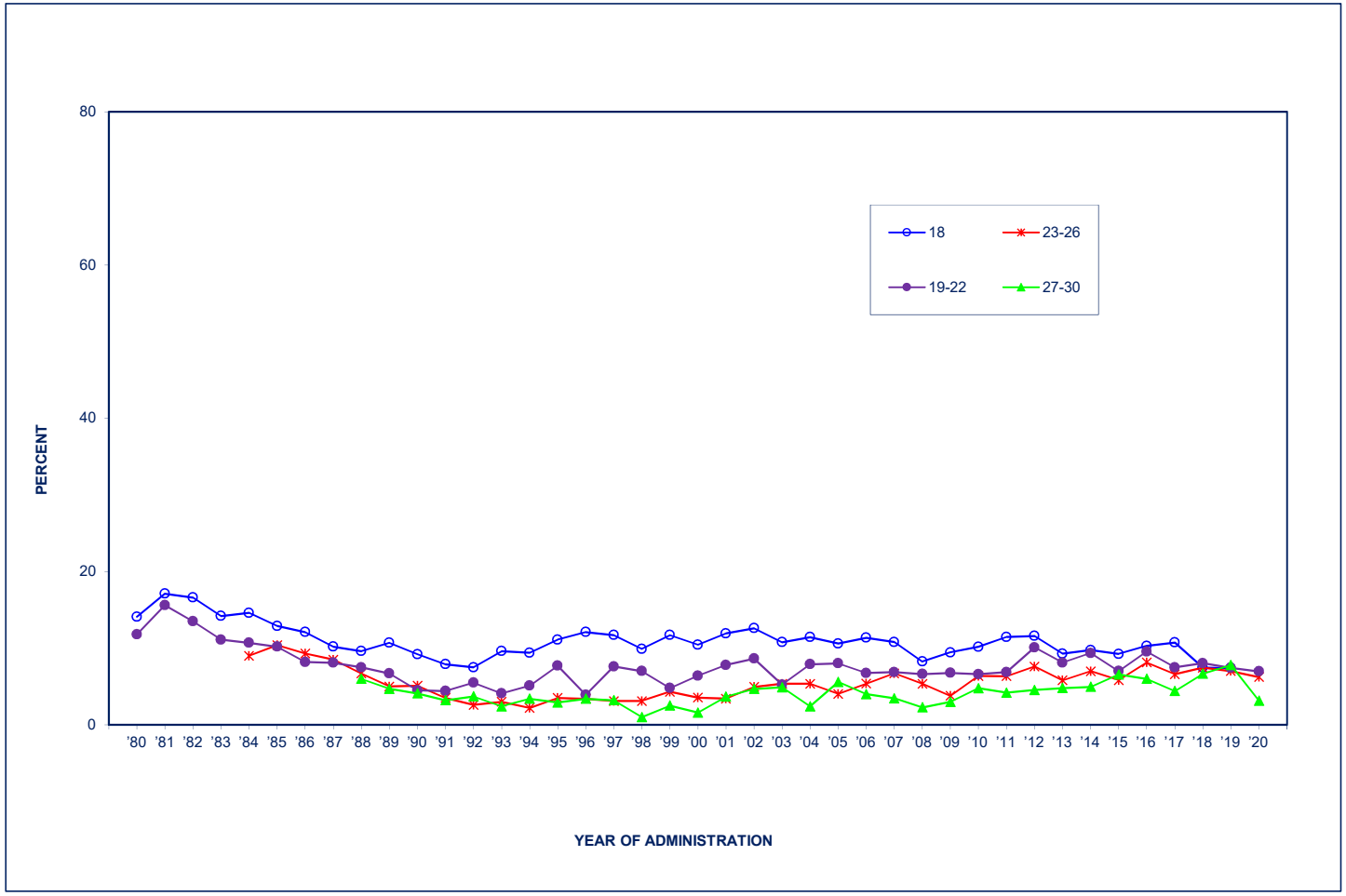
FIGURE 7-3
Trends in Direct Exposure to Use of ANY ILLICIT DRUG OTHER THAN MARIJUANA[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

[a]These estimates were derived from responses to the question for the following drugs: marijuana, LSD, other hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), and tranquilizers.

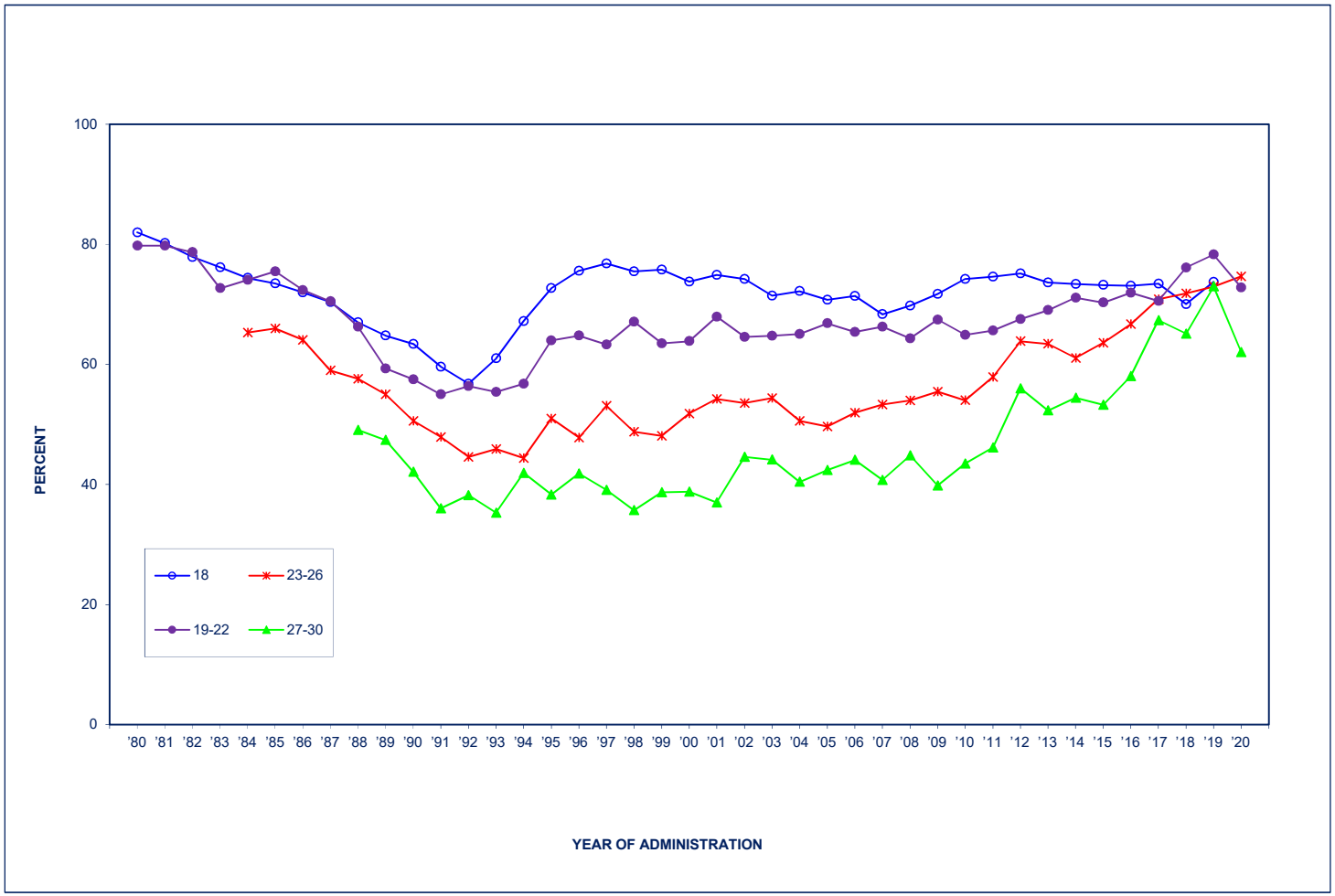
FIGURE 7-4
Trends in Direct Exposure to Use of ANY ILLICIT DRUG OTHER THAN MARIJUANA[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

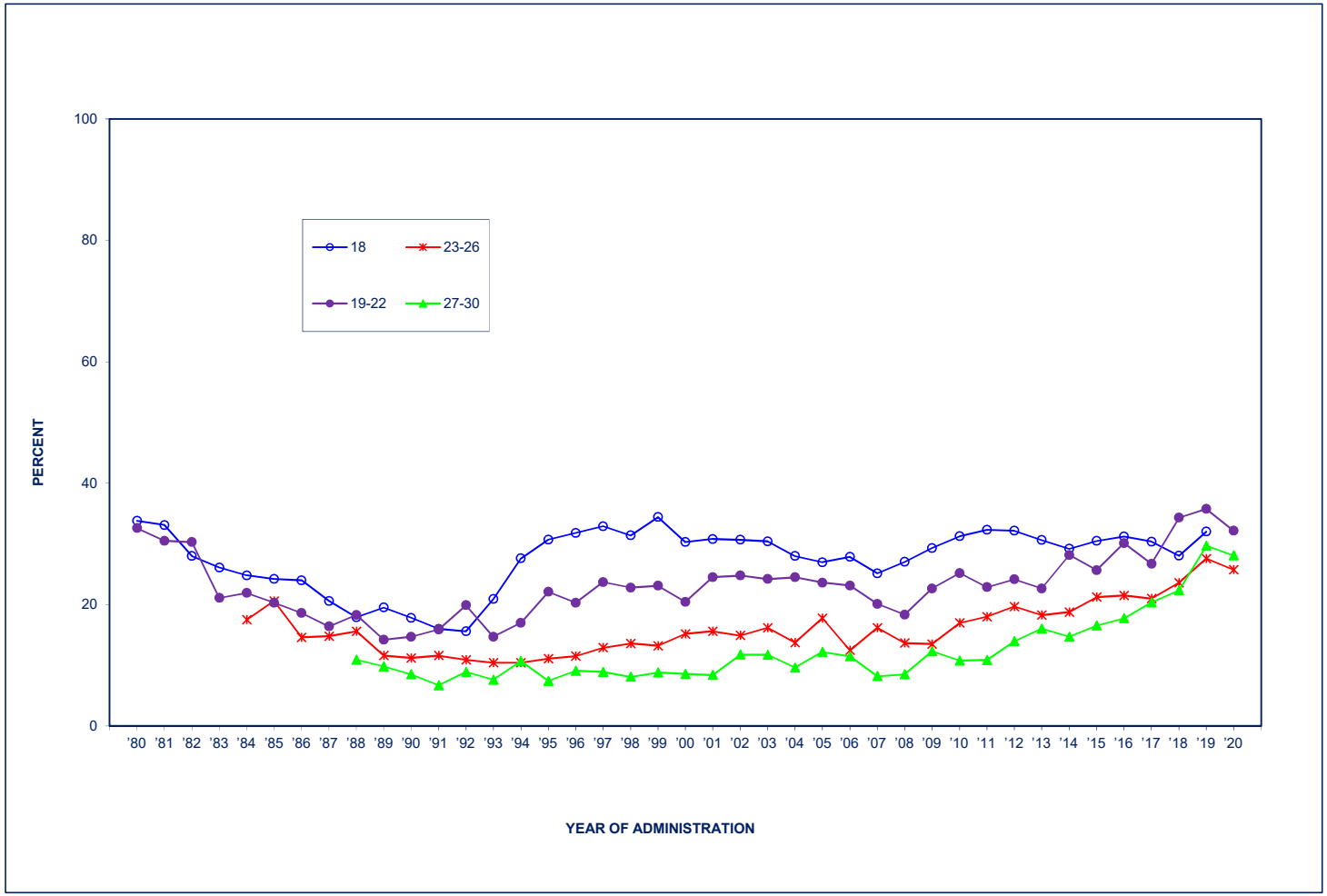
[a]These estimates were derived from responses to the question for the following drugs: marijuana, LSD, other hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), and tranquilizers.

FIGURE 7-5
Trends in Direct Exposure to Use of MARIJUANA
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



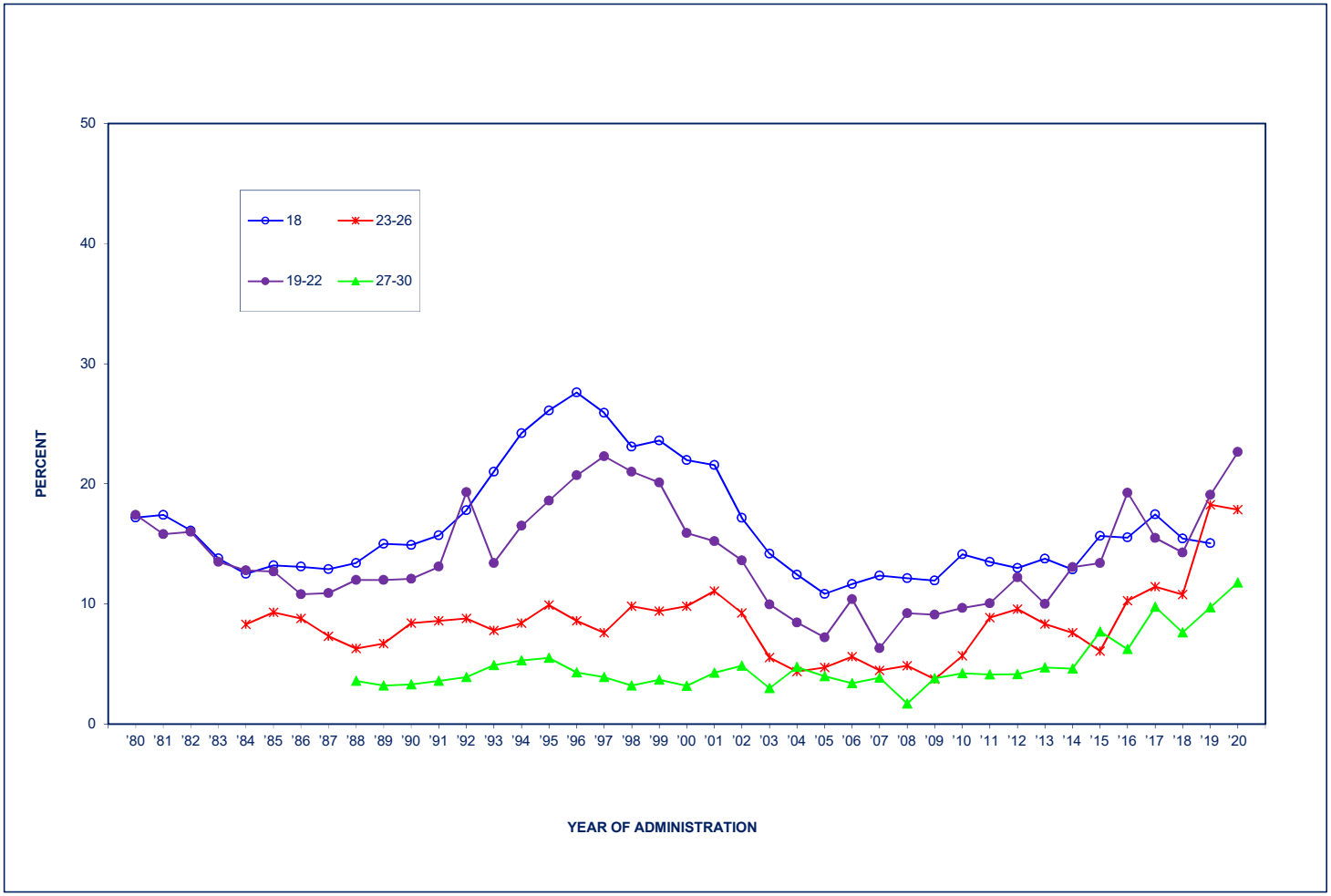
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-6
Trends in Direct Exposure to Use of MARIJUANA
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



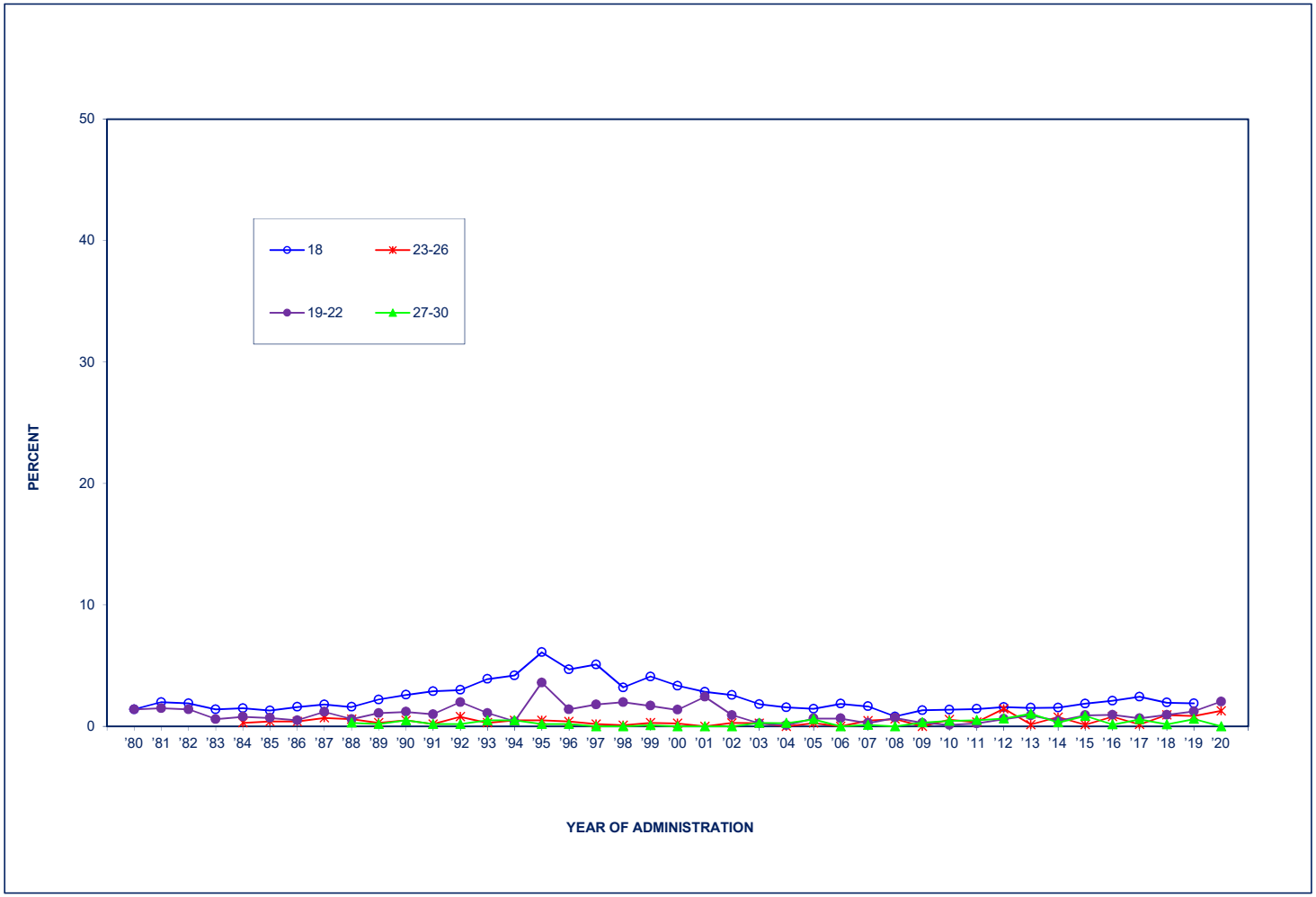
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-7
Trends in Direct Exposure to Use of LSD
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



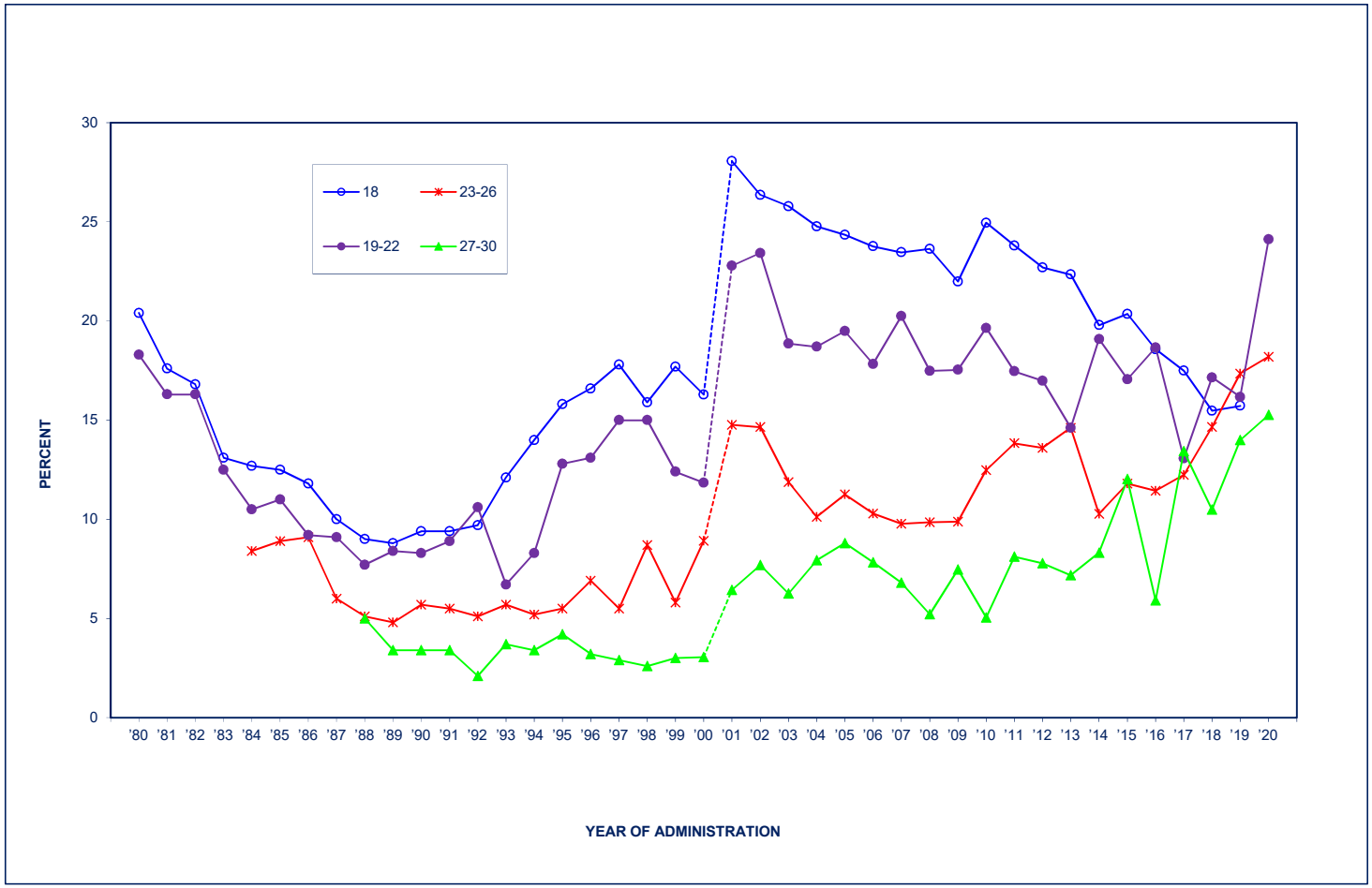
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-8
Trends in Direct Exposure to Use of LSD
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

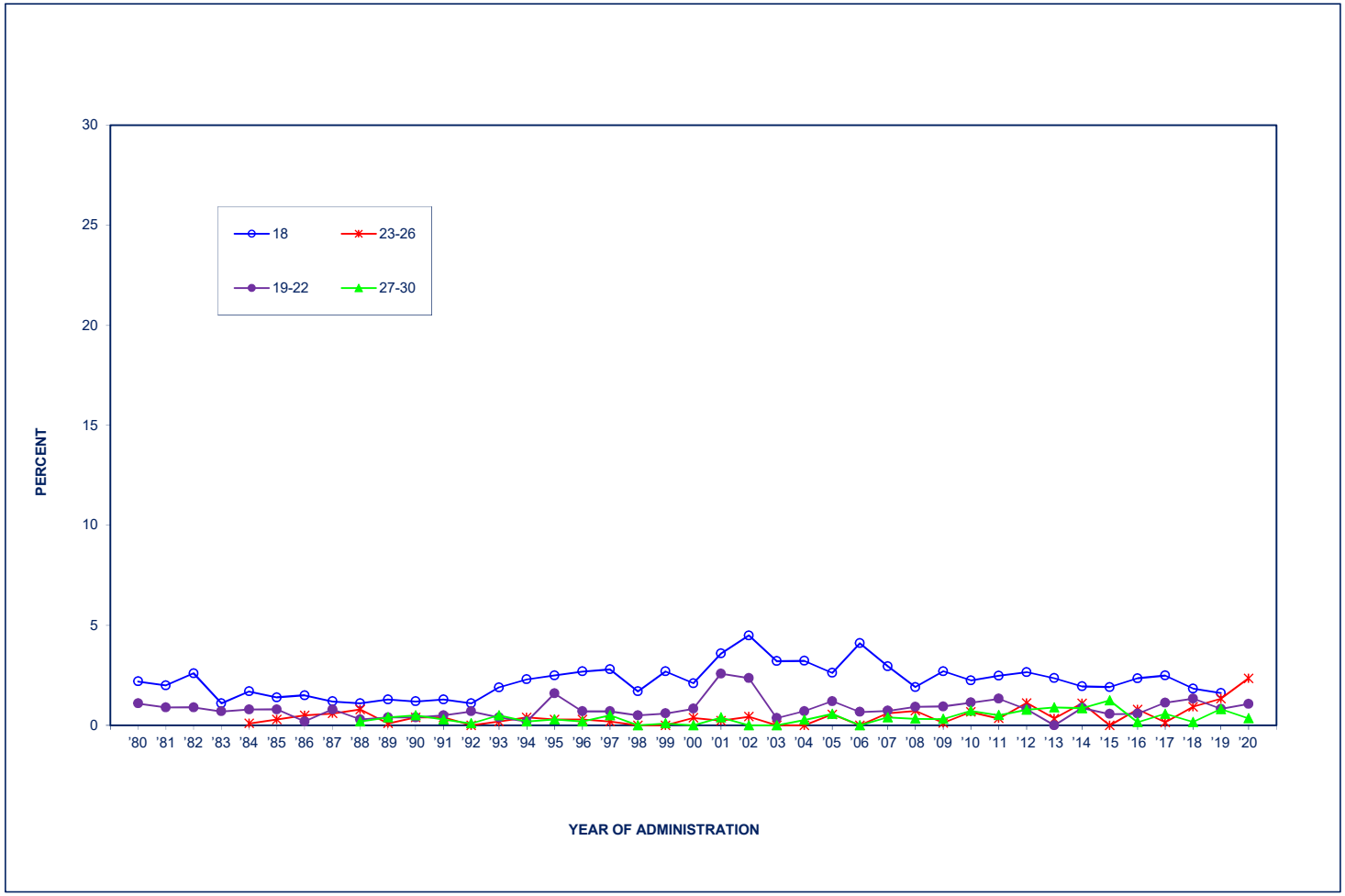
FIGURE 7-9
Trends in Direct Exposure to Use of HALLUCINOGENS OTHER THAN LSD[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

FIGURE 7-10
Trends in Direct Exposure to Use of HALLUCINOGENS OTHER THAN LSD[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



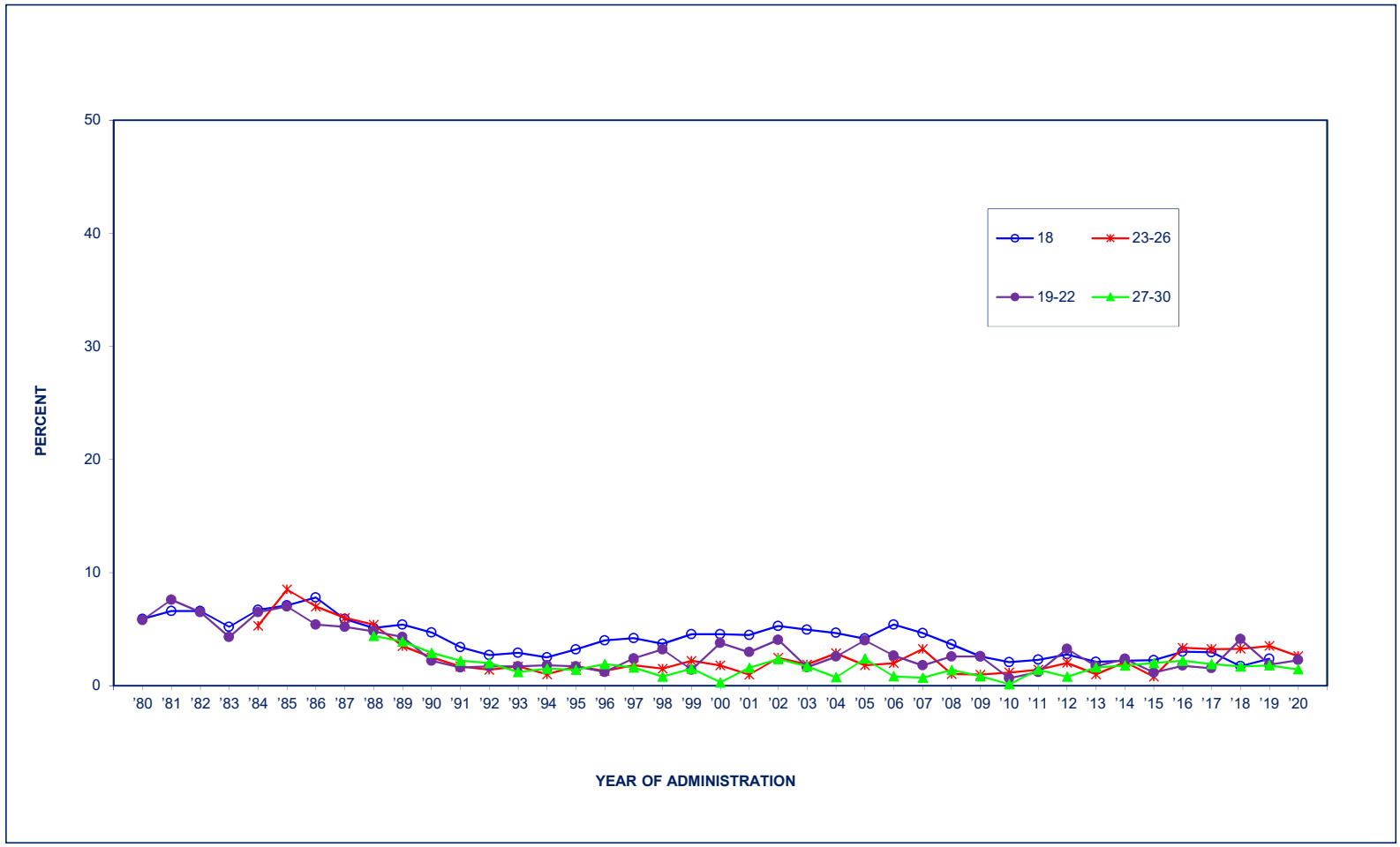
Source. The Monitoring the Future study, the University of Michigan.

[a]In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

FIGURE 7-11
Trends in Direct Exposure to Use of COCAINE
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

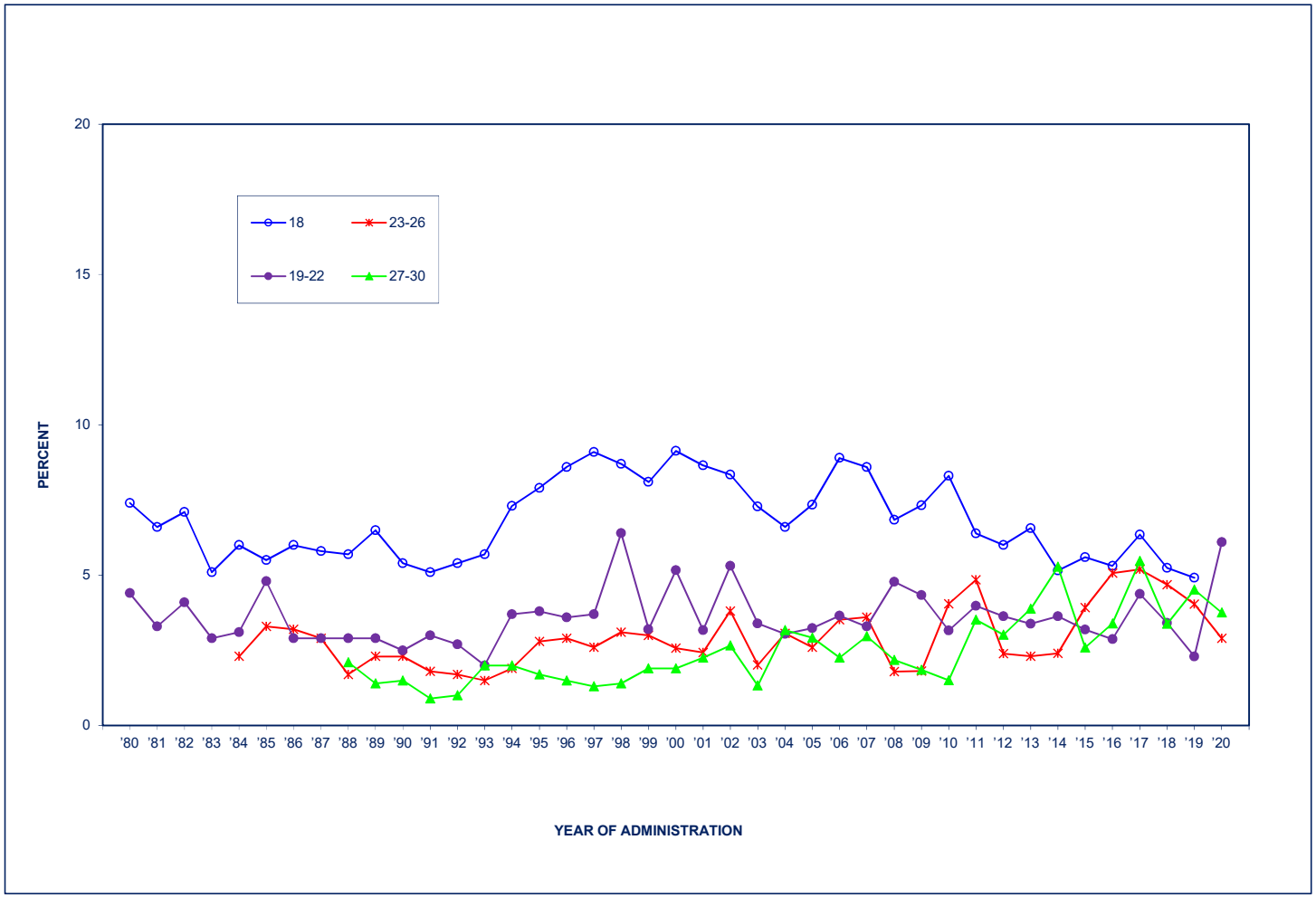
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-12
Trends in Direct Exposure to Use of COCAINE
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



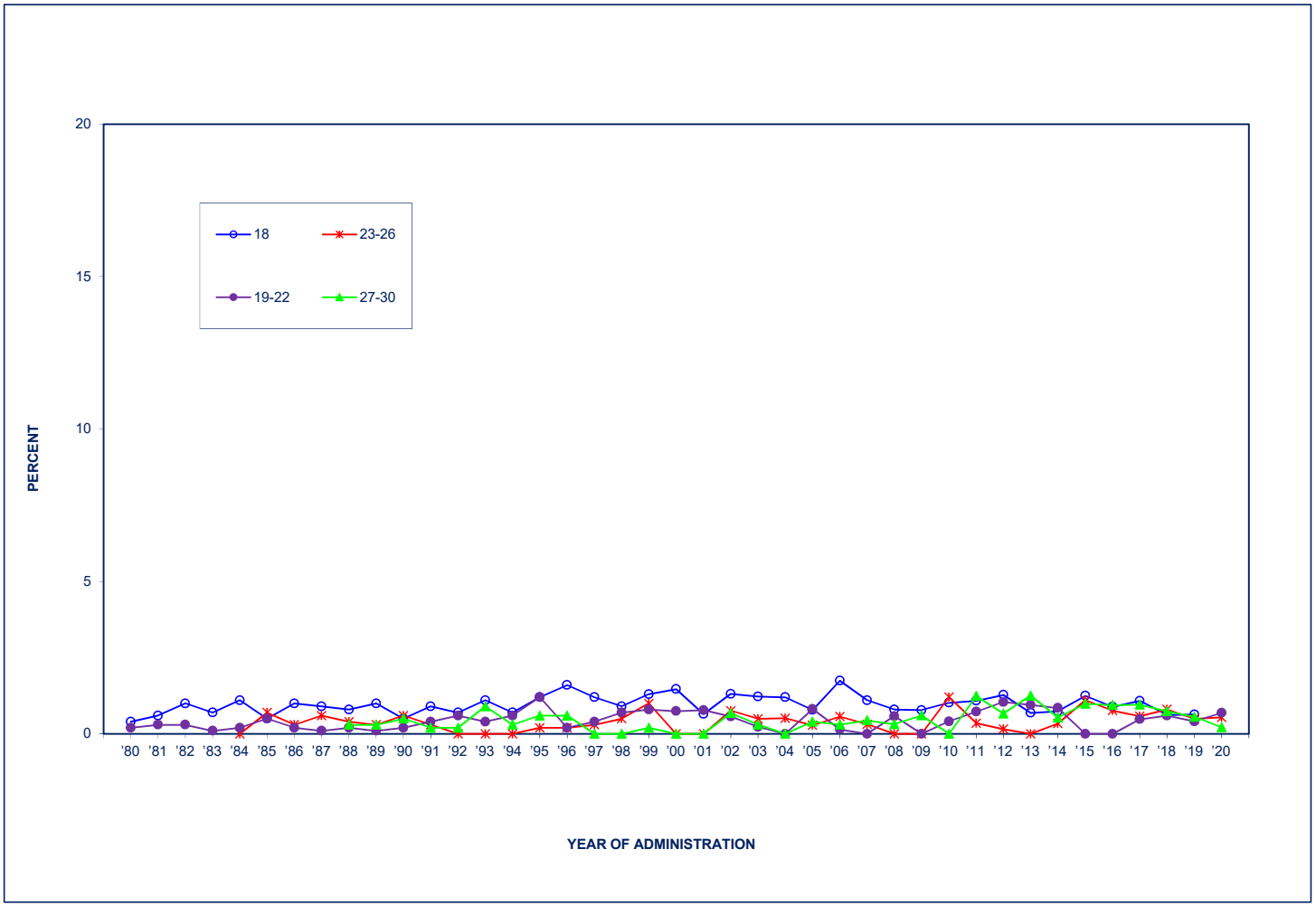
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-13
Trends in Direct Exposure to Use of HEROIN
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-14
Trends in Direct Exposure to Use of HEROIN
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



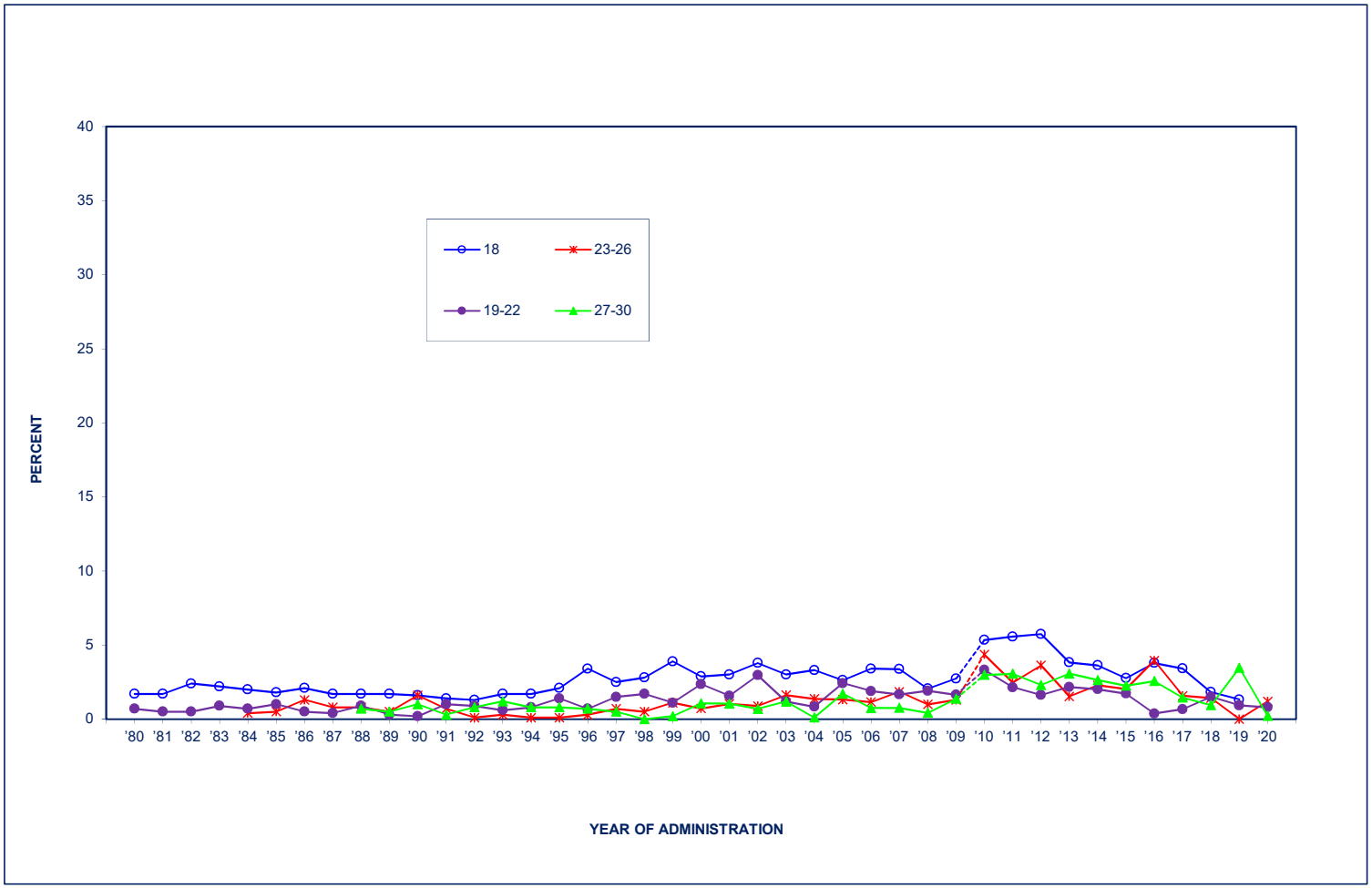
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-15
Trends in Direct Exposure to Use of NARCOTICS OTHER THAN HEROIN[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

Source. The Monitoring the Future study, the University of Michigan.

[a]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

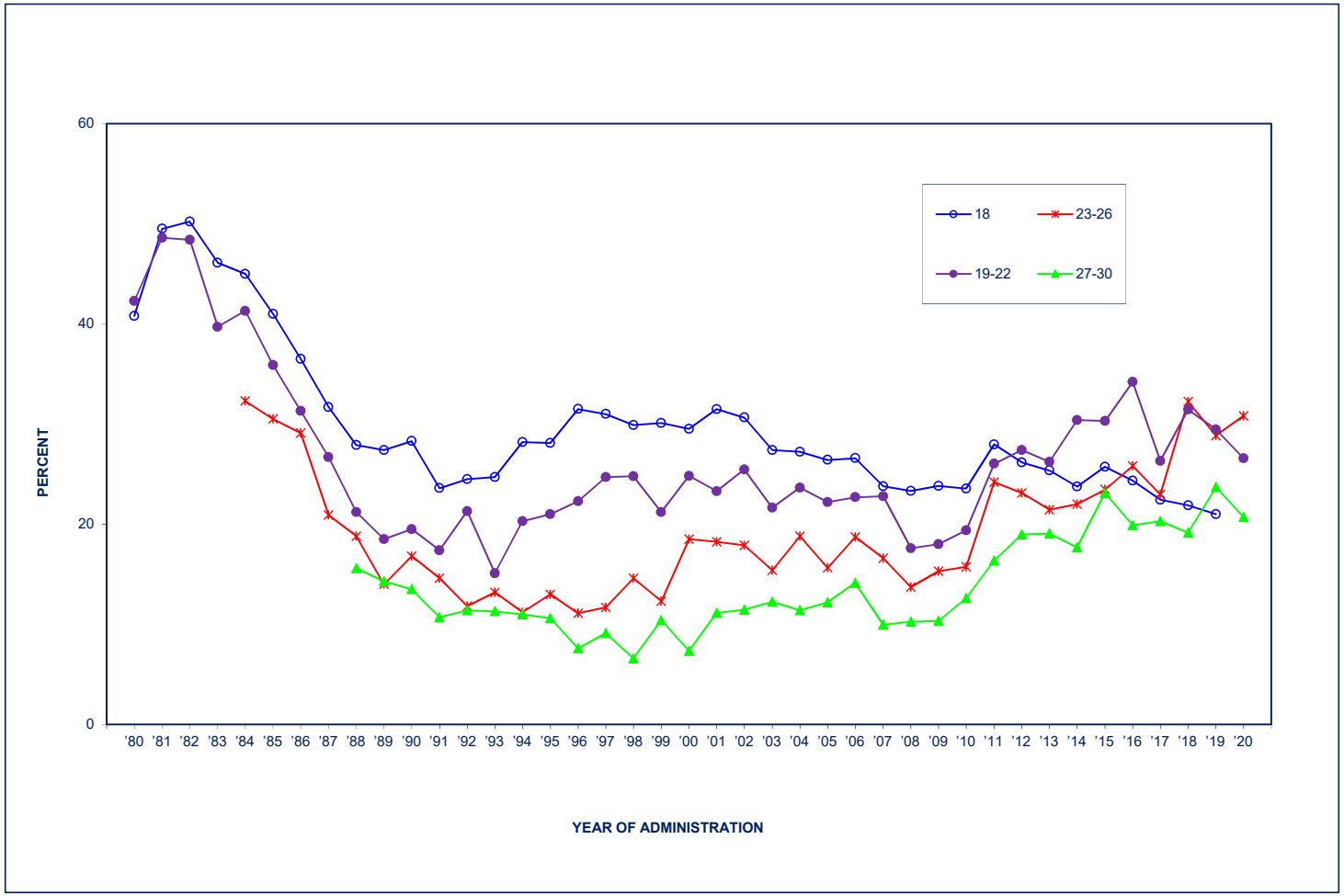
FIGURE 7-16
Trends in Direct Exposure to Use of NARCOTICS OTHER THAN HEROIN[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

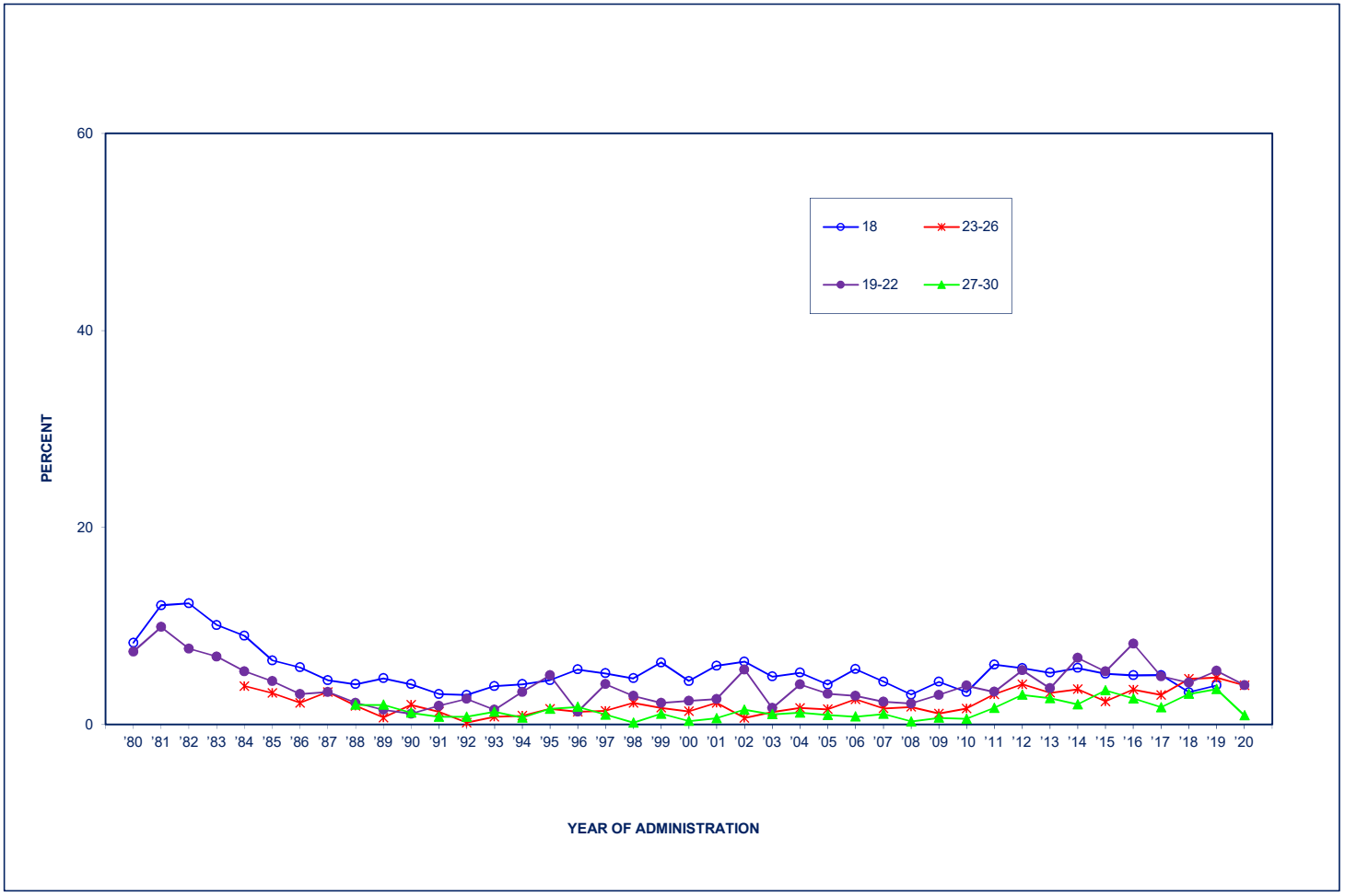
FIGURE 7-17
Trends in Direct Exposure to Use of AMPHETAMINES[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

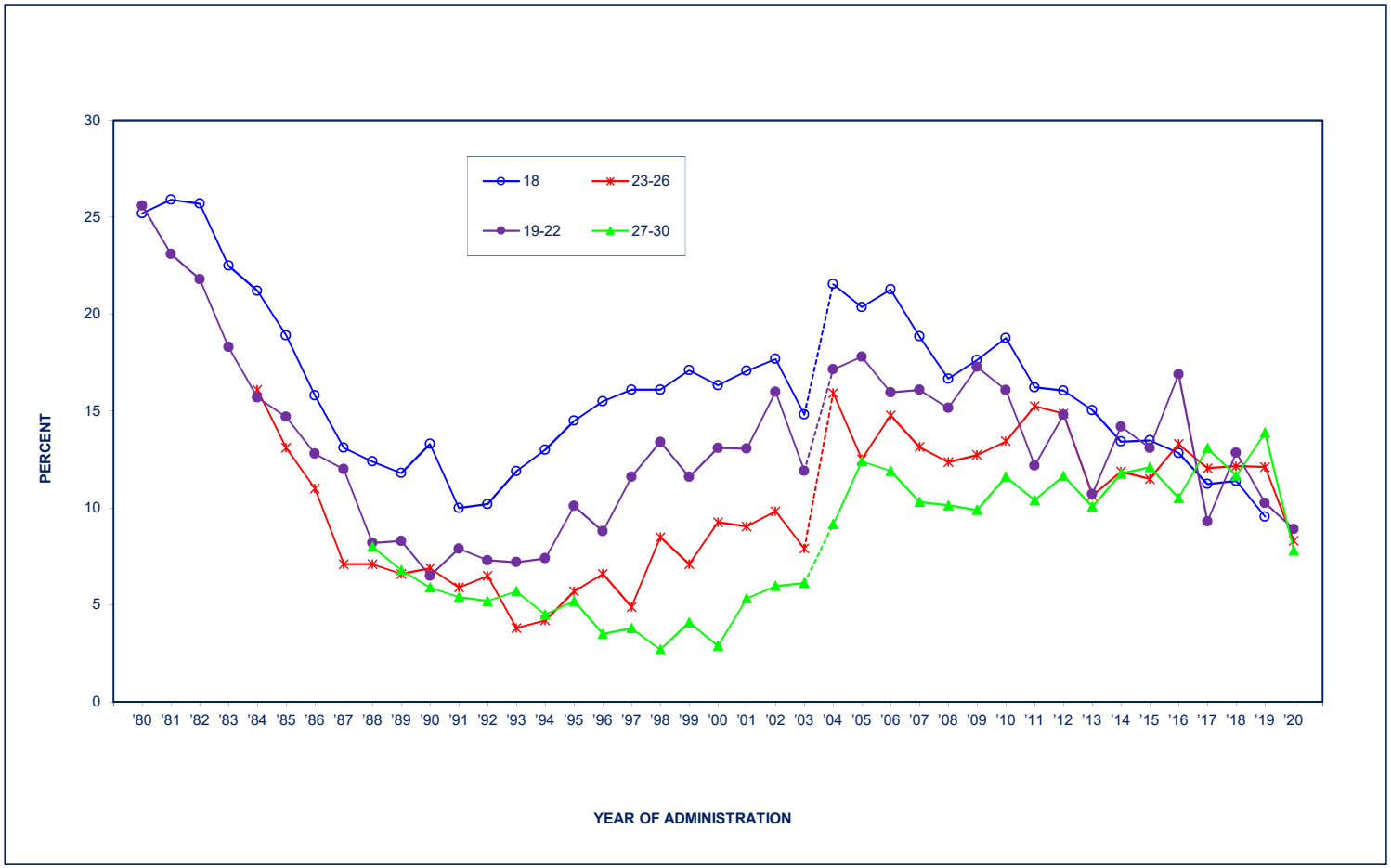
FIGURE 7-18
Trends in Direct Exposure to Use of AMPHETAMINES[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

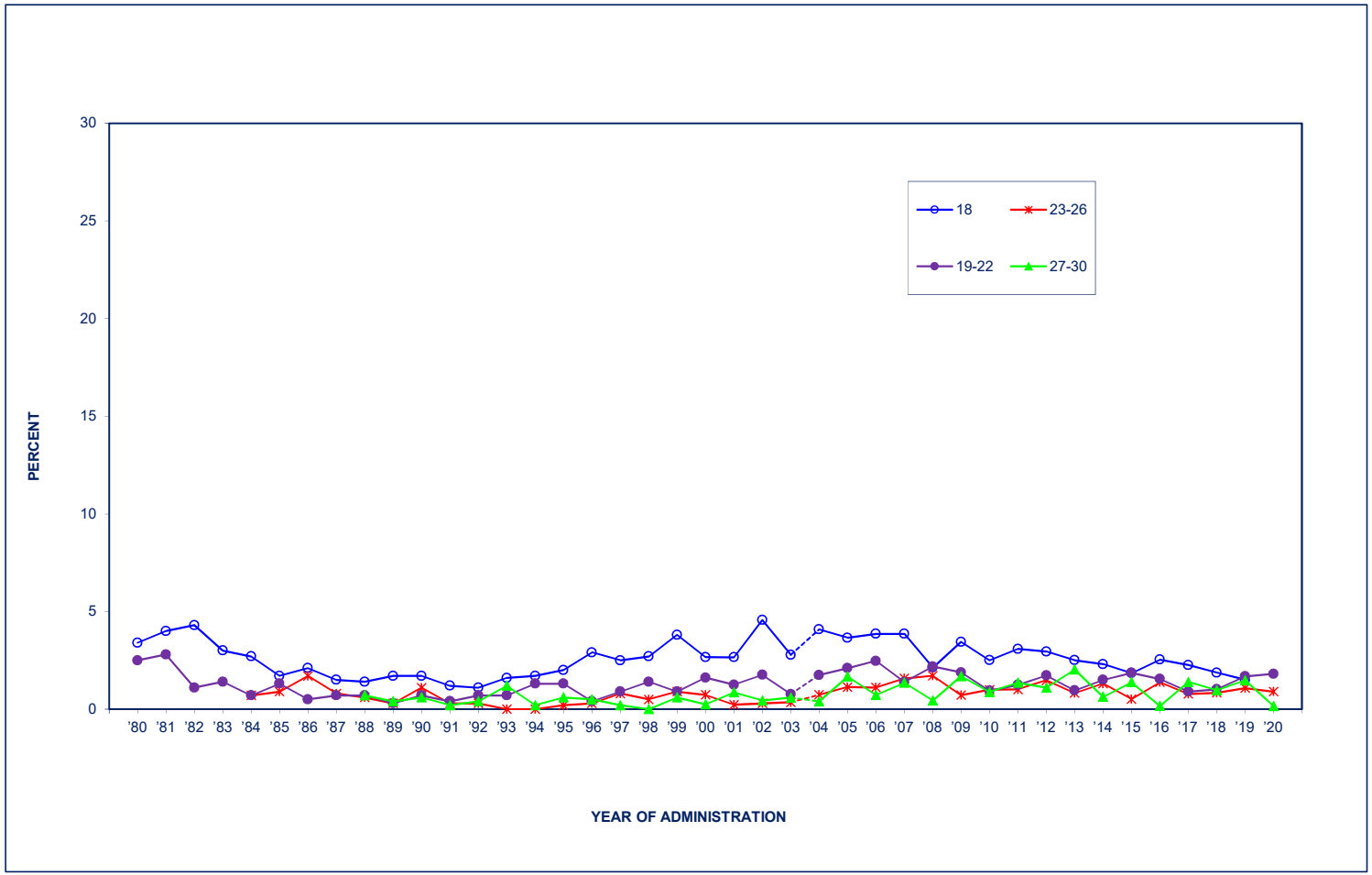
FIGURE 7-19
Trends in Direct Exposure to Use of SEDATIVES (BARBITURATES)[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 7-20
Trends in Direct Exposure to Use of SEDATIVES (BARBITURATES)[a] among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

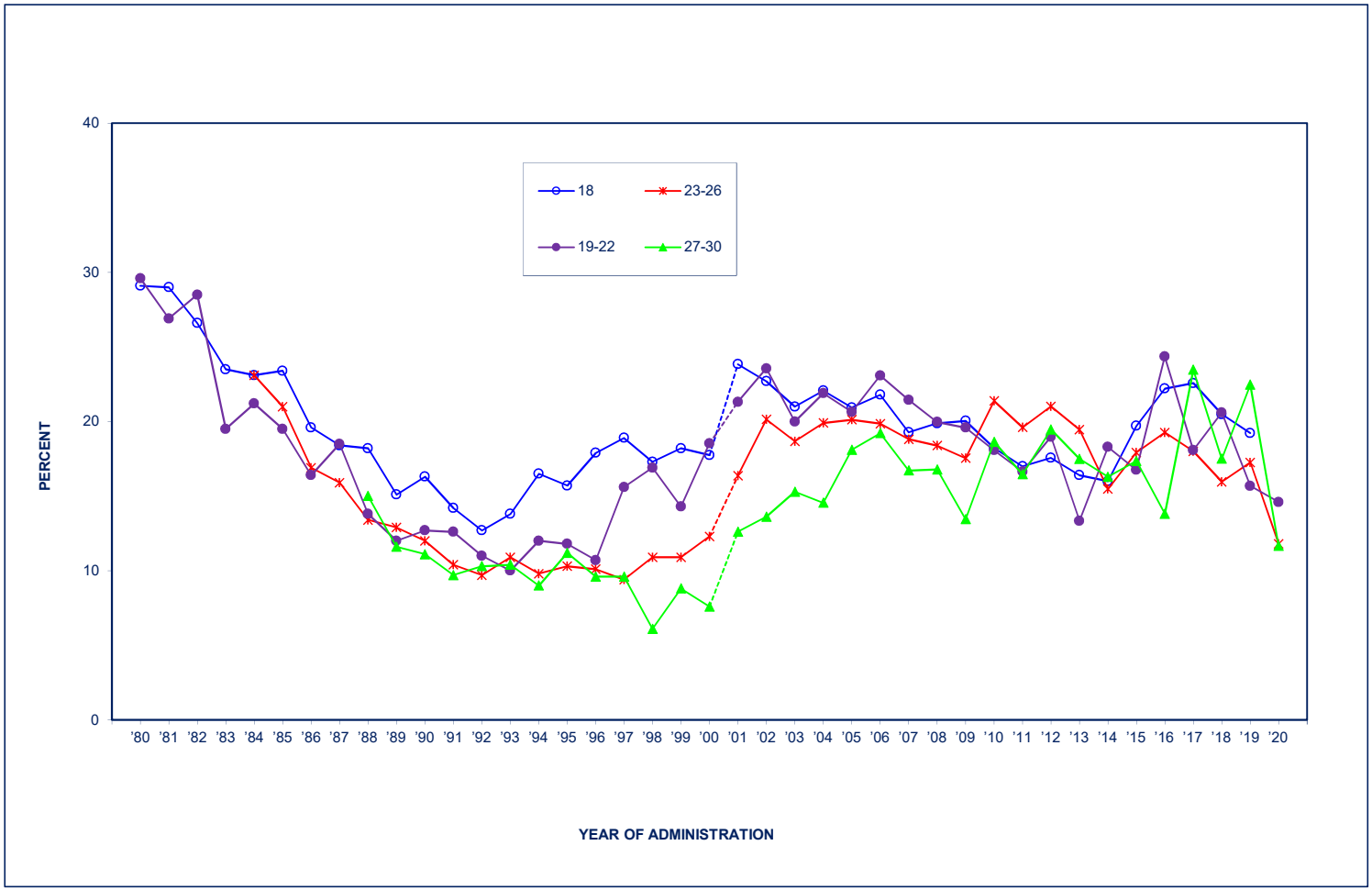


Source. The Monitoring the Future study, the University of Michigan.

[a]In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

FIGURE 7-21
Trends in Direct Exposure to Use of TRANQUILIZERS[a]
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30

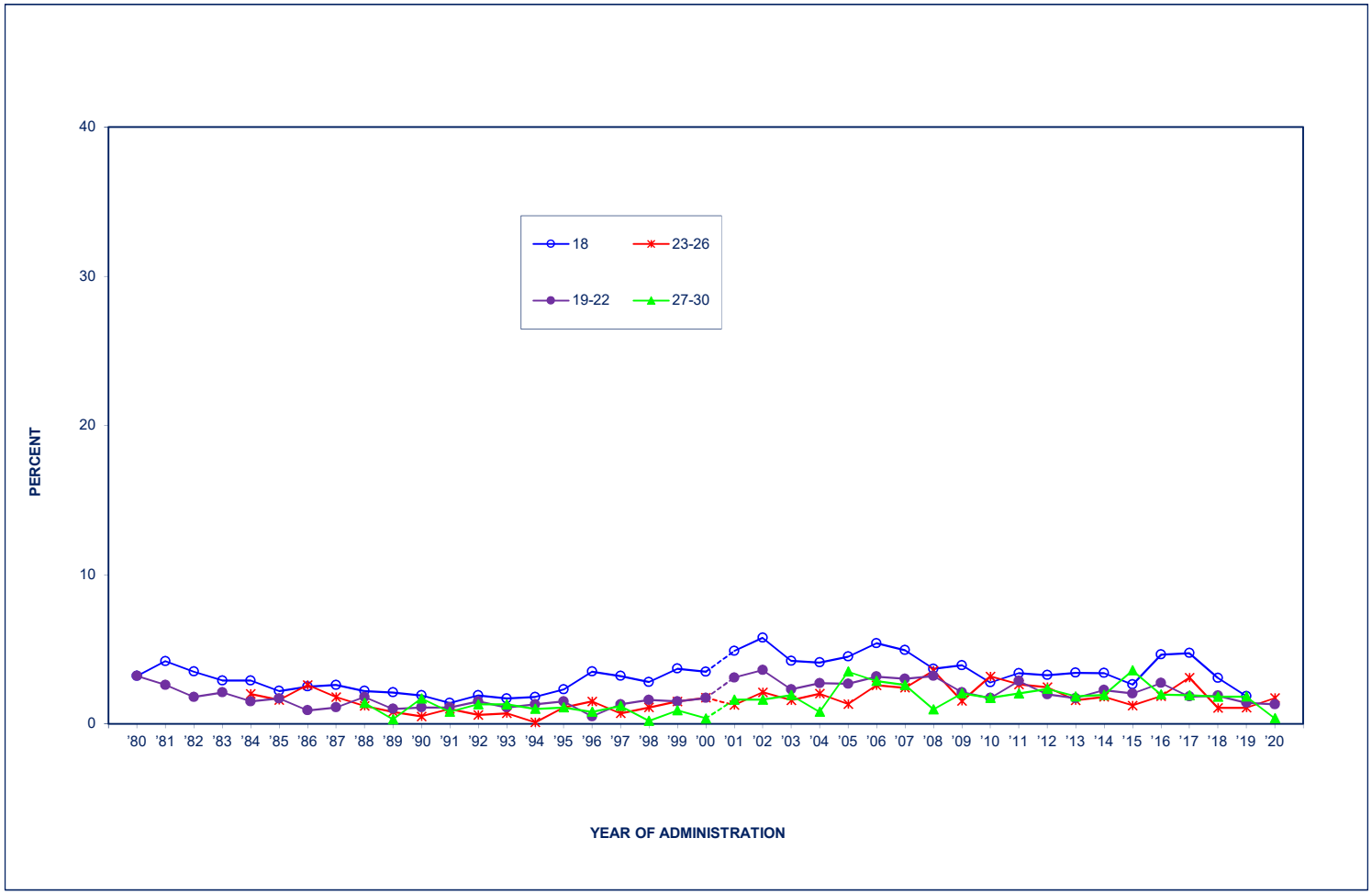
% Saying Any Exposure



Source. The Monitoring the Future study, the University of Michigan.

[a]In 2001 Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

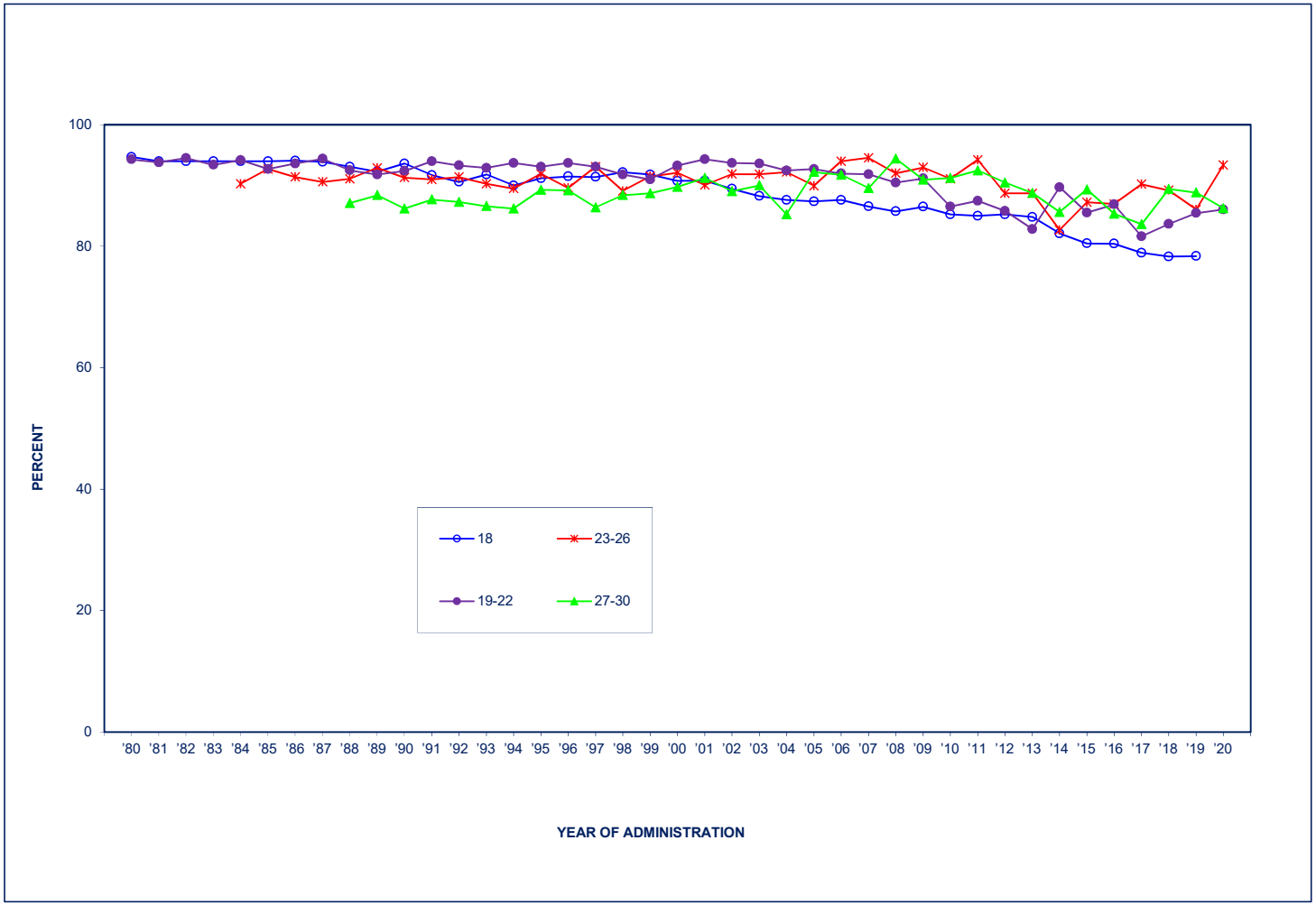
FIGURE 7-22
Trends in Direct Exposure to Use of TRANQUILIZERS[a]
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

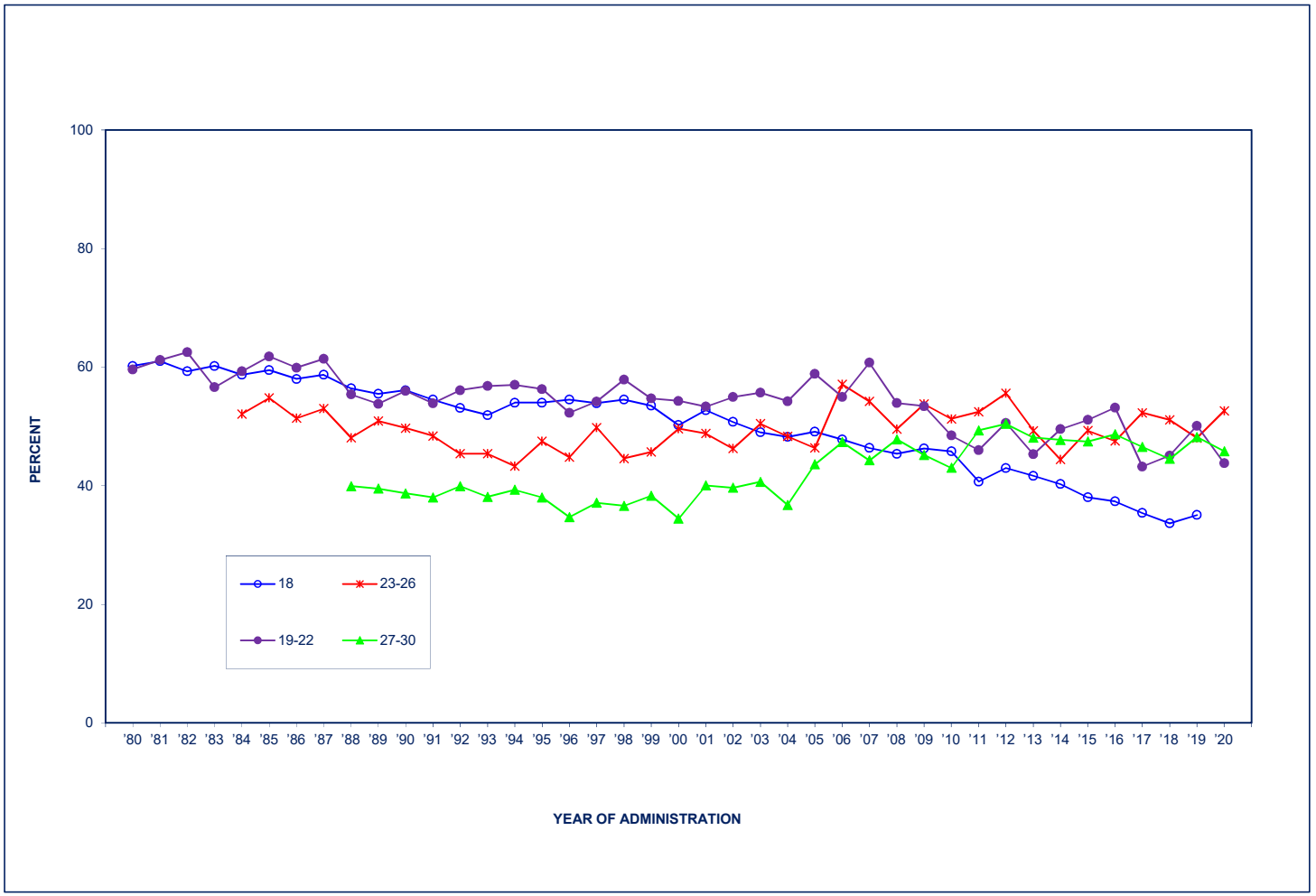
[a]In 2001 Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

FIGURE 7-23
Trends in Direct Exposure to Use of ALCOHOL
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

FIGURE 7-24
Trends in Direct Exposure to Use of ALCOHOL
among Respondents in Modal Age Groups of 18, 19–22, 23–26, and 27–30



Source. The Monitoring the Future study, the University of Michigan.

Chapter 8

PREVALENCE OF DRUG USE AMONG COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH

College students have often been the harbingers of social and political changes that eventually spread to other segments of the population up and down the age spectrum. The Monitoring the Future (MTF) study tracks multiple forms of substance use among U.S. college students and has done so for four decades. In this process, MTF has documented the fluctuations in college substance use as well as some patterns of influence on or by other age groups. This chapter focuses on the prevalence of drug use in 2020 among college students and their age-peers who graduated from high school but are not currently full-time students in college. As discussed in Chapter 3, these data were collected from March 2020 through November 2020, at the beginning and early part of the pandemic. The next chapter (Chapter 9) focuses on historical trends in drug use in these two groups.

Definition of College Students

College students are defined in this volume as those follow-up respondents *one to four years past high school* who report that they were taking courses as *full-time students* in a *two- or four-year college or university* at the *beginning of March* of the year in question. Note that full-time students at two-year colleges, such as community colleges, are included. The definition excludes those who are currently enrolled in college part-time and those who previously may have been college students or may have graduated from college by March one to four years after high school.

MTF has been able to generate an unparalleled national sample of college students and peers not in college every year since 1980 by following representative samples of sequential high school classes after they graduate. The graduating class of 1976 was the first such class followed after high school graduation, and by 1980 the survey included college students one to four years past high school.

The absence of high school dropouts in the original 12th grade samples should have practically no effect on the representativeness of these college samples, because very few high school dropouts go on to college. One notable limitation of the present design for the purpose of characterizing college students is that it limits the age range of the college sample. For trend estimation purposes (covered primarily in Chapter 9), we decided to limit the age band to the most typical one for college attendance, that is, one to four years past high school, which corresponds to modal ages 19 through 22. According to statistics available from the United States Census Bureau[1] and the National Center on Education Statistics,[2] this age band encompasses about 73% of all undergraduate college students enrolled full-time in 2019, down slightly from 75% in 2014 and from 79% in 1989. Although expanding the age band to include an additional two years would cover an even larger proportion of enrolled college students of any age, it would slightly reduce the homogeneity of the college sample by including older classmates, it would bring more four-year college graduates into the noncollege group, and it would limit historical comparability.

[1] U.S. Census Bureau, October 2014. Available at: http://www.census.gov/
[2] National Center on Education Statistics, Fall 2019 Enrollment. Available at: https://nces.ed.gov/

Auxiliary analyses conducted in 2017, which updated similar analyses done in 2011, 1997, and 1985, indicated extremely small differences in the estimates of drug use prevalence under the two definitions (four- vs. six-year intervals) for college students. In all the years we evaluated this, the annual prevalence of all drugs shifted 0.5 percentage points or less, with few exceptions; specifically, based on the 2017 analyses, the difference was 0.6 percentage points for hallucinogens other than LSD, and 0.7 percentage points for MDMA (ecstasy, Molly). Thus, for purposes of estimating prevalence, the four- and six-year intervals are nearly interchangeable, suggesting that this limitation is negligible for our purposes of estimating current prevalence and historical trends (in Chapter 9).

The MTF panels also include high school graduates one to four years past high school who were *not* attending college full time during March of the year in question. Having data for both groups is a rare and valuable feature of the MTF follow-up design and makes it possible to compare differences and changes in the use of various substances after high school for each group. Full-time college students as defined here now constitute almost two-thirds (63%) of the entire follow-up sample one to four years past high school, which contributes to relatively smaller sample sizes for noncollege youth (and thus less precision in our estimates). If data from the missing high school dropout segment—which has declined from around 15% to roughly 6% of a class cohort as summarized in Chapter 1—were available for inclusion as part of the noncollege segment, any difference between the two groups in terms of their substance use would likely be greater.

PREVALENCE OF DRUG USE AMONG COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH

For many illicit substances, noncollege youth had higher prevalence than college students in 2020, with some exceptions as noted below. As is typically the case, college students tended to be higher on some measures of alcohol use but lower on all measures of cigarette use compared to noncollege youth in 2020. The degree of differences between college and noncollege youth varied considerably by type of drug and measure of prevalence (lifetime, annual, 30-day, and daily), as Tables 8-1 through 8-4 show. Important gender differences in the college vs. noncollege comparisons are shown in the tables and summarized in a subsection below.

- In 2020, annual prevalence of use of ***any illicit drug*** was similar for college students (46%) and for noncollege respondents (45%) (Table 8-2); however, 30-day prevalence was higher for noncollege respondents (30%) than for college students (25%) (Table 8-3). The annual prevalence of using ***any illicit drug other than marijuana***[3] (including hallucinogens, cocaine, heroin and other narcotics, amphetamines, sedatives (barbiturates) or tranquilizers not under a doctor's orders) was somewhat higher among noncollege respondents (19%) than among college students (16%), and the same was true for 30-day prevalence (8.9% and 6.0%, respectively).

- The annual prevalence of ***marijuana*** use was similar for college students (44%) and for noncollege respondents (43%) in 2020 (Table 8-2); however, 30-day marijuana prevalence was higher for noncollege youth (29%) than for college students (25%) (Table 8-3).

[3] See Chapter 3 for discussion of legal status of marijuana and our terminology.

- The prevalence of current **daily marijuana** use (using on 20 or more occasions in the past 30 days) was considerably higher for noncollege respondents (13%) compared to the college students (7.9%) (Table 8-4).

- With regard to ***vaping marijuana*** annual prevalence in 2020 was similar across college students (25%) and noncollege youth (24%) (Table 8-2), and the same was true for 30-day prevalence of vaping marijuana (12% for college students and 14% for noncollege youth) (Table 8-3).

- In 2020, 3.5% of noncollege youth and 1.3% of college students reported annual use of ***narcotics other than heroin*** without medical supervision (Table 8-2). With respect to annual use of specific drugs in this class, ***Vicodin*** was used by 2.6% of noncollege youth vs. 1.2% of college students; the corresponding numbers for ***OxyContin*** were 3.4% and 1.5%.[4] Thus, for this important class of illicit drugs, annual prevalence was relatively low in 2020 but more than double among noncollege youth compared to college students.

- In 2020, annual ***cocaine*** use was higher among noncollege respondents (7.1%) than among college students (3.8%) (Table 8-2).

- Several of the less commonly used illicit drugs showed annual prevalence for noncollege respondents in 2020 that was two or more times the college student rates, including ***heroin***, ***methamphetamine,*** and ***ketamine*** (Table 8-2).

- The use of ***hallucinogens*** was somewhat higher among noncollege youth in 2020. Among noncollege youth and college students, respectively, annual use of hallucinogens was 9.8% and 8.6%, annual use of ***LSD*** was 7.3% and 5.8%, annual use of ***hallucinogens other than LSD*** was 6.9% and 5.8%, and annual use of ***MDMA*** (ecstasy, Molly) was 5.5% and 3.7% (Table 8-2).

- ***Amphetamine*** use without a doctor's prescription was similar for college students and noncollege youth. Annual prevalence of amphetamine use among college students was 6.5% in 2020, compared to 6.3% in the noncollege group (Table 8-2). Annual prevalence of ***Adderall***[5] use without medical supervision was similar for college students (7.2%) and for noncollege respondents (8.7%) in 2020. The nonmedical use of ***Ritalin***, another but now less common stimulant drug prescribed for ADHD, was low in the college and noncollege groups in 2020 (annual prevalence was 1.4% and 2.7% respectively). As we discuss in Chapter 9 when considering trends among college and noncollege respondents, amphetamine use prior to 2020 was typically higher among college students than noncollege respondents, likely due to amphetamine use (and particularly use of Adderall) for study purposes.

[4] The prevalence of OxyContin, a subclass of narcotics other than heroin, is asked on three of the six questionnaire forms, whereas the prevalence of narcotics other than heroin is asked on all six forms. The annual prevalence of OxyContin is similar to the annual prevalence of narcotics other than heroin, reflecting that OxyContin is a commonly used narcotic. When annual prevalence of OxyContin slightly exceeds the annual prevalence of narcotics other than heroin, this is likely a matter of random sample variation due to relatively small sample sizes for OxyContin.
[5] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. The annual prevalence of Adderall is similar to the annual prevalence of amphetamines for both college and noncollege respondents, reflecting that Adderall is a commonly used amphetamine. When annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamines, this is likely a matter of random sample variation due to relatively small region sample sizes for Adderall.

- In 2020, college students and noncollege respondents were similar in annual prevalence of ***sedatives (barbiturates)*** (1.7% for both) and of ***tranquilizers*** (2.6% and 3.5%, respectively) (Table 8-2).

- In 2020, college students were higher than noncollege youth in annual ***alcohol*** use (77% vs. 67%) and in 30-day use (56% vs. 49%) (Tables 8-2 and 8-3).

- In 2020, college students and noncollege respondents had similar prevalence of ***binge drinking*** (five or more drinks in a row at least once in the past two weeks; 24% for both) (Table 8-4). As discussed in Chapter 9 when considering trends in use, binge drinking has typically been more prevalent among college students than noncollege youth over the years prior to 2020. More college students (28%) reported having ***been drunk*** in the prior 30 days, compared to noncollege respondents (22%) (Table 8-3). Both groups had relatively low ***daily drinking*** prevalence, with it being similar in 2020 among college students (2.4%) and noncollege youth (1.5%) (Table 8-4). Back in high school, college-bound students, especially in earlier grades, were far less likely to drink alcohol at any level compared to their noncollege-bound peers *(see Volume I)*; thus, both relative and absolute increases in most indices of alcohol use among college students in the first few years following high school are quite striking.

- Beginning in 2005, we have given explicit attention to the problem of ***high-intensity drinking*** (also referred to as extreme binge drinking). We introduced questions asking respondents about the frequency in the past two weeks of having 10 or more drinks in a row and of having 15 or more drinks in a row. The 10+ item was included on one of six questionnaire forms through 2014, on two forms 2015-2018, and five forms in 2019-2020 (the 15+ item has been on only one form throughout, thus we do not report the 2020 prevalence here but we consider trends for combined years in Chapter 9). In 2020, the prevalence of having ***10 or more drinks in a row*** was 12% for both college students and noncollege respondents (Table 8-4).[6,7,8] Trends since 2005 are reported in Chapter 9 (Tables 9-4, 9-5, and 9-6) where we document a general downward trend, especially for college students. As discussed below, there is a dramatic gender difference in the prevalence of this behavior.

- In 2020, annual prevalence of using ***flavored alcoholic beverages*** was higher for college students (81%) than for noncollege respondents (72%) (Table 8-2).

- In 2020, annual prevalence of ***alcoholic beverages mixed with energy drinks*** was similar for the college and noncollege groups (21% and 20%, respectively) (Table 8-2).

[6] See Patrick & Terry-McElrath (2017) for differences in 5+, 10+, and 15+ drinking by non-attenders, part-time college attenders, 2-year college attenders, and 4-year college attenders. Patrick, M. E., & Terry-McElrath, Y. M. (2017). High-intensity drinking by underage young adults in the United States. *Addiction, 112,* 82-93.

[7] Patrick, M. E., Terry-McElrath, Y. M., Kloska, D. D., & Schulenberg, J. E. (2016). High-intensity drinking among young adults in the United States: Prevalence, frequency, and developmental change. *Alcoholism: Clinical and Experimental Research, 40*, 1905-1912.

[8] Patrick, M. E., Terry-McElrath, Y. M., Miech, R. A., Schulenberg, J. E., O'Malley, P. M., & Johnston, L. D. (2017). Age-specific prevalence of binge and high-intensity drinking among U.S. young adults: Changes from 2005 to 2015. *Alcoholism: Clinical and Experimental Research, 41,* 1319-1328.

- Among all substances studied, the largest differences for annual, 30-day, and daily prevalence levels between college and noncollege groups occur for ***cigarette smoking***. In particular, the prevalence of 30-day smoking in 2020 was three times as high among noncollege youth (13.1%) as among college students (4.1%) (Table 8-3); proportional differences were even greater for daily smoking (7.0% for noncollege youth and 1.4% for college students) and smoking a half pack or more per day (2.3% for noncollege youth and 0.2% for college students) (Table 8-4). The 12th grade data show the college-bound have much lower smoking levels in high school than the noncollege-bound; thus, in contrast to what was true for alcohol use, these substantial differences observed at college age actually largely preceded college attendance.[9] The smoking differences would be even greater if dropouts were included in the noncollege group, because dropouts have consistently shown an exceptionally high rate of smoking.[10]

- In 2020, annual prevalence of ***vaping nicotine*** was similar for college students (33%) and noncollege respondents (31%) (Table 8-2); however, 30-day prevalence was higher for noncollege respondents (24%) than for college students (19%) (Table 8-3). As discussed in Chapter 9 when considering trends, college students have had higher prevalence of vaping nicotine than noncollege respondents the past few years prior to 2020. Prevalence of ***vaping just flavoring*** was similar for college students and noncollege youth; for the two groups, respectively, annual prevalence was 13% and 12% (Table 8-2) and 30-day prevalence was 5.8% and 6.4% (Table 8-3).

Selective Summary of 2020 Prevalence among College and Noncollege Respondents

In 2020, annual prevalence of ***any illicit drug*** was similar for college and noncollege respondents (46% and 45% respectively), but the annual prevalence of ***any illicit drug other than marijuana*** was somewhat higher for noncollege respondents (19%) than college students (16%). Noncollege youth had somewhat higher 30-day prevalence than college students of use of any illicit drug (30% and 25% respectively) and of any illicit drug other than marijuana (8.9% and 6.0%, respectively). Annual prevalence of marijuana use was similar for college and noncollege respondents (44% and 43%, respectively), but 30-day use was somewhat higher for noncollege respondents (29%) than for college students (25%). As has been true in recent years, noncollege youth had much higher prevalence of ***daily marijuana*** use than college students (13% vs. 7.9%, respectively). Regarding ***vaping marijuana***, annual and 30-day prevalence estimates in 2020 were similar for college and noncollege respondents. Noncollege youth had higher annual prevalence compared to college students in 2020 for use of ***narcotics other than heroin*** (though annual prevalence was quite low) and of ***cocaine***; in addition, they had somewhat higher annual prevalence of ***hallucinogens***, including ***LSD*** and ***hallucinogens other than LSD***, and of ***MDMA*** (ecstasy, Molly). College students and noncollege respondents had similar annual prevalence in 2020 of ***amphetamines*** (as discussed in Chapter 9, up until 2020 amphetamine use was more common among college students), of ***sedatives (barbiturates)***, and of ***tranquilizers***. As has been true for years, many measures of alcohol use showed higher prevalence among college students than noncollege youth

[9] See also Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities.* Mahwah, NJ: Lawrence Erlbaum Associates.

[10] For an analysis showing much higher smoking rates among 8th graders who later dropped out before completing high school, see Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drug use, and delinquency.* New York: Lawrence Erlbaum Associates/Taylor & Francis.

in 2020; however, for ***binge drinking*** (5 or more drinks in a row in the past two weeks) and ***high-intensity drinking*** (having 10 or more drinks in a row in the past two weeks) prevalence was similar for college and noncollege youth in 2020 (as discussed in Chapter 9, up until 2020 binge drinking was more common among college students). The higher levels of alcohol use among college students emerged only after high school; during high school alcohol use was lower among those who would later go on to college. As has been true all along, ***cigarette*** use is much more common among noncollege youth than college students. Finally, regarding ***vaping nicotine*** in 2020, annual prevalence was similar for college students and noncollege youth, but 30-day prevalence was higher among the noncollege respondents (as discussed in Chapter 9, in the past few years prior to 2020 vaping nicotine was more prevalent among college students). In Chapter 9, we consider historical shifts in college vs. noncollege differences in prevalence of substance use.

GENDER DIFFERENCES IN PREVALENCE OF USE AMONG COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH

Data stratified by gender (within college students and noncollege youth) are provided in Tables 8-1 to 8-4.

- Many gender differences, especially among college students, replicated many of those discussed in Chapter 4 for all young adults one to 12 years past high school.

- Among college students in 2020, annual prevalence of use of ***any illicit drug*** was higher for men than for women (49% and 43%, respectively) (Table 8-2); and the same was true for 30-day use (30% and 22%, respectively) (Table 8-3). In contrast, for noncollege youth, annual prevalence was higher for women than for men (47% and 42%, respectively); and the same was true for 30-day use (31% and 28%, respectively).

- Among college students in 2020, annual prevalence of ***any illicit drug other than marijuana*** was higher for men (22%) than women (12%) (Table 8-2); and the same was true for 30-day use (8.8% and 4.2%, respectively) (Table 8-3). Among noncollege youth, annual prevalence was similar for men (19%) and women (21%), and the same was true for 30-day use (9.2% and 8.7%, respectively).

- Annual ***marijuana*** use was somewhat higher among college men (46%) than college women (43%) in 2020 (Table 8-2), whereas 30-day use was distinctly higher among college men (30% and 21%, respectively) (Table 8-3). Among noncollege youth, annual use was somewhat higher among women (45%) than men (41%), and the same was true for 30-day use (31% and 27%, respectively). ***Daily marijuana*** use was higher among college men (11%) compared to college women (6.1%) and also higher for noncollege men (15%) than noncollege women (11%), although the prevalence of daily use for both genders was higher for the noncollege than college group as summarized above (Table 8-4).

- With regard to ***vaping marijuana***, annual prevalence in 2020 was higher among college men than college women (28% vs. 23%); but noncollege men and women were similar in annual vaping prevalence (24% and 22%, respectively) (Table 8-2). Among college

students, 30-day prevalence of vaping marijuana in 2020 was somewhat higher among men than women (15% vs. 11%); however, among noncollege youth, women and men were similar (15% vs. 14%) (Table 8-3).

- Among college students, annual prevalence of any ***hallucinogen use*** in 2020 was considerably higher for men than for women (13% vs. 6.2%), and the same was true for annual prevalence of ***LSD*** (9.1 and 3.7, respectively) and of ***hallucinogens other than LSD*** (8.4% vs. 4.4%). ***MDMA*** (ecstasy and Molly) showed a smaller difference (4.8% vs. 3.2%) (Table 8-2). Among noncollege respondents, the gender gap was narrower; annual prevalence was higher for men than for women for use of any ***hallucinogens*** (12% vs. 8.4%), for use of ***LSD*** (8.9% vs. 5.9%), and for use of ***hallucinogens other than LSD*** (7.7% vs. 6.0%). ***MDMA*** (ecstasy and Molly) use was similar for men and women (5.6% vs. 6.2%) (Table 8-2).

- Among college students, annual prevalence of ***narcotics other than heroin*** without medical supervision was quite low, and similar among men (0.8%) and women (1.4%) in 2020; the same was true for ***OxyContin*** (2.1% and 0.9%, respectively[11]) and ***Vicodin*** (1.7% and 1.0%, respectively) (Table 8-2). Among noncollege youth, the annual prevalence of ***narcotics other than heroin*** was somewhat higher for women (4.3%) than for men (2.9%), and the same was true for annual prevalence of ***OxyContin*** (4.7% and 2.4%, respectively) and annual prevalence of ***Vicodin*** (3.6% and 1.7%, respectively (Table 8-2).

- Annual ***cocaine*** use in 2020 was a bit higher among college men (5.0%) and women (3.1%); and the same was true among noncollege men (8.0%) and women (6.8%) (Table 8-2).

- Annual ***amphetamine*** use without medical supervision in 2020 was higher among college men (8.4%) than college women (5.3%), and the same was true for annual prevalence of ***Adderall***[12] (10% and 5.4%, respectively) and for annual prevalence of ***Ritalin*** (2.2% and 1.0%, respectively) (Table 8-2). Among noncollege youth annual ***amphetamine*** prevalence was similar among men (7.2%) and women (5.8%), and the same was true for the annual prevalence of ***Adderall*** (8.8% and 9.4%, respectively) and of ***Ritalin*** (3.1% and 2.7%, respectively) (Table 8-2).

- Regarding the nonmedical use of ***sedatives (barbiturates)***, annual prevalence was similarly low for college men and women (1.4% and 1.8%, respectively), as was the case for noncollege men and women (1.2% and 2.1%, respectively) (Table 8-2). Annual prevalence of nonmedical use of ***tranquilizers*** was also similar and fairly low for both college men

[11] The prevalence of OxyContin, a subclass of narcotics other than heroin, is asked on three of the six questionnaire forms, whereas the prevalence of narcotics other than heroin is asked on all six forms. The annual prevalence of OxyContin is similar to the annual prevalence of narcotics other than heroin, reflecting that OxyContin is a commonly used narcotic. When annual prevalence of OxyContin slightly exceeds the annual prevalence of narcotics other than heroin, this is likely a matter of random sample variation due to relatively small sample sizes for OxyContin.

[12] The prevalence of Adderall, a subclass of amphetamines, is asked on three of the six questionnaire forms, whereas the prevalence of amphetamines is asked on all six forms. The annual prevalence of Adderall is similar to the annual prevalence of amphetamines for each sub-group considered here, reflecting that Adderall is a commonly used amphetamine. When annual prevalence of Adderall slightly exceeds the annual prevalence of amphetamines, this is likely a matter of random sample variation due to relatively small region sample sizes for Adderall.

and women (2.8% and 2.3%, respectively), and for noncollege men and women (3.0% and 4.5%, respectively).

- Among college students in 2020, ***30-day alcohol*** use was somewhat higher for women than men (57% and 53%, respectively), and the same was true for 30-day prevalence of ***being drunk*** (30% and 26%, respectively) (Table 8-3). But college men were clearly higher than college women on prevalence of ***binge drinking*** (5+ drinks in a row at least once in the past two weeks) (32% vs. 20%) (Table 8-4). Among noncollege youth, ***30-day alcohol*** use was similar among men and women (both 48%) (Table 8-3), and the same was true for 30-day prevalence of ***being drunk*** (23% and 21%, respectively) (Table 8-3) and for two-week prevalence of ***binge drinking*** (23% and 24%, respectively) (Table 8-4).

- ***High intensity drinking*** (also known as extreme binge drinking), as reported here, pertains to the prevalence of having ***10 or more drinks in a row in the past two weeks***. In 2020, prevalence showed large gender differences in college and noncollege youth. Among college students, prevalence was over two times higher among men (17%) than women (8.2%). Similarly, among noncollege youth, prevalence was almost two times as high among men (15%) than women (8.0%). Prevalence of 10+ drinks in a row was similar for college and noncollege men, with about one-in-six engaging in this behavior; it was also similar for college and noncollege women with about one-in-twelve engaging in this behavior.[13]

- The annual prevalence of ***flavored alcoholic beverages*** in 2020 was similar for college men and women (82% and 80%, respectively) (Table 8-2), although 30-day prevalence was somewhat higher for college women (46%) than college men (42%) (Table 8-3). Among noncollege respondents, annual prevalence was higher for women (79%) than for men (65%), as was the case for 30-day prevalence (42% and 37%, respectively).

- Annual prevalence of ***alcoholic beverages mixed with energy drinks*** in 2020 was higher among college men (24%) than women (19%), and the difference was even larger among noncollege youth (31% and 11%, respectively).

- Among college students, 30-day prevalence of ***cigarette smoking*** was similarly low for men (4.2%) and women (3.9%) in 2020, whereas it was similarly high among noncollege men and women (14% and 13%, respectively) (Table 8-3); as discussed above, prevalence for both genders was much higher in the noncollege than in the college group. ***Daily smoking*** was similar for men and women in the college segment (1.3% and 1.4%, respectively), and among noncollege men and women (7.4% and 6.9%, respectively) (Table 8-4). Put another way, *daily smoking was over five times as high among noncollege men than college men (7.4% vs. 1.3%), and almost five times as high among noncollege women than college women (6.9% vs. 1.4%).* Prevalence of ***smoking a half pack or more per day*** among college students was less than 1% for both men and women; among noncollege respondents, it was similar among men (2.3%) and women (2.6%) (Table 8-4).

[13] For additional information on 10+ drinking by gender and college attendance, see Patrick, M. E., Terry-McElrath, Y. M., Kloska, D. D., & Schulenberg, J. E. (2016). High-intensity drinking among young adults in the United States: Prevalence, frequency, and developmental change. *Alcoholism: Clinical and Experimental Research, 40,* 1905-1912.

- Prevalence of most other types of tobacco use was typically higher among men than women in both the college and noncollege groups in 2020, as shown in Tables 8-2 and 8-3.

- With regard to ***vaping nicotine***, annual prevalence was considerably higher among college men (39%) than women (30%); among noncollege youth, it was slightly higher for men than women (32% versus 28%) (Table 8-2). Thirty-day prevalence was higher for college men than women (22% versus 17%); among noncollege youth it was similar for men and women (24% and 23%, respectively) (Table 8-3). As discussed in Chapter 9, in the past few years prior to 2020 college men had the highest annual and 30-day prevalence of vaping nicotine, but in 2020 this was true only for annual prevalence.

Selective Summary of Gender Differences in 2020 Prevalence

In sum, certain licit and illicit drugs were used by a higher proportion of college men than college women in 2020, but there were many cases where their prevalence of use was similar. College men compared to college women reported higher annual and 30-day prevalence of ***illicit drug*** use ***other than marijuana***, of ***marijuana*** use, and of ***vaping marijuana***; college men also had higher prevalence of ***daily marijuana*** use than college women. College men reported higher annual prevalence than college women of ***any hallucinogens, LSD***, ***hallucinogens other than LSD, MDMA*** (ecstasy, Molly), and ***amphetamines*** including ***Adderall.*** College men and women were similar regarding annual prevalence of ***narcotics other than heroin***, ***cocaine***, ***sedatives (barbiturates)***, and ***tranquilizers***. Regarding alcohol use, college women were somewhat higher than college men on 30-day prevalence of alcohol use, of being drunk, and of flavored alcoholic beverages; college men were higher on two-week prevalence of ***binge drinking*** and of ***high intensity drinking***. College men and women reported similar prevalence of ***30-day cigarette use*** and of ***daily smoking***. ***Vaping nicotine***, in terms of both annual and 30-day prevalence, was higher among college men than college women.

Gender differences for the noncollege segment were sometimes less distinct, with noncollege men and women being similar or only slightly different on most indices of illicit and licit drug use, including vaping in 2020. Noncollege women compared to noncollege men were slightly higher on annual and 30-day prevalence of ***any illicit drug*** and of ***marijuana*** use, as well as on annual prevalence of ***narcotics other than heroin***. Noncollege men were higher than noncollege women on ***daily marijuana*** use and annual prevalence of ***hallucinogen*** use. Noncollege men and women were similar on most indices of ***alcohol use*** (including ***binge drinking***), but noncollege men were distinctly higher on ***high-intensity drinking***. Noncollege men and women were similar on measures of ***nicotine*** use, including ***vaping*** of ***nicotine***.

College men and noncollege men were similar on many indices of substance use in 2020, with some important exceptions. College men, compared to noncollege men, reported higher annual prevalence of ***marijuana*** use, of ***vaping marijuana***, and of ***vaping nicotine***; they reported lower annual prevalence of ***cocaine*** and ***narcotics other than heroin***, and lower prevalence of ***daily marijuana*** use. College men reported higher prevalence of 2-week ***binge*** and ***high intensity drinking***; noncollege men reported distinctly higher prevalence of ***tobacco*** use.

College women and noncollege women were often quite different in their substance use in 2020, with noncollege women showing higher annual prevalence estimates of ***marijuana*** and most all illicit substances (except for ***amphetamines***); similarly, 30-day ***marijuana*** and ***other illicit drug*** use were higher for noncollege women, as were ***daily marijuana*** use and all measures of ***tobacco*** use. Annual prevalence of ***vaping marijuana*** and of ***vaping nicotine*** were similar for college and noncollege women, with noncollege women reporting higher 30-day prevalence estimates of both. College women, compared to noncollege women, reported higher 30-day prevalence of ***alcohol use***, ***being drunk***, and ***flavored alcoholic beverages***; but they reported lower prevalence of ***binge drinking***. We consider recent historical shifts in gender differences among college and noncollege youth in Chapter 9.

TABLE 8-1
Lifetime Prevalence of Use for Various Types of Drugs, 2020: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

	Total		Men		Women	
	Full-Time College	Non-College	Full-Time College	Non-College	Full-Time College	Non-College
Any Illicit Drug [1]	56.3	61.5	58.3	56.2	54.9	64.3
Any Illicit Drug other than Marijuana [1]	22.6	31.0	31.1	29.4	17.3	32.1
Marijuana	55.4	58.7	57.0	52.7	54.4	62.5
Inhalants [2]	4.5	6.4	5.1	6.9	4.2	5.5
Hallucinogens [3]	11.2	16.2	17.8	18.5	7.4	13.1
LSD [3]	9.0	13.9	14.4	16.3	5.7	11.3
Hallucinogens other than LSD [3]	7.8	11.7	13.0	13.8	4.8	8.7
MDMA (ecstasy, molly) [4]	6.6	11.6	10.5	11.3	4.5	11.2
Cocaine	5.9	12.4	7.8	11.6	4.8	12.9
Crack [8]	0.6	1.7	*	1.1	0.9	2.5
Other Cocaine [8]	5.3	1.8	1.7	1.0	6.9	0.7
Heroin	0.4	1.0	0.5	1.1	0.4	1.0
With a Needle [5]	0.5	0.5	0.5	0.6	0.5	0.4
Without a Needle [5]	*	0.7	*	1.4	*	*
Narcotics other than Heroin [6]	4.1	7.7	4.8	7.8	3.5	7.2
Amphetamines, Adjusted [6,7]	10.6	13.4	15.1	13.6	7.6	13.0
Methamphetamine [5]	0.2	3.0	0.5	1.9	*	3.6
Sedatives (Barbiturates) [6]	2.8	6.0	3.4	5.6	2.3	6.6
Tranquilizers [6]	4.9	10.0	6.6	8.5	3.8	11.9
Alcohol	79.2	72.4	75.9	69.2	80.9	74.4
Been Drunk [2]	65.1	53.7	64.0	51.0	65.7	56.3
Flavored Alcoholic Beverages [8]	90.0	78.8	90.8	69.7	89.6	87.9
Cigarettes	—	—	—	—	—	—
Any Vaping	49.3	50.9	50.5	54.4	49.1	46.1
Vaping Marijuana	34.6	34.2	37.8	32.3	32.8	34.4
Vaping Nicotine	47.3	46.2	50.1	47.0	46.1	43.8
Vaping Just Flavoring	32.8	34.5	32.1	31.5	33.7	35.1
Approximate Weighted N =	*980*	*570*	*350*	*250*	*610*	*280*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

' — ' indicates data not available.

See footnotes following Table 8-4.

TABLE 8-2
Annual Prevalence of Use for Various Types of Drugs, 2020: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

	Total		Men		Women	
	Full-Time College	Non-College	Full-Time College	Non-College	Full-Time College	Non-College
Any Illicit Drug [1]	45.6	44.9	49.0	42.1	43.2	46.5
Any Illicit Drug other than Marijuana [1]	16.2	19.4	21.8	19.0	12.4	20.5
Marijuana	43.9	43.0	45.9	40.5	42.5	44.9
Synthetic Marijuana [2]	0.5	3.7	0.4	2.3	0.6	5.4
Inhalants	1.2	1.4	1.3	1.7	1.1	1.3
Hallucinogens [3]	8.6	9.8	12.5	11.6	6.2	8.4
LSD [3]	5.8	7.3	9.1	8.9	3.7	5.9
Hallucinogens other than LSD [3]	5.8	6.9	8.4	7.7	4.4	6.0
MDMA (ecstasy, molly) [4]	3.7	5.5	4.8	5.6	3.2	6.2
Salvia [2]	0.3	2.3	*	2.8	0.5	2.1
Cocaine	3.8	7.1	5.0	8.0	3.1	6.8
Crack [8]	*	1.7	*	1.1	*	2.5
Other Cocaine [8]	2.7	0.8	0.9	1.0	3.7	0.7
Heroin	*	0.4	*	0.2	*	0.5
With a Needle [5]	*	0.3	*	0.6	*	*
Without a Needle [5]	*	*	*	*	*	*
Narcotics other than Heroin [6]	1.3	3.5	0.8	2.9	1.4	4.3
OxyContin [2,6]	1.5	3.4	2.1	2.4	0.9	4.7
Vicodin [2,6]	1.2	2.6	1.7	1.7	1.0	3.6
Amphetamines, Adjusted [6,7]	6.5	6.3	8.4	7.2	5.3	5.8
Ritalin [2,6]	1.4	2.7	2.2	3.1	1.0	2.7
Adderall [2,6]	7.2	8.7	10.0	8.8	5.4	9.4
Methamphetamine [5]	*	1.2	*	1.3	*	0.6
Sedatives (Barbiturates) [6]	1.7	1.7	1.4	1.2	1.8	2.1
Tranquilizers [6]	2.6	3.5	2.8	3.0	2.3	4.5
GHB [5]	*	*	*	*	*	*
Ketamine [5]	0.3	3.0	0.9	3.9	*	2.6
Alcohol	76.7	66.9	73.8	64.4	78.2	67.9
Been Drunk [2]	58.0	40.2	57.9	40.1	58.2	41.3
Flavored Alcoholic Beverages [8]	80.8	72.3	82.2	65.0	80.0	79.3
Alcoholic Beverages mixed with Energy Drinks [5]	20.7	19.6	23.8	30.8	19.2	11.3

(Table continued on next page.)

TABLE 8-2 (cont.)
Annual Prevalence of Use for Various Types of Drugs, 2020: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

	Total		Men		Women	
	Full-Time College	Non College	Full-Time College	Non College	Full-Time College	Non College
Cigarettes	17.5	26.2	20.8	27.5	15.4	23.7
Tobacco using a Hookah [2]	8.3	13.5	11.1	13.1	7.0	13.7
Small Cigars [5]	10.7	13.5	17.7	21.2	6.4	7.7
Dissolvable Tobacco [5]	0.8	5.2	2.2	4.7	*	6.1
Snus [5]	2.2	8.4	5.4	12.1	0.4	6.1
Any Vaping	39.6	38.7	44.7	41.7	37.4	34.2
Vaping Marijuana	24.6	23.7	27.8	24.3	22.7	22.4
Vaping Nicotine	32.6	30.8	38.6	32.3	29.6	28.0
Vaping Just Flavoring	13.3	12.1	13.7	10.8	13.6	11.9
Approximate Weighted N =	*980*	*570*	*350*	*250*	*610*	*280*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

See footnotes following Table 8-4.

TABLE 8-3
Thirty-Day Prevalence of Use for Various Types of Drugs, 2020: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

	Total		Men		Women	
	Full-Time College	Non-College	Full-Time College	Non-College	Full-Time College	Non-College
Any Illicit Drug [1]	25.2	30.4	30.2	28.3	21.9	31.0
Any Illicit Drug other than Marijuana [1]	6.0	8.9	8.8	9.2	4.2	8.7
Marijuana	24.5	29.4	29.9	27.3	20.9	30.5
Inhalants [2]	0.4	0.2	1.0	0.5	*	*
Hallucinogens [3]	2.4	2.8	4.6	3.7	1.2	1.8
LSD [3]	1.1	1.8	2.1	2.1	0.5	1.2
Hallucinogens other than LSD [3]	1.5	1.7	3.0	2.3	0.7	1.0
MDMA (ecstasy, molly) [4]	0.8	1.1	1.4	1.8	0.5	0.6
Cocaine	1.4	2.6	1.6	2.4	1.2	2.7
Crack [8]	*	0.5	*	1.1	*	*
Other Cocaine [8]	0.9	*	*	*	1.4	*
Heroin	*	0.3	*	0.2	*	0.3
Narcotics other than Heroin [6]	0.5	1.0	0.3	1.0	0.6	1.1
Amphetamines, Adjusted [6,7]	1.6	2.8	2.7	4.0	0.9	2.1
Sedatives (Barbiturates) [6]	0.5	1.3	0.2	0.6	0.7	1.8
Tranquilizers [6]	0.4	1.2	0.3	0.9	0.4	1.6
Alcohol	55.7	48.9	53.0	48.3	56.8	47.8
Been Drunk [2]	27.6	22.4	25.6	23.4	29.5	21.0
Flavored Alcoholic Beverages [8]	44.7	40.1	42.4	36.8	46.0	41.8
Cigarettes	4.1	13.1	4.2	13.7	3.9	12.6
Any Vaping	23.9	27.1	27.4	28.7	22.2	25.4
Vaping Marijuana	12.4	14.3	15.3	13.8	10.7	14.6
Vaping Nicotine	18.6	23.6	21.8	24.2	17.0	22.7
Vaping Just Flavoring	5.8	6.4	8.1	5.5	4.7	6.0
Large Cigars [8]	1.8	4.7	3.6	11.9	0.9	*
Flavored Little Cigars [8]	2.4	12.5	3.9	15.8	1.7	10.4
Regular Little Cigars [8]	2.5	8.4	3.6	16.0	2.0	2.8
Approximate Weighted N =	*980*	*570*	*350*	*250*	*610*	*280*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

See footnotes following Table 8-4.

TABLE 8-4
Thirty-Day Prevalence of Daily [9] Use for Various Types of Drugs, 2020: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

	Total		Men		Women	
	Full-Time College	Non College	Full-Time College	Non College	Full-Time College	Non College
Marijuana	7.9	13.0	10.7	14.9	6.1	10.7
Alcohol						
Daily	2.4	1.5	4.9	2.3	1.0	1.0
5+ Drinks in a Row in Last 2 Weeks	24.2	23.9	31.5	23.3	19.6	23.9
10+ Drinks in a Row in Last 2 Weeks [3]	11.9	12.3	17.2	15.0	8.2	8.0
Cigarettes						
Daily	1.4	7.0	1.3	7.4	1.4	6.9
1/2 Pack+/Day	0.2	2.3	0.7	2.3	*	2.6
Approximate Weighted N =	*980*	*570*	*350*	*250*	*610*	*280*

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' * ' indicates a prevalence rate of less than 0.05%.

See footnotes on the following page.

Footnotes for Tables 8-1 through 8-4

[1]Use of any illicit drug includes any use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders.

[2]This drug was asked about in three of the six questionnaire forms. Total *N* in 2020 for college students is approximately 490.

[3]This drug was asked about in five of the six questionnaire forms. Total *N* in 2020 for college students is approximately 820.

[4]This drug was asked about in four of the six questionnaire forms. Total *N* in 2020 for college students is approximately 650.

[5]This drug was asked about in two of the six questionnaire forms. Total *N* in 2020 for college students is approximately 330.

[6]Only drug use that was not under a doctor's orders is included here.

[7]Based on the data from the revised question, which attempts to exclude inappropriate reporting of nonprescription amphetamines.

[8]This drug was asked about in one of the six questionnaire forms. Total *N* in 2020 for college students is approximately 160.

[9]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes, measured as actual daily use, and 5+ drinks, measured as having five or more drinks in a row in the last two weeks.

Chapter 9

TRENDS IN DRUG USE AMONG COLLEGE STUDENTS AND SAME-AGE NONCOLLEGE YOUTH

In this chapter we consider recent and longer-term trends in substance use among college students and same-age noncollege respondents.

When considering historical trends, it is important to highlight cohort effects and secular trends (or period effects). In the 1970s through 1990s changes in drug use tended to move up or down the age spectrum, reflecting cohort effects. But during the 1960–70s drug epidemic, illicit drug use increased dramatically among U.S. college students, then spread quickly to their noncollege peers and eventually down the age spectrum to high school and even middle school students. The diffusion process reversed during the epidemic relapse in the 1990s when drug use increased first among those in early adolescence and then radiated up the age spectrum as those cohorts grew older (reflecting a cohort effect). The cohort effect continued as use subsequently declined among adolescents and this decline moved up the age spectrum. In the early 2000s, college students and high school seniors showed simultaneous decreases and then increases in marijuana use as well as in the index of any illicit drug use (a secular trend, reflecting similar changes regardless of age/cohort).

Again, we define college students as *follow-up respondents (i.e., high school graduates) one to four years past high school who report that they were taking courses as full-time students at a two- or four-year college or university at the beginning of March in the year in question.* For more information, see the "Definition of College Students" subsection in Chapter 8.

Trend data are also provided here on the other high school graduates, those follow-up respondents who are one to four years past high school but do not meet our definition of full-time college students (Figures 9-1 through 9-18). These young people may be working full- or part-time, not working at all, and/or attending a two- or four-year college part-time. This is an important group by itself, given less is known about their substance use, as well as an important comparison group for the college students.

The proportion of young adult high school graduates one to four years beyond high school who attend college full-time has increased considerably since the MTF follow-ups began. In 2020, about 63% of the weighted number of follow-up respondents one to four years past high school met our definition of college students, compared with only 38% in the 1980 survey, the first survey to provide the full sampling of college students. This means, of course, that the proportion of our annual follow-up samples that is in the noncollege group of the same age has diminished considerably.

The difference between the college group and the noncollege group provides an estimate of the degree to which college students' usage levels for various substances are above or below other high school graduates in this age band. If we were able to include the high school dropout segment

in the calculations for the noncollege group, many of the differences with the college group would be accentuated.[1]

For each year, approximately 900–1,500 weighted respondents constitute the college student sample (numbers [*N*s] per year are listed in the tables) and roughly 500–1,700 respondents constitute the noncollege group one to four years beyond high school. Trend comparisons for these two groups are provided in this chapter, including significance tests of one-year and five-year trends. The reported results begin with 1980, the first year that enough follow-up surveys had accrued to characterize young high school graduates one to four years past high school. The 2020 survey is thus the 41st in the annual series on college students and noncollege-attending youth 1 to 4 years out of high school. Methods, sampling, and procedures are summarized in Chapter 3.

As we discuss in that chapter, for both the 2018 and 2019 data collections of 19-30 year olds, we randomly assigned half to receive typical mail surveys and half to a web-push condition (in which they were encouraged to complete a web-based survey, with mail surveys available upon request and for non-respondents). In 2020, the web-push condition became the standard for all 19-30 year olds. For past trends covering 2018 and 2019, it was important to examine possible survey condition differences. As we noted in Chapters 8 and 9 in the 2018 and 2019 editions of this volume, when discussing 2018 and 2019 prevalence estimates for college and noncollege youth, very few prevalence estimates varied significantly between the two conditions for either college or noncollege respondents; thus the two conditions were combined in those chapters and exceptions (i.e., when estimates between the two conditions differed significantly) were noted. In this current chapter on trends, we continue to combine the estimates from the two conditions in both 2018 and 2019, and we note the very few significant differences between conditions for college students in footnotes in Tables 9-1 through 9-4. Also, in addition to conducting significance tests of one-year trends (2019-2020) in the full college students sample, we provided supplement tests of the one-year trends, comparing the web-push sample in 2019 to the full (all web-push) sample in 2020; these supplemental findings are listed as footnotes in Tables 9-1 through 9-4 and as footnotes in the text when appropriate. As is shown, most all comparisons revealed trends in the same direction (about 92% of the comparisons), with any difference being a matter of degree.

Throughout much of the chapter, trends for the 12th grade samples are included for comparison purposes. It is important to keep in mind that the total 12th grade samples are shown and that there are substantial differences in prevalence of substance use *within* those samples between the college-bound and those who do not plan to complete a four-year college degree. As shown extensively in *Volume I*[2] and in *Occasional Paper 96*,[3] 12th grade students expecting to complete

[1] Panel analyses of samples from the high school classes of 1995–1997, followed for an eight-year period beginning when they were in 8th grade, clearly show that those who dropped out of high school had distinctly higher rates of substance use both before and after they left school. See Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drinking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis.

[2] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). Monitoring the Future national survey results on drug use, 1975-2020: Volume I, secondary school students. Ann Arbor, MI: Institute for Social Research, The University of Michigan.

[3] Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). *Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975-2020* (Monitoring the Future Occasional Paper No. 96). Ann Arbor, MI: Institute for Social Research, University of Michigan.

college are far less likely to smoke cigarettes and also less likely to use most other substances. So when considering figures that show higher levels of use among *all* 12th graders (regardless of college expectations) than among college students, it should not be concluded that use declined after college entrance; the college-bound were already lower in prevalence than other 12th graders for almost all substances.

One additional point is relevant to interpreting differences over time for those attending college and those not attending college, both in terms of the differences between them and trends over time for either taken separately: the proportion of college students who are women has risen substantially since 1980. In 1980, women constituted about 50% of the college respondents, but by 2020 they constituted 64%.[4] As will be discussed below, we have charted the trends separately for men and women college students to permit an assessment of what effect these changing proportions may have on the overall prevalence estimates observed for college students. (Note that in 2018, 2019, and 2020 the total sample included a small proportion who were missing on gender.)

TRENDS IN PREVALENCE, 1980–2020: COLLEGE STUDENTS, NONCOLLEGE YOUTH, AND 12TH GRADERS

- Regarding recent trends among college students, the *annual* prevalence of using ***any illicit drug*** (including marijuana)[5] rose gradually from a recent low of 34% in 2006 to 45-47% in 2018-2020, the highest it has been since 1986 (Table 9-2 and Figure 9-1). The 0.9 percentage point decrease from 2019 to 2020 was not statistically significant. The five-year trend (from 2015 to 2020) showed a 4.1 percentage point increase, which was not statistically significant. This short-term (since 2015) and the longer-term (since 2006) increase through 2020 for college students was driven primarily by an increase in marijuana use, as summarized below. In recent years, the noncollege group's annual prevalence of any illicit drug use has not differed much from that for college students, though in some of the past few years, it was higher for noncollege youth, reaching a recent high of 47% in 2016. In 2020, it was 45% (similar to 46% for college students). The five-year trend (from 2015 to 2020) for the noncollege respondents showed a nonsignificant 3.8 percentage point increase.

  Back during the first decade of MTF college student data, between 1980 and 1991, college student annual use of any illicit drug dropped fairly steadily, from 56% to 29%, a decrease of nearly half. After 1991, annual prevalence held fairly steady for a couple of years before rising gradually, reaching 38% in 1998 and again in 2001 before leveling at between 34% and 37% through 2012; since 2013 it increased to 2019 prevalence of 47%, the highest level for the past three-and-a-half decades (but still below the 1980 peak of 56%). Annual use of any illicit drug among noncollege respondents moved similarly until 2000, when their annual use exhibited a four-percentage-point increase due largely to their sharper increases in marijuana, amphetamine, and tranquilizer use. Their use then declined unevenly until 2007, and has since increased somewhat unevenly through 2020 (as did use by college students).

[4] As discussed in Chapter 3 on methods, panel data for this volume are weighted to help account for attrition through a post-stratification strategy. One result of that strategy is that the differential attrition with respect to gender (i.e., as is common in longitudinal research, we are more likely to lose men than women to follow-up) is accounted for to some extent.

[5] See Chapter 3 for discussion of legal status of marijuana and our terminology.

Twelfth-graders' annual use of any illicit drug showed a declining trajectory parallel to the other two groups from 1980 through 1991, but then followed with a much steeper increase through 1997 (in what we have called the "relapse phase" of the drug epidemic), leaving their prevalence considerably above the two older groups. Their use leveled after 1998 and then declined some after 1999 (by about six percentage points), whereas among college students (and the noncollege group) there was a continued increase through 2001 (reflecting a cohort effect), followed by a leveling as use among 12th graders continued to decline. As a result, all three groups had quite similar prevalence estimates by 2007. After 2009, use increased among the 12th graders but did so somewhat later among the college students, creating some new divergence before they converged in 2013. Between 2012 and 2020 annual prevalence increased among the college and noncollege groups but remained fairly steady among the 12th graders.

The divergences and convergences over the years among the three groups likely reflect cohort effects. After 2007 (2006 for college students), all three groups showed some increase in the annual prevalence of any illicit drug use—due largely to a turnaround in their use of marijuana, as described below—but the increase was greater and longer from 2007 to 2011 among the 12th graders, compared to college students, likely once again reflecting a cohort effect. Whether the divergence we are now seeing between 12th graders and the other two groups reflects another emerging cohort effect versus a distinct age effect (whereby substance use increases after high school) remains to be seen.

- Regarding recent trends, annual prevalence of ***any illicit drug other than marijuana*** (Figure 9-2) has diverged among the three groups since 2012 (when it was 17% to 18% for all three groups), declining considerably for 12th graders (11% in 2020) and declining some since 2014 for college students (16% in 2020). For noncollege respondents, it showed some uneven increase through 2016 (to 24%), and then decreased unevenly to 19% in 2020. For college students and noncollege respondents, none of the 1- or 5-year trends was significant.

  In considering longer-term trends, Figure 9-2 shows that since 1980, of the three groups the noncollege segment has usually had the highest levels of use of any illicit drug other than marijuana. An exception was during most of the 1990s (the relapse phase in the epidemic), when use among 12th graders rose sharply and exceeded use in the noncollege segment. The noncollege group also showed an increase during that phase, though slightly lagged, and passed the 12th graders in the early 2000s.

  An increase in use of any illicit drug other than marijuana among college students also occurred after around 1994, but it lagged considerably behind the upturn among 12th graders, reflecting a cohort effect. From 1986 through 2009, college students exhibited the lowest prevalence estimates. In the earlier period from 1980 to 1994, use of any illicit drug other than marijuana declined appreciably among college students, with their annual prevalence dropping by nearly two thirds from 32% to 12% (Table 9-2). This generally paralleled the trends for the noncollege group and the 12th graders, indicating a secular trend during that period. All three groups showed some increase in use during the early 1990s; however, the rise in use of illicit drugs other than marijuana was again not as sharp

among college students as it was in the other two groups, and it began two years later than among the 12th graders and one year later than among the noncollege group (Figure 9-2). This pattern is consistent with a cohort effect.

After 1999, use among 12th graders leveled off, whereas the college students and noncollege segment showed a continuing increase. In fact, the college students and noncollege respondents continued to show an increase in their annual prevalence rate from 1998 through 2004, before declining from 2005 through 2007 among the noncollege group and through 2008 among the college students. From 2008 to 2012 the rate increased among the college students and declined steadily among those in the noncollege group, closing the considerable gap between the noncollege group and both college students and 12th graders. Between 2009 and 2012, annual prevalence for college students and 12th graders converged. In 2012 all three groups had comparable annual prevalence at 17-18%.

As summarized above, starting in 2013, the three groups began diverging again (Figure 9-2). In 2013 and 2014, college students and their noncollege peers showed increases in annual use while use among 12th graders remained unchanged in 2013 and declined after 2014. The increase in use of any illicit drug other than marijuana among college students, from 15% in 2008 to 21% in 2014, was significant (Table 9-2). Thus by 2014 annual use of any illicit drug other than marijuana by college students exceeded that by 12th graders, approached that of the noncollege segment, and reached a new recent peak rate. This increase appeared attributable mostly to college students' increased use of ***amphetamines*** (without a doctor's orders) and of ***MDMA*** (***ecstasy***, ***Molly***)**.** However, in 2015 all three groups showed a decline in their annual use of any illicit drug other than marijuana: the noncollege group declined by a significant 5.3 percentage points and the college students by a nonsignificant 2.4 percentage points. The net effect was to essentially eliminate the difference between those two groups; but their use remained well above that of 12th graders and has in the years since then. In 2016, annual prevalence showed a rebound, with increases for college and noncollege youth and continued decline for 12th graders through 2020 (11%). In 2017, there was again a decline for college and noncollege respondents (with the decline for noncollege group being significant), resulting in similar prevalence across these two groups in 2017 through 2019 (17-18%). However, in 2020, these two groups diverged again, with a slight decrease for college students (to 16%) and slight increase for noncollege respondents (to 19%).

- Regarding recent trends, annual prevalence of ***marijuana*** use among college students and noncollege respondents rose from the most recent lows in 2006 (for college students at 30%) and 2007 (for noncollege youth at 32%) through 2016, reaching 39% and 41% respectively (Figure 9-3a); however, in 2017, both groups showed nonsignificant declines or leveling to 38% and 41%, respectively. In 2018, annual prevalence of marijuana increased nonsignificantly for both groups to 43%, where it remained in 2019. In 2020, it rose nonsignificantly to 44% for college students and was 43% for noncollege youth. The 5-year trend from 2015 to 2020 showed a significant increase of 6.0 percentage points for college students and a nonsignificant increase of 4.3 percentage points for noncollege youth. *For both college students and noncollege respondents, the 2018 through 2020 prevalence estimates of annual marijuana use (43-44%) were at the highest level in over*

three-and-a-half decades, since 1983 for both groups. In contrast, prevalence for 12th graders has remained fairly level since (35% in 2020). Whereas there was little distinction among the three groups for the first half of the past decade, annual prevalence began to show some divergence in the past five years with use becoming higher for the young adult groups than for 12th graders.

Looking back to an earlier period, from 1981 through 1991, annual prevalence of marijuana use dropped by nearly half from 51% to 27% among college students (Figure 9-3a). The noncollege group showed a comparable decline over the same time interval, as did the 12th graders; trends in annual prevalence for all three groups were fairly comparable across that interval, reflecting a secular trend. Use among 12th graders rose sharply after 1992, while use among college students and noncollege respondents rose more gradually. From 1991 through 1998, annual prevalence rose by 14 percentage points among 12th graders, compared to 10 percentage points among college students and 7 percentage points among the noncollege group. As a result, the 12th graders came to exhibit the highest annual prevalence of marijuana use in the last half of the 1990s, but they were the first to show a leveling off in marijuana use (in 1998), followed by the college students in 1999 and the noncollege group in 2002. This suggests that a cohort effect was present during this period. All three groups had very similar levels of use by 2005 after use showed some decline, particularly among the 12th graders. The college students and 12th graders both showed some continuing decline in 2006, but they then both showed a gradual increase in their marijuana use from 2006 through 2011, indicating in both cases the end of the gradual decline in marijuana use seen earlier in the decade.

- New questions about ***vaping marijuana*** were added to two of the six questionnaire forms in the young adult surveys in 2017 and 2018, to four forms in 2019, and to all six forms in 2020. *Annual* prevalence of vaping marijuana among college students in 2017 and 2018 was 11% and 20%, respectively (Table 9-2 and Figure 9-17), *showing a significant 9.4 percentage point increase, among the largest one-year increases for any substance since MTF began over 40 years ago.* Annual prevalence of vaping marijuana among college students increased nonsignificantly to 26% in 2019 and decreased nonsignificantly to 25% in 2020. For noncollege respondents in 2017 and 2018, annual prevalence was 14% and 11%, respectively. In 2019, annual prevalence of vaping marijuana among noncollege respondents was 23%, *a significant one-year increase of 12.2 percentage points*, again constituting one of the largest one-year increases in MTF history. In 2020, it showed a nonsignificant increase to 24%. Thus, after the substantial increases in the annual prevalence of vaping marijuana through 2019 for both groups, it appeared to level in 2020 at 24-25%.

  Thirty-day prevalence of vaping marijuana in 2017 and 2018 among college students was 5.2% and 11%, respectively (Table 9-3, Figure 9-17), showing a significant 5.7 percentage point increase. *This doubling of the 30-day prevalence of vaping marijuana for college students from 2017 to 2018 was among the largest one-year proportional increases for any substance for over 40 years*. Thirty-day prevalence of vaping marijuana among college students increased nonsignificantly to 14% in 2019 and then declined nonsignificantly to 12% in 2020. Among noncollege respondents 30-day prevalence was level at 7.8% in 2017

and 7.9% in 2018. In 2019, 30-day prevalence of vaping marijuana among noncollege respondents was 17%, *a significant increase of 8.7 percentage points*, again constituting one of the largest one-year proportional increases in MTF history; in 2020, it declined nonsignificantly to 14%. *Thus, 30-day prevalence of vaping marijuana increased rapidly between 2017 and 2018 for college students and then between 2018 and 2019 for noncollege youth. The prevalence estimates became more similar for these two groups in 2019 and then declined slightly in 2020 to 12% for college students and to 14% for noncollege youth.*

- ***Daily marijuana use*** among college students increased unevenly from the most recent low of 3.5% in 2007 to 7.9% in 2020 (Figure 9-3b), reaching the highest level ever recorded over the past four decades since the study began. The one-year increase in 2020 was 2 percentage points (nonsignificant) and the five-year increase (2015-2020) was 3.3 percentage points (significant). In recent years (and earlier), the prevalence for 12th graders was similar and typically somewhat higher than for college students, with 2020 being the first time that it was somewhat higher for college students (7.9%) than for 12th graders (6.9%).

  In the past few decades (since 1995), daily marijuana use has been a few percentage points higher among noncollege respondents than among college students and 12th graders. However, after 1995 the gap began to widen as daily use among noncollege youth rose fairly sharply until about 2001. Then followed a decline among the noncollege group for about five years before their use once again rose sharply from 2006 through 2019, before leveling in 2020. In most years between 2014 and 2019, prevalence was about twice as high among noncollege respondents than the other two groups, with the prevalence in 2019 being 15% among noncollege respondents, 5.9% among college students, and 6.4% among 12th graders. In 2020, the gap narrowed, with daily use dropping nonsignificantly to 13% for noncollege youth and increasing nonsignificantly to 7.9% for college students and 6.9% for 12th graders. Nonetheless, this considerably higher prevalence of daily marijuana use among noncollege youth in the past several years is notable, with the evidence indicating that the increase for noncollege youth has been occurring post-high school as they make their transition to adulthood.

  Across the past four decades, noncollege respondents have generally had the highest prevalence of daily marijuana use and college students have had the lowest (with college students and 12th graders showing some convergence in recent years). The differences have been greatest in periods of relatively high use and diminished considerably when use was at its nadir at the beginning of the 1990s. Daily marijuana use has varied widely in all three groups since 1980. The period from 1980 through 1992 saw a large proportional decline in daily use in all three groups, with levels falling by half or more. After 1992 (during the relapse phase in drug use), the prevalence climbed substantially in all three groups, followed by periods of leveling: for example, this occurred among high school seniors from 1999 through 2009, among college students from roughly 2003 through 2006, and among the noncollege group from 2003 through 2010.

- ***Synthetic marijuana*** (Figure 9-4) was first included in the study in 2011 and had an annual prevalence among college students of 8.5% at that time. Since then, annual use declined precipitously, to 0.9% in 2014, followed by some uneven change through 2020 (0.5%). Annual use among the noncollege and 12th grade respondents also has declined sharply since 2011, reaching 3.7% and 2.4%, respectively, in 2020, still higher than among college students, which has been the case most years.

- Use of ***salvia*** was added to the MTF questionnaires in 2009. It has seen a sharp decline in popularity among college students. Annual prevalence was 5.8% in 2009 but was 0.3% in 2020 (Table 9-2). Annual prevalence was 2.3% in the noncollege group in 2020 (Table 8-2 in Chapter 8).

- In the past dozen years, annual nonmedical ***amphetamine*** use increased and then decreased substantially among college students (Figure 9-12), first doubling from 2008 (5.7%) through 2012 (11%), and then declining to 6.5% in 2020, reaching the lowest level in the past decade; the one-year decrease was not significant,[6] but the five-year decrease from 2015 to 2020 was a significant 3.2 percentage points. Similarly, there has been a recent decline among 12th graders since 2013 reaching 4.3% in 2020. Among noncollege youth, annual prevalence also declined between 2014 and 2018, but increased slightly since then, reaching 6.3% in 2020. Whereas college students have typically had higher prevalence than noncollege respondents in the past decade, the gap closed in 2020 (6.5% and 6.3%, respectively).

  The 1980s saw a dramatic decline of annual prevalence of amphetamine use among college students, from 22% in 1981 to 4% in 1991. Proportionately, this was a larger drop than that among 12th graders, who also showed a considerable decline, but fairly parallel to the overall change among the noncollege group. These large declines in all three groups suggest a secular trend in that period. Amphetamine use among college students and their noncollege peers began to increase during the relapse phase in the drug epidemic after 1992 and 1993, respectively, through 2001, with a leveling in 2002. Still, during the 1990s and early 2000s, the prevalence estimates for amphetamine use in all three groups remained well below the estimates observed in the early 1980s. Since 2002, there have been some divergence among the three groups, with amphetamine use among college students (who consistently had the lowest rate of use from the mid-1980s through the mid-2000s) holding fairly steady through 2008, while use among 12th graders and the noncollege group declined, nearly closing the gaps among the three groups. In 2009, prevalence was similar for the college and noncollege groups (7.5% and 7.7%), and slightly lower among 12th graders (6.6%). Despite the recent declines for college students, their annual prevalence remained the highest among the three groups between 2010 and 2019. *It seems very likely that this was due to their higher interest in using these drugs to improve academic performance*.[7] Regarding college students' nonmedical use of ***Adderall***, annual prevalence

[6] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was a significant 2.4 percentage points.
[7] Data from high school seniors in 2012 on their reasons for using amphetamines showed "To help me study" was the most frequently chosen reason among 17 reasons, and was mentioned by 59% of the college-bound vs. by only 18% of those not college bound. Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (2014). *Monitoring the Future: Questionnaire responses from the nation's high school seniors, 2012*. Ann Arbor, MI: Institute for Social Research, University of Michigan.

has been between 7.2% and 11% since 2009 (when it was first included in the surveys); non-medical ***Ritalin*** use was between 1.3% and 3.6% during the same period.

- The annual use of ***inhalants*** has been quite low among both college and noncollege respondents since 1980, when it was first measured (Figure 9-5). Although it dropped for college students from a peak of 4.1% in 1997 to a low of 0.2% in 2016, it increased significantly in 2017 to 1.7%, the highest it has been since 2004; in 2018, it dropped nonsignificantly to 1.3%, and was 1.3% in 2019 and 1.2% in 2020. For noncollege respondents, 2019 annual prevalence was 1.4%, down from its peak of 3.5% in 2006. Twelfth graders have typically had considerably higher rates of inhalant use than either of these segments of the young adult population; and as is documented in *Volume I*,[8] the 8th and 10th graders have had still higher levels of use. Since 2017, the gap between 12th graders and the college and noncollege respondents has lessened as prevalence has changed unevenly for all three groups. The college, noncollege, and 12th grade groups have trended largely in parallel across the years, but the increase through the mid-1990s and subsequent decline were substantially more pronounced among 12th graders, opening and then shrinking the gap between them and the two young adult groups.

- The past few years have shown an increase in annual hallucinogens use (including LSD) among college and noncollege youth, a trend that was particularly notable in 2020 (Figure 9-6.) Regarding ***LSD*** in particular (Figure 9-7), annual prevalence was similarly low among both groups and among 12th graders in 2012 (at about 2%), and since increased unevenly through 2020 to 5.8% among college students and to 7.3% among noncollege respondents (it increased gradually for 12th graders to 3.9%) (Figure 9-7). The one-year increase in 2020 was a significant 2.1 percentage points for college students,[9] and a nonsignificant 1.3 percentage points for noncollege respondents. In addition, the five-year trends showed a significant increase of 2.8 percentage points for college students and a 2.7 percentage point increase for noncollege youth. The annual prevalence of ***hallucinogens*** overall, of which LSD is one component (Figure 9-6), has also shown some uneven increase among college and noncollege youth in recent years, particularly in 2020. In 2012, annual prevalence was similar in the three groups at 5%; it then increased unevenly for noncollege youth to 9.8% in 2020, remained fairly steady for college students through 2019 before increasing to 8.6% in 2020, and remained fairly steady for 12th graders (5.3% in 2020). The one-year increase in 2020 was a significant 3.3 percentage points for college students,[10] and a nonsignificant 1.9 percentage points for noncollege respondents. In addition, the five-year trends showed a significant increase of 4.3 percentage points for college students and a 2.8 percentage point increase for noncollege youth.

  In regard to longer-term trends, during the early 1980s, one of the largest proportional declines observed among college students occurred with ***LSD***: annual prevalence fell from 6.3% in 1982 to 2.2% in 1985. After 1989, use in all three groups increased, with the prevalence among college students reaching 6.9% by 1995. After 1995, use fell gradually

[8] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). Monitoring the Future national survey results on drug use, 1975-2020: Volume I, secondary school students. Ann Arbor, MI: Institute for Social Research, The University of Michigan.

[9] When comparing the 2019 web-push only and 2020 (all web-push) samples, this increase was a nonsignificant 2.3 percentage points.

[10] When comparing the 2019 web-push only and 2020 (all web-push) samples, this increase was a significant 3.8 percentage points.

among college students, their noncollege peers, and 12th graders until 2001, followed in 2002 by a particularly sharp decrease in all groups. As a result, there was a considerable convergence in usage rates, which remained for some years. College students maintained lower levels of annual LSD use than the other two groups for most of the life of the study until 2007. Use rose some in all three groups between 2007 and 2012, with little consistent difference among them suggesting a secular trend.

- Annual prevalence of ***hallucinogens other than LSD*** (which primarily involves the use of psilocybin known as mushrooms or "shrooms") has also been increasing in the last few years among college and noncollege youth, particularly in 2020 (Figure 9-8). Once again, these two groups and 12th graders were similar in 2012 at 3.9%. Since then, annual prevalence increased unevenly for noncollege respondents to 6.9% in 2020, declined somewhat for college students through 2018 and then increased to 5.8% in 2020, and declined slightly for 12th graders to 2.8% in 2020. The one-year increase in 2020 was a significant 2.5 percentage points for college students,[11] and a nonsignificant 2.2 percentage points for noncollege respondents. In addition, the five-year (2015-2020) increases were significant for both college students (2.8 percentage point increase) and noncollege respondents (2.6 percentage point increase).

  The longer-term trends for annual prevalence of hallucinogens other than LSD followed a track somewhat parallel to LSD use, at least up until about 2000. Other hallucinogen use declined in all three groups from the early 1980s through the early 1990s, followed by rising use during the relapse in drug use in the 1990s, and then some leveling. But the secular trends for these other hallucinogens diverged from those for LSD after about 2000, with an increase in their use, including among college students, just before and after the drop off in LSD use in 2002. While overall annual prevalence of LSD across the three groups was higher than that of the other hallucinogens in the first two decades of the study, overall annual prevalence has about the same for these two classes of drugs in recent years.

- The annual use of ***MDMA*** (***ecstasy*** and, more recently, ***Molly***) has been relatively low in the past several years among college and noncollege youth, showing uneven change over the past decade through 2020 (3.7% and 5.5%, respectively) (Figure 9-9). Prevalence has declined unevenly for both groups since 2014 (when Molly was first included as an example of MDMA) as summarized below.

  Use by college students and noncollege youth began to rise after 1994 and their prevalence tracked closely through about 2000 (Figure 9-9). Questions about MDMA use were added to the 12th grade survey in 1996 and prevalence estimates tracked similarly with those of the other two groups through about 2000. After 1997 there was a sharp increase in use in all three groups. The annual prevalence for college students, for example, rose from 2.4% in 1997 to 9.2% in 2001 and rose considerably more among the noncollege group. Use in all three groups declined sharply from 2001 to 2004, when annual levels were back to 2.2% for college students, 2.7% for 12th graders, and 4.0% for the noncollege segment. Both the college and noncollege groups showed some increase in use by 2012, after which use by college students began a decline while use in the noncollege group began an uneven

[11] When comparing the 2019 web-push only and 2020 (all web-push) samples, this increase was a significant 2.6 percentage points.

increase. It is worth noting that "Molly"—which is a purer form of MDMA and has its own street name—was added as an example of MDMA in half of the questionnaires in 2014 and in all of them a year later. Figure 9-9 shows in 2014 the prevalence reported by respondents with and without Molly included. There was rather little difference in the level for the two older groups (as indicated by overlapping marks), but the 12th graders showed a fair difference, with the inclusion of Molly leading to a higher prevalence. In 2015, even with Molly included, all three groups showed a decline in annual prevalence, a decline that continued into 2020 for 12th graders. In 2016, the college group (4.7%) and especially the noncollege group (8.6%) showed an increase, reaching levels that constituted a doubling of prevalence since 2007 (the most recent low); 2017 then saw significant declines for college students (2.5%) and noncollege youth (4.7%). Annual changes were nonsignificant in 2018 and 2019, as well as in 2020 (3.7% and 5.5%, respectively).

- Annual prevalence of nonmedical ***sedative (barbiturate)*** use has remained relatively low in recent years and has been declining unevenly in all three groups since 2004-2005 (Figure 9-13). In 2020, it did not change significantly; it was 1.7% among college students, 1.7% for noncollege respondents, and 2.4% for 12th graders.

  Throughout the time data have been available in this study (1980 through 2020), college students have typically had the lowest prevalence of use among the three groups, and sometimes by a substantial margin. By 1980, sedative (barbiturate) use was already quite low among college students (at 2.9%), but it still fell by more than half to 1.3% by 1985. This proportional decline was sharper than among 12th graders and less sharp than among the noncollege respondents: both groups started at considerably higher levels of use than college students. Annual prevalence remained essentially unchanged between 1985 and 1993 for all three groups. A steady increase in use occurred between 1994 and 2004 for college students and between 1993 and 2005 for the other two groups. After 2005, declines in use appeared in all three groups through 2011 (2012 for the noncollege group), before showing a rise in use through 2013 and 2014. In fact, among college students, sedative (barbiturate) use rose from 1.7% in 2011 to 3.1% in 2014, followed by nonsignificant declines in use in the past five years; 12th graders have shown a similar recent trend, whereas noncollege respondents have shown an uneven decline since 2014, with the unevenness likely due in part to their smaller numbers of cases.

- Similar to what was found for sedatives (barbiturates), annual prevalence of nonmedical ***tranquilizer*** use also remains relatively low (Figure 9-14). In 2020, it did not change significantly; it was 2.6% for college students, 3.5% for noncollege respondents, and 3.2% for 12th graders. For a few years prior to 2017, the annual prevalence of nonmedical tranquilizer use increased slightly among college students and noncollege respondents, reaching 4.9% and 7.1% respectively in 2016, while 12th grade prevalence remained level. For college and noncollege respondents, the increases through 2016 reflected a slight reversal of a longer-term downward trend that began in the early 2000s and continued since 2017; 12th graders have also shown a long-term decrease since early 2000s.

  In general, long-term trends in tranquilizer annual prevalence have been similar to those for sedatives (barbiturates). Between 1980 and 1994, annual tranquilizer use among college

students dropped by nearly three fourths from 6.9% to 1.8%, a period in which use declined in the other two groups as well. After this long period of decline, tranquilizer use by college students increased gradually, returning to 6.9% by 2003. Use by the noncollege segment and by 12th graders dropped more sharply from 1980 through 1992, eliminating the differences among the three groups. Use rose after 1992 for all, but the noncollege group showed the largest gain after 1999, again creating some differences. By 2002, tranquilizer use was once again at or near its recent high in all three groups, followed by a period of decline, until 2014, after which there was some slight increase in use through 2016, and then decreases through 2020 for all three groups.

- The nonmedical use of ***narcotics other than heroin***[12] (Figure 9-11a) has been declining for all three groups in the past decade, dropping from peak levels in the mid-2000s. These declines continued into 2019. Annual use was level for college students in 2020 (1.3%), with the five-year trend (2015-2019) showing a significant decline of 1.9 percentage points; for noncollege respondents, use was level in 2020 (3.5%), with the five-year trend showing a significant decline of 2.4 percentage points; and for 12th graders, use declined nonsignificantly in 2020 (2.1%), with the five-year trend showing a significant decline of 3.3 percentage points (see Volume I[13]). *These declines resulted in the lowest levels for college students and 12th graders in the past four decades; for noncollege respondents, the 2018-2020 prevalence levels are the lowest since the mid-1990s.*

  The long-term trends in use have been quite parallel to those for sedatives (barbiturates) and tranquilizers. From 1980 through the mid-1990s, there was a slight decline for all group (though a less sharp decline than for sedatives and tranquilizers), with little distinctions among the three groups. Annual prevalence then rose considerably after the early- to mid-1990s in all three groups. Prior to then, the use of narcotics other than heroin by college students was down to about half by 1994 from what it was in 1980 (2.4% in 1994 vs. 5.1% in 1980) as a result of a fairly gradual decline over that 14-year interval. This trend closely paralleled use among participants' noncollege counterparts and 12th graders. As with a number of other drugs, use among 12th graders began to rise after 1992, but use among college students did not begin to increase until after 1994, likely due to a cohort effect. In 2003, annual prevalence among college students reached a historic high point of 8.7% before leveling for three years. It then declined from 8.8% in 2006 to an all-time low of 1.3% by 2020. For the past decade (and with a few minor exceptions since 1980), college students have shown the lowest prevalence among the three groups. Use among 12th graders leveled after reaching a historic high of 9.5% in 2004, but it then declined fairly steadily to a new low of 2.1% in 2020. The noncollege group emerged after 2000 as the most heavily using group for the first time, supplanting the high school seniors, as their use kept increasing through 2005, reaching an all-time high of 13%. After that, use in the noncollege group declined to a two-decade low of 3.2% in 2018 (it was 3.5% in 2020).

[12] As discussed in Chapters 4 and 5, because the questions about narcotics other than heroin were changed in 2002, the prevalence figures are adjusted estimates. See the earlier discussion for details.

[13] Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). Monitoring the Future national survey results on drug use, 1975-2020: Volume I, secondary school students. Ann Arbor, MI: Institute for Social Research, The University of Michigan.

It thus appears that all three groups have shown fairly steady and parallel declines in the use of these dangerous drugs since the early to mid-2000s, following a substantial increase in use by all three groups in the 1990s and into the early 2000s. Although there was a nonsignificant increase in 2016 for college and noncollege respondents, the 2020 results suggest that the overall declines for these two groups over the past decade are continuing. The fact that these and the other therapeutic drugs used without medical supervision (including amphetamines) continued to rise beyond the 1990s and well into the 2000s made them an increasingly important part of the nation's drug problem, because most of the illegal drugs were decreasing in use by the end of the 1990s.

- Data on the nonmedical use of the specific narcotic drugs, ***OxyContin*** and ***Vicodin,*** were first collected in 2002 (Figures 9-11b and 9-11c and Table 9-2). The noncollege group had annual prevalence estimates up to twice that for college students in the use of both drugs when their use was first measured in 2002, but the differences among the three groups have since changed as summarized below.

  Annual prevalence of nonmedical use of ***OxyContin*** among college students rose fairly steadily, from 1.5% in 2002 to 5.0% in 2009, before dropping significantly to 1.2% by 2012; it has since shown uneven change to 1.5%[14] in 2020 (one- and five-year trends were not significant)[15] (Figure 9-11c). Use in the noncollege segment rose from 2002 (3.3%) to 2005 (6.2%) and then declined to 4% by 2010 and remained fairly level through 2015; in 2016 it declined to 2.1%, and increased unevenly through 2020 (to 3.4%) (five-year trend was not significant). The trend line has been quite uneven, likely due to the limited numbers of cases in this segment. (Questions about OxyContin and Vicodin are in only three of the six questionnaire forms.) Among 12th graders, OxyContin use rose from 4.0% in 2002 to 5.1% in 2010 and then leveled for several years, before declining unevenly to 2.4% by 2020. It is clear that OxyContin use increased among college students between 2002 and 2009, closing the previously existing gaps among the three groups; however, their use has declined sharply since then, again opening a sizeable gap between them and the other two groups through 2015, after which the three groups have converged again at relatively low levels.

  Vicodin use without medical supervision (Figure 9-11b) showed a somewhat different pattern of change, with annual prevalence among all three groups remaining fairly level, and substantially higher than use of OxyContin, from 2002 through about 2008. Since then, annual prevalence for all three groups has declined sharply, reaching its lowest point in 2017 for college students (1.1%) and noncollege respondents (1.8%). Annual prevalence leveled for both groups through 2020 (1.2% and 2.6%, respectively). The five-year (2014-2019) decline was nonsignificant for college students or for noncollege youth. As with OxyContin, the noncollege group has consistently had higher Vicodin use than the college students. Twelfth-grade levels of Vicodin use have fallen in between the other two group.

[14] The prevalence of OxyContin, a subclass of narcotics other than heroin, is asked on three of the six questionnaire forms, whereas the prevalence of narcotics other than heroin is asked on all six forms. In 2019 and 2020, annual prevalence of both was very low for college students. The annual prevalence of OxyContin was similar to the annual prevalence of narcotics other than heroin, reflecting that OxyContin is a commonly used narcotic. When annual prevalence of OxyContin slightly exceeds the annual prevalence of narcotics other than heroin, this is likely a matter of random sample variation due to relatively small sample sizes for OxyContin combined with the very low prevalence estimates of both.

[15] When comparing the 2019 web-push only and 2020 (all web-push) samples, this was a significant decline of 2.7 percentage points.

The 2017-2020, data show a convergence among the three groups at or near historical lows. Because of the limited numbers of cases, as with OxyContin, trend data for use of Vicodin have generally been somewhat uneven in the young adult groups.

- Beginning in the mid- to late-2000s, the annual prevalence of ***cocaine*** use among college students, noncollege youth, and 12th graders (Figure 9-10) began to decline to levels below those in the 1990s and far below those in the 1980s. The trend line for college students continued to decline until 2013, and then increased a significant 1.7 percentage points to 4.4% in 2014; it was level through 2016 and then increased nonsignificantly to 5.6% in 2019; in 2020, it declined a significant 1.9[16] percentage points to 3.8% (the five-year trend from 2015-2020 was nonsignificant). In the noncollege group, which has had the highest levels of use among the three groups for nearly the entire time, there was also a bump up in cocaine use in 2013, which held for a few years and then increased to 6.5% in 2016; it has since changed unevenly, increasing nonsignificantly to 7.1% in 2020 (the five-year trend was nonsignificant). For 12th graders, annual cocaine use has been nearly level for the past decade (2.9% in 2020).

  Regarding longer-term trends, the early to mid-1980s saw a level period during which cocaine use was considerably greater among college students and their noncollege peers than among 12th graders. It was followed by a dramatic drop in annual prevalence among college students (nearly nine tenths, from 17.1% in 1986 to 2.0% by 1994) and noncollege counterparts (from 18.9% in 1986 to 5.1% in 1994). (Twelfth graders also showed a considerable drop in use from 1985 to 1992, suggesting a secular trend.) A cohort effect emerged as cocaine use began to rise among 12th graders after 1992, among the college segment after 1994, and among the noncollege segment after 1995. Since 2000 the 12th graders and college students have had similar rates of use and parallel trends, while use in the noncollege stratum has been considerably higher. After around 2006 all three groups showed declines in use until 2012 among the noncollege group and 2013 among college students, with 12th graders continuing to decline. These patterns of change suggest that a secular trend was underway through most of the 1980s, combined with a considerable age effect. After 1992 a cohort effect emerged through most of the 1990s, and since 2000 or so through 2012 a secular trend re-emerged with all three groups moving in parallel for the most part. After 2012 the three groups diverged somewhat.

- Despite different trend patterns among the three groups, college students have exhibited the highest levels and greatest constancy in ***binge drinking*** (defined as having five or more drinks in a row at least once in the past two weeks) since the first measurement in the MTF surveys in 1980 through 2019 (Figure 9-15d; note that ***30-day alcohol*** use shows very similar patterns as shown in Figure 9-15b). Nonetheless, in 2020 and for the first time over the past four decades, college students and noncollege respondents had similar binge drinking prevalence at 24%. From 1980 through 2020, college students' prevalence of binge drinking declined 20 percentage points (from 44% to 24%). The 2018 prevalence (28%) was a significant decline from 2017, and represented the first time that prevalence was below 30%; however, in 2019, it rose nonsignificantly to 32%. In 2020, it declined again, dropping a significant 7.8 percentage points[17] to 24%, a new all-time low over the

[16] When comparing the 2019 web-push only and 2020 (all web-push) samples, this was a nonsignificant increase of 0.7 percentage points.
[17] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was a significant 9.8 percentage points.

past four decades. It is possible that this significant decline between 2019 and 2020 was partly due to the pandemic in terms of reduced time with friends, with the pandemic serving to accelerate the decline that had already been occurring. For noncollege respondents and 12th graders, prevalence has also declined considerably since 1980 through 2020, with most of that decline occurring since 1997 in the case of 12th graders and since 2001 among the noncollege group; from 1980 to 2020, noncollege respondents' prevalence declined 17 percentage points (41% to 24%) and 12th graders' prevalence declined 24 percentage points (41% to 17%).

With respect to the pandemic, it is noteworthy that ***30-day alcohol use*** showed a significant decline for college students between 2019 and 2020. From 2015 through 2019, it had been fairly level at 60-63%; in 2020, it was 56%, showing a significant 6.4 percentage point decrease from 2019. Similarly, the 30-day prevalence of ***been drunk*** also decreased significantly for college students in 2020; it was 35-41% between 2015 and 2019 and then dropped a significant 7.2 percentage points from 2019 to 28% in 2020. This may reflect a pandemic effect in terms of reduced social time for college students between 2019 and 2020. For noncollege youth, 30-day use and been drunk showed uneven change over the past five years (2015-2020), with no net change or drop between 2019 and 2020 (they were 49% and 22%, respectively).

As can be seen in Figure 9-15d, both the noncollege segment and 12th graders showed fairly substantial declines in the prevalence of binge drinking from 1981 through 1990. In contrast, college students showed no decline from 1981 to 1986 and then only a modest decline of five percentage points from 1986 through 1993. Between 1981 (when all three populations were very close in use) and 1992, this measure of binge drinking dropped by 14 percentage points among 12th graders, by 11 percentage points among the noncollege respondents, but by only two percentage points among college students. After 1992, binge drinking began to rise among 12th graders while still declining some among college students, narrowing the gap somewhat and likely reflecting a cohort effect emerging during this period, similar to that observed for a number of illicit drugs. Binge drinking subsequently began to increase among the noncollege segment after 1995, and by less among college students after 1996, modest increases that continued into 2001. Between 2001 and 2008, college students held fairly steady in their rates before showing some decline through 2015, followed by some leveling and then the significant declines in 2018 and 2020; the noncollege segment held steady from roughly 2003 to 2007, followed by some uneven decline through 2020. Meanwhile, among 12th graders, binge drinking started a gradual decline after 1998 that continued unevenly into 2020, enlarging the difference between them and the two older groups. Once again there is evidence of cohort effects since the early 1990s, with the inflection points occurring later for the older strata.

Why did college students' binge drinking decline so little for a decade (1981–1991) compared to their noncollege peers and 12th graders? One possibility is that campuses provided some insulation from the effects of changes in the drinking age laws that took place in many states during that interval. Similarly, entrenched in many college campuses is a culture of binge drinking that had proven to be impervious to many societal trends and

intervention attempts.[18] Also, individuals who are under the legal drinking age in college are mixed in with peers who are of legal age to purchase alcohol; this was no longer true in high schools by the mid-1980s and was less true, perhaps, for many of those ages 19 to 22 who were not in college. Finally, much alcohol advertising and promotion was and is directed specifically at the college student population. As summarized above, binge drinking has generally decreased for all three groups over the past decade likely reflecting a secular trend.

Starting in 2005, we included a set of questions concerning ***high-intensity drinking*** (also known as ***extreme binge drinking***). The questions asked respondents about the frequency in the past two weeks of having 10 or more drinks in a row (included on one of six questionnaire forms through 2014, on two forms 2015-2018, and five forms in 2019-2020), and also of having 15 or more drinks in a row (included on one of six questionnaire forms throughout). To examine trends, the low numbers of cases that result from a single questionnaire form (in most years) necessitate combining multiple years of data (we include all available data here, and thus sample sizes changed over the years for the 10+ item). By combining data across 2005 through 2009, across 2010 through 2014, and 2015 through 2020, we find that high-intensity drinking has declined for college students and noncollege respondents. As shown in Table 9-5, prevalence of ***10 or more drinks in a row*** at least once in the prior two weeks decreased slightly for college students from 14% in 2005-2009, to 13% in 2010-2014, and to 11% in 2015-2020; corresponding prevalence for noncollege respondents declined from 13%, to 11%, and to 11%, respectively across the three time-periods (none of the changes across the time periods was significant for college or noncollege respondents). Prevalence of ***15 or more drinks in a row*** at least once in the prior two weeks decreased for college students from 5.1% in 2005-2009 to 4.5% in 2010-2014; it then decreased significantly to 2.1% in 2015-2020 (Table 9-6); corresponding prevalence for noncollege respondents decreased from 5.7%, 5.0%, to 3.4%, respectively (none of the decreases for noncollege respondents was significant).

In table 9-4, high-intensity drinking prevalence levels (for both 10 or more and 15 or more drinks) are shown for college students each year from 2005 through 2020. These levels are based on small sample sizes (for most years) and thus show uneven trend lines from year to year. Nonetheless, the overall downward trends are evident, with some declines in both 10 or more drinks and 15 or more drinks after 2014 (both 10 or more and 15 or more drinks increased nonsignificantly in 2020). These uneven recent declines in prevalence of high-intensity drinking are consistent with declines in binge drinking (at the 5+ drinks level) for college students and noncollege respondents.[19] As we summarize below (and also discuss in Chapter 8), the prevalence of high-intensity drinking is much higher among men than women in both college and noncollege groups.

College students' ***daily drinking*** estimates (Figure 9-15c) showed a significant decline in 2017 to 2.2%, dropping by half (from 4.3% in 2016); it remained fairly level between 2017

[18] Schulenberg, J. E., & Maggs, J. L. (2002). A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. *Journal of Studies on Alcohol,* Supplement 14, 54–70.

[19] Patrick, M. E., Terry-McElrath, Y. M., Miech, R. A., Schulenberg, J. E., O'Malley, P. M., & Johnston, L. D. (2017). Age-specific prevalence of binge and high-intensity drinking among U.S. young adults: Changes from 2005 to 2015. *Alcoholism: Clinical and Experimental Research, 41,* 1319-1328.

and 2020 (ranging between 2.0% and 2.4%). It changed unevenly in the past five years for noncollege respondents (1.5% in 2020) and 12th graders (2.7% in 2020). Earlier trend data for college students appeared a little less stable, perhaps due to smaller sample sizes at those times, going from around 6.5% in the early 1980s to a considerable decline from 1984 through 1995 (to 3.0%), followed by a period of some increase during and after the relapse phase in the drug epidemic in the 1990s, reaching 5.0% in 2002. From 2002 through 2016, daily drinking among college students fluctuated around 4% without a clear downward trend; however, 2017 showed a clear and significant downward trend, and then leveled through 2020. Twelfth graders showed a somewhat similar pattern of daily drinking with a long period of decline, followed by an earlier reversal beginning in 1994 (a reversal that was mirrored a few years later in the two older groups, suggesting a cohort effect). After 1998, 12th grade daily drinking resumed its decline, with uneven change in the past few years. Of the three groups, 12th graders have typically had the lowest rates of daily drinking. The noncollege respondents have generally had the highest rate of current daily drinking and have shown the most change in daily drinking trends. After a 2008 decline in daily use among noncollege respondents, daily drinking levels have been fairly comparable between the college students and noncollege youth; and both of them showed some decline in daily use in 2015 and then uneven change through 2020, reaching levels that were at or near historic lows in 2020.

- The 30-day prevalence of ***cigarette smoking*** (Figure 9-16a) among college students has declined dramatically for the past decade and a half, with any smoking in the past *30 days* falling by almost four-fifths from the most recent high of 31% in 1999 to 4.1% in 2020 (including a significant 3.8 percentage point drop from 2019[20] to 2020, reaching a new all-time low); their *daily* smoking has fallen by over four-fifths over the same interval, from 19% in 1999 to 1.4% in 2020 (a nonsignificant 1.1 percentage point decrease from 2019, reaching a new all-time low) (Figure 9-16b, Table 9-4). In the early 1980s, cigarette smoking among U.S. college students declined modestly, and by less than the decline among noncollege youth. Thirty-day prevalence for college students fell from 26% to 22% between 1980 and 1984, remained fairly stable through 1990 (22%), then increased gradually but substantially during the relapse phase in the drug epidemic, reaching 31% by 1999. In 2000 the first evidence of a new decline in smoking among college students began to appear, two years after smoking had begun to decline among 12th graders, this lag reflects a cohort effect. The noncollege group, which has consistently had the highest smoking rate of the three groups, showed a fairly consistent decline in 30-day prevalence from 1980 through 1990, an offsetting increase from 1990 through 2001 (44%), and a considerable decline since then to an all-time low of 13% in 2020, showing a nonsignificant decline of 2.4 percentage points from 2019 (16%). Over the past decade and a half, 30-day use has declined in parallel form for noncollege and college respondents, with smoking being about twice as high among noncollege as among college respondents across the past seven years. Across the same period, prevalence of *daily* smoking also decreased in parallel form; it has been three to four times as high among noncollege as among college respondents in recent years (Figure 9-16b and Table 9-4).

[20] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was a significant 5.4 percentage points.

While smoking rates have consistently been lower among college students than the noncollege segment, the trend lines in 30-day use for these two groups converged some after 1984, as smoking rates more or less stabilized among college students but continued to decline among young adults not in college (Figure 9-16a). In fact, between 1989 and 1991, use began to rise among college students while continuing to decline among noncollege respondents. Both groups showed fairly parallel increases in smoking between about 1991 and 1999, after which use continued to increase among the noncollege segment but began to decline among college students, opening up a large difference between them. (Twelfth graders exhibited an increase from 1992 to 1997— peaking two to three years prior to the older groups—reflecting a cohort effect, and their use has declined significantly since then.) All three groups have seen very substantial declines since those peaks, and the rates for college students and 12th graders have largely converged, but use among the noncollege group remains far higher than the other two groups.

- New questions about ***vaping nicotine*** were added to two forms of the young adult surveys in 2017 and 2018, and to four forms in 2019, and to all six forms in 2020 (Figure 9-18). *Annual* prevalence of vaping nicotine among college students increased a significant 12.6 percentage points from 2017 (13%) to 2018 (26%); it then increased by a significant 9.7 percentage points to 35% in 2019; in 2020, it decreased nonsignificantly[21] to 33% (Table 9-2). *The one-year increases in annual prevalence of vaping nicotine in 2018 and 2019 were among the largest for any substance since MTF began over 40 years ago.* For noncollege respondents, annual prevalence of vaping nicotine was 21% in both 2017 and 2018, and then increased a significant 8.9 percentage points to 30% in 2019; it slightly (and nonsignificantly) increased to 31% in 2020. Thus, in 2018 through 2020, college students had somewhat higher annual prevalence of nicotine vaping (26%, 35%, and 33%, respectively) than did noncollege respondents (21%, 30%, and 31%, respectively), which is in contrast to what is true for most other forms of nicotine use.

  Thirty-day prevalence of vaping nicotine (Figure 9-18) increased by a significant 9.4 percentage points from 2017 (6.1%) to 2018 (16%); it then increased by a significant 6.5 percentage points to 22% in 2019; in 2020, it decreased nonsignificantly to 19% (Table 9-3, Figure 9-18). *Again, the one-year increases in 30-day prevalence of vaping nicotine among college students in 2018 and 2019 are among the largest increases for any substance for over 40 years.* Among noncollege respondents, 30-day prevalence was 7.9% in 2017, 13% in 2018, 18% in 2019, and 24% in 2020 (none of these one-year increases was significant). So, as cigarette smoking was continuing its long term decline in these two young adult groups, vaping of nicotine made very substantial inroads in a very short period of time. And, whereas college students had somewhat higher 30-day prevalence of vaping nicotine than noncollege respondents in 2018 (16% and 13%, respectively) and 2019 (22% and 18%, respectively), the opposite was true in 2020 (19% and 24%, respectively).

Selective Summary of Recent Trends

One main finding for recent trends among college students is the continued historic high levels in annual prevalence of ***marijuana*** use, which reached 44% in 2020, a historic high since the early

[21] When comparing the 2019 web-push only and 2020 (all web-push) samples, this decrease was a significant 5.7 percentage points.

1980s; notably, the five-year trend from 2015 to 2020 showed a significant 6.0 percentage point increase. Likewise, for noncollege youth, annual marijuana use remained at historic high levels in 2020, remaining at 43% (the same as 2018 and 2019), constituting the highest level since the early 1980s. Meanwhile, among 12th graders, annual prevalence of marijuana use remained fairly steady from 2011 through 2020 (35% in 2020), resulting in a continued divergence between them and both the college and noncollege groups.

Daily marijuana use increased a nonsignificant 2.0 percentage points for college students in 2020 to 7.9%, a new all-time high over the past four decades (the five-year increase of 3.3 percentage points was significant). For noncollege respondents, daily marijuana use declined nonsignificantly to 13% in 2020 (below the all-time high of 15% in 2019). Meanwhile, daily use among 12th graders has remained steady the past few years (6.9% in 2020). Thus, as of 2020, over one-in-seven noncollege respondents aged 19-22, and almost one-in-twelve college students, use marijuana on a daily or near daily basis.

Between 2017 and 2019, there were dramatic increases in ***vaping marijuana*** among 19-22 year old college students and noncollege youth. Thirty-day prevalence more than doubled between 2017 and 2019 for both college students (from 5.2% to 14%) and noncollege respondents (7.8% to 17%). In 2020 however, it declined somewhat for both college students (to 12%) and noncollege respondents (to 14%). Twelfth graders also showed a very parallel increase and then in 2020 a decline in marijuana vaping suggesting a period effect (secular trend).

The annual prevalence of ***illicit drugs other than marijuana*** (Figure 9-2) has shown uneven declines in recent years for college and noncollege respondents, with five-year trends being nonsignificant (annual prevalence was 16% and 19%, respectively, in 2020). However, one class of such drugs – ***hallucinogens*** – showed notable increases in 2020. Annual prevalence of use of any ***hallucinogens***, of ***LSD*** in particular, and of ***hallucinogens other than LSD*** showed significant one-year increases in 2020 for college students (to 8.6%, 5.8%, and 5.8%, respectively), and modest (nonsignificant) one-year increases in 2020 for noncollege respondents (to 9.8%, 7.3%, and 6.9%, respectively); the five-year (2015-2020) increases were significant for hallucinogens, LSD, and hallucinogens other than LSD for both college and noncollege respondents.

The use of two illicit drugs in particular has continued to decline for college students and noncollege respondents. Annual prevalence of the nonmedical use of ***narcotic drugs other than heroin*** (Figure 9-11a) continued to decline for college students, with a significant five-year decline from 3.3% in 2015 to 1.3% in 2020; similarly, for noncollege respondents, there was a significant five-year decline from 5.9% in 2015 to 3.5% in 2020 (use also declined significantly for 12th graders in the past five years to 2.1% in 2020). The 2020 prevalence in all three groups was at the lowest levels since the late 1990s.

The annual nonmedical use of ***amphetamines*** (Figure 9-12) also continued to decline especially for college students, decreasing by a significant 3.2 percentage points since 2015 to 6.5% in 2020 and reaching the lowest level in the past decade; among noncollege respondents, annual prevalence showed uneven change in the past five years to 6.3% in 2020. Thus, whereas college students have typically had higher annual non-medical use of amphetamines than noncollege respondents in the

past decade, the two were similar in 2020. This may suggest that amphetamines are being used less as an aid to study among college students in 2020.

Several illicit drugs with relatively low prevalence have shown some leveling or uneven change in recent years among both college students and noncollege respondents, including ***MDMA*** (***ecstasy***, ***Molly***) (annual prevalence of 3.7% and 5.5%, respectively in 2020) and nonmedical use of ***sedatives (barbiturates)*** (1.7% and 1.7%), and ***tranquilizers*** (2.6% and 3.5%). The annual prevalence of ***cocaine*** use showed uneven change among college students and noncollege respondents in recent years.

Binge drinking continued to decline among college students. In 2020, it decreased a significant 7.8 percentage points to 24%, a new historic low over the past four decades. Although binge drinking has also been declining for noncollege respondents in recent years, it appears to have increased nonsignificantly to 24% in 2020. Thus, whereas college students consistently have had higher prevalence of binge drinking over the years than noncollege respondents, the two groups were similar for the first time in 2020 (at 24%).

It is noteworthy that both ***30-day alcohol use*** and 30-day ***been drunk*** decreased significantly between 2019 and 2020 for college students, dropping 6.4 and 7.2 percentage points, respectively, to 56% and 28% in 2020; importantly, for both of these measures, the trends between 2015 to 2019 were level, suggesting that the 2019 to 2020 drop reflects possible pandemic effects in terms of reduced social time. For noncollege youth, these two measures showed fairly level trends between 2015 and 2020 with no drop between 2019 and 2020 (they were 49% and 22%, respectively in 2020).

Regarding measures of ***high intensity drinking***, prevalence of ***10 or more drinks in a row*** at least once in the prior two weeks has been fairly level across the years and similar for college and noncollege youth (combined across years 2015-2020, 11% for both college and noncollege youth); prevalence of ***15 or more drinks in a row*** decreased for both groups to 2.1% and 3.4%, respectively, in 2015-2020 combined.

Cigarette use continues to decline, with 30-day smoking at a new all-time low of 4.1% in 2020 for college students, showing a significant 3.8 percentage point decline from 2019; it also reached a new all-time low in 2020 for noncollege respondents (13%) in 2020.

Between 2017 and 2019, there were dramatic and significant increases in ***vaping nicotine*** among 19-22 year old college students and noncollege youth (Figure 9-18). Thirty-day prevalence more than tripled between 2017 and 2019 for college students (from 6.1% to 22%) and more than doubled for noncollege respondents (7.9% to 18%). In 2020 however, it declined nonsignificantly for college students (to 19%) but continued to increase nonsignificantly for noncollege respondents (to 24%).

Finally, regarding long-term trends, the findings over the years concerning divergences and convergences among the three groups highlight the importance of cohort effects in determining the source of changes. The overall drug use trends among college students parallel the trends among 12th graders, though after the early 1990s they were generally lagged by a few years; still,

declines in many drugs from 1980 to 1990 were proportionately larger among 19-22 year olds (both college and noncollege) than among 12th graders. Despite parallel trends in the early 1990s, 12th graders showed larger, and usually earlier, increases in the use of a number of drugs in the years since; as indicated in *Volume I*, 8th and 10th graders showed increases a year earlier than 12th graders. Clearly the upsurge, or what we have called a "relapse phase" in the illicit drug epidemic during the 1990s, did not originate on the nation's college campuses, as did the earlier epidemic. The relapse originated among secondary school students, and the younger ones at that, and was carried up the age spectrum through generational replacement. In other words, it exhibited a cohort effect.

GENDER DIFFERENCES IN TRENDS AMONG COLLEGE STUDENTS

As mentioned earlier, recent decades have seen a gradual rise in the proportion of college students who are female. Women constituted 50% of the 1980 sample of college students compared to 64% of our 2020 sample. Given that substantial gender differences exist in the use of some drugs, we have been concerned that apparent long-term trends in the levels of drug use among college students might actually be attributable to changes in the gender composition of each population. We present separate trend lines for college men and women in the lower panels of Figures 9-1 through 9-18.

In general, college student trends in use of the various drugs have been highly parallel for men and women, as an examination of the relevant figures will show. The most noteworthy exceptions are mentioned below.

- Certain drug use measures showed some convergence between the genders as prevalence declined to low levels in the early 1990s. This was true for annual use of ***any illicit drug*** and ***any illicit drug other than marijuana*** (Figures 9-1 and 9-2, respectively). After 1991 the genders diverged again, with some recent convergence especially for any illicit drug, due largely to a convergence for marijuana, discussed next.

- ***Marijuana*** use has been consistently higher among college men than among college women (Figure 9-3). There was some gender convergence in annual prevalence of marijuana use between 1980 and 1991 as overall use declined, and then some gender divergence between 1991 and 1999 as prevalence rose. After 2001, the two genders diverged further, with use among men remaining essentially unchanged through 2008 and use among women decreasing (Figure 9-3a). From 2010 through 2017, use among college men remained fairly steady, whereas use among college women increased from 2010 through 2016, reaching a level not seen since the 1980s, narrowing the gap considerably; use decreased nonsignificantly for both genders in 2017, to 41% for men and 37% for women. In 2018, use increased nonsignificantly to 43% for men and 42% for women, further narrowing the gap. The gap then opened up a bit in 2019 (46% for men, 41% for women) and in 2020 (46% for men, 43% for women). Annual prevalence in 2018-2020 has been at our near historic highs for both men and woman since the mid-1980s. The five-year trend from 2015 to 2020 showed a significant increase of 5.7 percentage points for college men and 5.9 percentage points for college women.

- Among college students, the 2017-2020 trend in 30-day prevalence of ***vaping marijuana*** (Figure 9-17) has been fairly parallel for men and women, including the slight downturn in 2020 (Figure 9-17). It increased for men from 8.7% in 2017 to 15% in 2020 (none of the one-year increases was significant, although prevalence nearly doubled between 2017 and 2019); for women, it increased significantly from 2.9% in 2017 to 12% in 2019 and then back to 11% in 2020, having increased by over four times between 2017 and 2019.

- ***Daily marijuana use*** (Figure 9-3b) has generally been about twice as high among college men as among college women throughout the study; since the mid-1990s, such use has risen more among men, especially since 2007, opening a wide difference. Between 2014 and 2017, daily use declined some for men and remained fairly level for women. From 2017 through 2020, daily use increased unevenly for men (to 11% in 2020) and increased steadily for women (to 6.1% in 2020), reaching historic highs for both. The five-year trends (2015-2020) were significant for men (increase of 4.0 percentage points) and women (increase of 2.7 percentage points).

- From 1999 to 2005, ***LSD*** use dropped more sharply among college men than among college women, offsetting sizeable previous differences in which men had higher use and bringing the genders close together at very low prevalence (Figure 9-7). The relatively steady increases in use that occurred between 2005 and 2020 were more uneven for men than for women. In 2020, the gender gap in annual prevalence of LSD widened because annual prevalence increased significantly for men to 9.1% (a historic high since 1995) and remained level for women at 3.7%. The five-year increase (2015-2020) was significant for men but not for women.

- Use of ***hallucinogens other than LSD*** dropped for both genders from 2002/2003 through 2017/2018, with percentages for men generally twice as high or more as those for women (Figure 9-8). In the past two or three years, it has increased for both, reaching 8.4 % for men and 4.4% for women in 2020, with the five-year trend being significant for women but not for men.

- Until recently, annual prevalence of ***MDMA*** (***ecstasy***, ***Molly***) use has been quite similar for college men and women since measures were first introduced in 1989, and changes in their usage levels have tracked closely (Figure 9-9). Between 2006-2007 and 2012-2013, men showed more increase than women; both showed some uneven declines from 2012-2013 through 2017 (3.1% for college men and 2.2% for college women). In 2018, use increased significantly for college men to 7.2% and increased nonsignificantly for college women to 2.7%. In 2019, use decreased significantly for college men to 3.2% and increased nonsignificantly for college women to 3.2%, thus eliminating the gender difference; and in 2020, it increased nonsignificantly for men to 4.8% and remained level for women at 3.2%. (Starting in 2014, the drug Molly was included as an example of MDMA. See Figure 9-9.) From the first measurement in 1988 through 2005 the two genders tracked closely, including the period of rapid rise in use (1994-2001) and the subsequent period of rapid decline (2001-2004); since then, the gender differences have been inconsistent with men typically higher.

- Trends in the nonmedical use of ***narcotics other than heroin*** have generally moved in parallel for both male and female college students, with men generally higher, except during the nadir in use at the beginning of the 1990s when their rates were equivalent. (Figure 9-11a). Both genders have shown considerable declines in their use since about 2005 or 2006, with the past few years showing a convergence, dropping to 0.8% for men and to 1.4% for women in 2020 (at or near historic lows for both); the five-year decline was significant for men but not for women.

- After 1986, ***cocaine*** use, which had been substantially higher among men until then, dropped more steeply for men than for women in general, and among male college students in particular, considerably narrowing the sizable gap between genders (Figure 9-10). From 1991 through 2014, both genders have moved in parallel, with college men typically reporting higher annual usage rates. Both genders showed small and nonsignificant upticks in use from 2014 through 2018/2019, with both showing nonsignificant declines in 2020 (to 5.0% for men and 3.1% for women); the five-year trends were nonsignificant for both college men and women.

- Nonmedical ***amphetamine*** use (Figure 9-12) also showed a little convergence in the 1980s due to a greater decline among men; the two genders showed virtually equivalent annual prevalence from 1986 through 1998. From 1998 through 2016 men had slightly higher annual prevalence generally, as use increased for both through 2012. Use continued to increase for men through 2015 while it declined for women. Between 2015 and 2020, use declined unevenly for men (reaching 8.4% in 2020) and was level and then decreased for women (to 5.3% in 2020); this five-year decline was significant for men, but not for women.

- The gender differences for nonmedical ***sedative*** (***barbiturate***) and ***tranquilizer*** use have been modest through most of the life of the study, with college men usually having slightly higher annual prevalence than college women (Figures 9-13 and 9-14). After 1995, a somewhat larger gap emerged for tranquilizers, again with men being higher most years. Tranquilizer use by college women peaked in 2003, briefly closing the gender gap, but use by men has typically been slightly higher since then. Since 2003, both have shown uneven declines through 2020 (2.8% for men and 2.3% for women), with the five-year trends being nonsignificant. Both genders have shown declines in annual use of sedatives from the early 2000s through 2011 and converging during this period. Both then showed a slight rebound through 2014, followed by a leveling for men and decline for women through 2018. Use then declined nonsignificantly for men through 2020 (1.4%) and increased nonsignificantly for women through 2020 (1.8%). The five-year trends were nonsignificant for both.

- Among college students, the *annual* prevalence of ***alcohol*** use has been virtually identical for the two genders since 1980, when use by college students was first reported (Figure 9-15a). Both college men and women have shown a very gradual and modest decline over the past four decades. Prior to 2000, *30-day* alcohol prevalence showed modest differences, with men slightly higher (Figure 9-15b); however, that difference largely disappeared by 2000, with few systematic gender differences over the past two decades.

In the past, college men had consistently had considerably higher rates of *daily drinking* than college women (Figures 9-15c). But since about 2004 or 2005 the gender gap in daily drinking has narrowed some, with some decrease among college women but, a larger decrease among college men. Both showed declines in 2017 to historic low levels, and remained level through 2020 for women and through 2019 for men, with a nonsignificant uptick for men in 2020.

- ***Binge drinking*** (one or more occasions of having five or more drinks in a row in the prior two weeks) has shown a considerable gender gap, but a gradual long-term decline among college men since about 1985 that continued into 2019 reduced the gap considerably (Figure 9-15d). Because there has been relatively little change among college women, whose use has been consistently less than that of college men, the gender gap has narrowed, especially from 2016 to 2019. In 2019, binge drinking increased nonsignificantly for both men and women (to 34% and 31%, respectively). In 2020, it declined nonsignificantly for men (32%) and declined significantly for women (20%); the five-year decline was significant for women but not for men.

- The gender gap in ***high-intensity drinking*** has been fairly steady, with two-week prevalence remaining much higher among men (Tables 9-5 and 9-6). Between 2005-2009 and 2010-2014, having ten or more drinks in a row increased from 15% to 20% for college men, and increased somewhat for college women from 6.6% to 7.9%. Between 2010-2014 and 2015-2020, having ten or more drinks in a row decreased slightly for men to 19% and for women to 6.6% (none of the changes across the three time-periods was significant for college men or women). Corresponding prevalence for having 15 or more drinks in a row dropped considerably for college men from 11% to 7.7% to 4.1% across the three time-periods; for women, prevalence was 1.4%, 2.4%, and 0.9% across the three time periods (the decrease between time 2 and 3 was significant for both college men and women).

- For the interval between 1980 and 1988, the *30-day* prevalence of ***cigarette smoking*** was higher among college women than men (Figure 9-16a). However, the difference in 30-day prevalence narrowed because use by college women declined considerably between 1980 and 1989, while use by college men did not decline. After 1989, as prevalence for both genders increased considerably, the difference remained quite small and the genders reversed position, with college men catching up to and passing women in their rate of smoking by 1994 and then generally remaining higher thereafter. (A similar reversal had occurred among 12th graders a few years earlier, so the reversal among college students probably reflected a cohort effect.) Both genders exhibited a considerable decrease in 30-day smoking between 1999 and 2011, leaving only a modest difference between them (although the trend line for college men was irregular during this interval). In 2020, use dropped significantly for men (to 4.2%) and nonsignificantly for women (to 3.9%), reaching all-time lows for both; the five-year trends were significant for both. *Daily smoking* and *half-pack-a-day smoking* (Figures 9-16b and c) also were initially higher among college women than among college men, this time up through 1994, after which the two genders have tracked rather closely, both reaching historic lows in 2017 or 2018 and close to historic lows in 2019 and 2020. It thus appears that college men in recent years have been more likely than college women to smoke at a less than daily rate but about

equally likely as women to smoke at more frequent rates, though daily use is now very low for both.

- Among college students, 30-day prevalence of ***vaping nicotine*** (Figure 9-18) increased significantly from 2017 to 2018 for both men (11% to 22%) and women (3.2% to 12%); it increased significantly again in 2019 for both men (to 32%) and women (to 17%). In 2020, men declined significantly to 22% and women were level (17%), thus narrowing the gender gap.

TABLE 9-1
Trends in Lifetime Prevalence of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

(Years cont.)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Approximate Weighted N =	*1,040*	*1,130*	*1,150*	*1,170*	*1,110*	*1,080*	*1,190*	*1,220*	*1,310*	*1,300*	*1,400*	*1,410*	*1,490*	*1,490*	*1,410*	*1,450*	*1,450*	*1,480*	*1,440*	*1,440*
Any Illicit Drug [1,33]	69.4	66.8	64.6	66.9	62.7	65.2	61.8	60.0	58.4	55.6	54.0	50.4	48.8	45.9	45.5	45.5	47.4	49.0	52.9	53.2
Any Illicit Drug other than Marijuana [1,33]	42.2	41.3	39.6	41.7	38.6	40.0	37.5	35.7	33.4	30.5	28.4	25.8	26.1	24.3	22.0	24.5	22.7	24.4	24.8	25.5
Marijuana	65.0	63.3	60.5	63.1	59.0	60.6	57.9	55.8	54.3	51.3	49.1	46.3	44.1	42.0	42.2	41.7	45.1	46.1	49.9	50.8
Inhalants [2]	10.2	8.8	10.6	11.0	10.4	10.6	11.0	13.2	12.6	15.0	13.9	14.4	14.2	14.8	12.0	13.8	11.4	12.4	12.8	12.4
Hallucinogens [3,24]	15.0	12.0	15.0	12.2	12.9	11.4	11.2	10.9	10.2	10.7	11.2	11.3	12.0	11.8	10.0	13.0	12.6	13.8	15.2	14.8
LSD [24]	10.3	8.5	11.5	8.8	9.4	7.4	7.7	8.0	7.5	7.8	9.1	9.6	10.6	10.6	9.2	11.5	10.8	11.7	13.1	12.7
Hallucinogens other than LSD [3,24]	11.6	9.0	10.6	8.3	9.2	8.1	7.8	6.8	6.2	6.2	6.0	6.0	5.7	5.4	4.4	6.5	6.5	7.5	8.7	8.8
MDMA (ecstasy, molly), original [4,26]	—	—	—	—	—	—	—	—	—	3.8	3.9	2.0	2.9	2.3	2.1	3.1	4.3	4.6	6.8	8.4
MDMA (ecstasy, molly), revised [4,26]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine [33]	22.0	21.5	22.4	23.1	21.7	22.9	23.3	20.6	15.8	14.6	11.4	9.4	7.9	6.3	5.0	5.5	5.0	5.6	8.1	8.4
Crack [5,33]	—	—	—	—	—	—	—	3.3	3.4	2.4	1.4	1.5	1.7	1.3	1.0	1.8	1.2	1.4	2.2	2.4
Other Cocaine [6,33]	—	—	—	—	—	—	—	18.1	14.2	16.0	10.2	9.0	7.6	6.3	4.6	5.2	4.6	5.0	7.4	7.8
Heroin	0.9	0.6	0.5	0.3	0.5	0.4	0.4	0.6	0.3	0.7	0.3	0.5	0.5	0.6	0.1	0.6	0.7	0.9	1.7	0.9
Narcotics other than Heroin [7,8]	8.9	8.3	8.1	8.4	8.9	6.3	8.8	7.6	6.3	7.6	6.8	7.3	7.3	6.2	5.1	7.2	5.7	8.2	8.7	8.7
Amphetamines [7,9]	29.5	29.4	30.1	27.8	27.8	25.4	22.3	19.8	17.7	14.6	13.2	13.0	10.5	10.1	9.2	10.7	9.5	10.6	10.6	11.9
Methamphetamine [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.1
Crystal Methamphetamine (Ice) [10]	—	—	—	—	—	—	—	—	—	—	1.0	1.3	0.6	1.6	1.3	1.0	0.8	1.6	2.2	2.8
Sedatives (Barbiturates) [7,20]	8.1	7.8	8.2	6.6	6.4	4.9	5.4	3.5	3.6	3.2	3.8	3.5	3.8	3.5	3.2	4.0	4.6	5.2	5.7	6.7
Sedatives, Adjusted [7,11]	13.7	14.2	14.1	12.2	10.8	9.3	8.0	6.1	4.7	4.1	—	—	—	—	—	—	—	—	—	—
Methaqualone [7]	10.3	10.4	11.1	9.2	9.0	7.2	5.8	4.1	2.2	2.4	—	—	—	—	—	—	—	—	—	—
Tranquilizers [7,12]	15.2	11.4	11.7	10.8	10.8	9.8	10.7	8.7	8.0	8.0	7.1	6.8	6.9	6.3	4.4	5.4	5.4	6.9	7.7	8.2
Alcohol [13]	94.3	95.2	95.2	95.0	94.2	95.3	94.9	94.1	94.9	93.7	93.1	93.6	91.8	89.3	88.2	88.5	88.4	87.3	88.5	88.0
Been Drunk [14]	—	—	—	—	—	—	—	—	—	—	—	79.6	76.8	76.4	74.4	76.6	76.2	77.0	76.8	75.1
Flavored Alcoholic Beverages [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana [27,34]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids [16]	—	—	—	—	—	—	—	—	—	0.4	1.5	1.4	1.7	1.9	0.5	0.8	0.6	1.6	0.9	1.3

(Table continued on next page.)

TABLE 9-1 (cont.)
Trends in Lifetime Prevalence of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Approximate Weighted N =	*1,350*	*1,340*	*1,260*	*1,270*	*1,400*	*1,360*	*1,280*	*1,250*	*1,270*	*1,320*	*1,260*	*1,230*	*1,150*	*1,090*	*1,030*	*1,020*	*870*	*880*	*900*	*840*	*980*	
Any Illicit Drug [1,33]	53.7	53.6	51.8	53.9	52.2	52.3	50.6	50.5	49.5	51.4	49.1	49.2	50.5	53.3	52.4	53.4	54.4	55.4	55.7	58.9	56.3	-2.6
Any Illicit Drug other than Marijuana [1,33]	25.8	26.3	26.9	27.6	28.0	26.5	26.3	25.3	22.6	25.6	24.8	24.3	23.8	28.3	29.0	26.4	26.5	26.1	27.3	26.2	22.6	-3.6
Marijuana	51.2	51.0	49.5	50.7	49.1	49.1	46.9	47.5	46.8	47.5	46.8	46.6	49.1	47.7	48.5	50.4	51.0	50.5	52.4	54.7	55.4	+0.8
Inhalants [2]	12.9	9.6	7.7	9.7	8.5	7.1	7.4	6.3	4.9	6.9	5.5	3.7	5.7	4.3	3.5	3.1	3.2	3.4	3.0	4.6	4.5	-0.1
Hallucinogens [3,24]	14.4	14.8	13.6	14.5	12.0	11.0	10.6	9.1	8.5	8.0	7.8	7.4	7.6	7.8	7.6	6.5	7.7	7.2	8.5	9.1	11.2	+2.1
LSD [24]	11.8	12.2	8.6	8.7	5.6	3.7	3.5	3.3	4.3	3.3	4.0	3.7	3.1	4.4	4.5	4.8	5.1	5.3	6.9	6.5	9.0	+2.4
Hallucinogens other than LSD [3,24]	8.2	10.7	11.0	12.8	10.1	10.6	10.1	8.5	8.2	7.8	7.1	6.9	7.2	6.8	6.8	5.1	6.6	5.0	5.0	6.9	7.8	+0.8
MDMA (ecstasy, molly), original [4,26]	13.1	14.7	12.7	12.9	10.2	8.3	6.9	5.4	6.2	6.5	6.2	6.8	8.7	8.1	8.2	—	—	—	—	—	—	—
MDMA (ecstasy, molly), revised [4,26]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	8.9	8.4	5.3	7.6	7.0	6.6	-0.4
Cocaine [33,37]	9.1	8.6	8.2	9.2	9.5	8.8	7.7	8.5	7.2	8.1	6.6	5.5	5.2	5.1	6.2	6.1	5.3	6.5	8.5	8.8	5.9	-2.8 s
Crack [5,33]	2.5	2.0	1.9	3.1	2.0	1.7	2.3	1.3	1.4	1.0	1.2	0.8	0.7	0.7	1.4	0.5	0.4	0.6	0.9	0.0	0.6	+0.6
Other Cocaine [6,33]	8.1	8.3	8.6	8.5	9.3	8.1	6.2	8.0	7.1	7.9	6.7	5.4	5.1	5.2	6.2	6.4	6.5	6.1	6.7	6.1	5.3	-0.8
Heroin	1.7	1.2	1.0	1.0	0.9	0.5	0.7	0.5	0.7	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.5	0.1	0.1	0.3	0.4	+0.1
Narcotics other than Heroin [7,8]	8.9	11.0	12.2	14.2	13.8	14.4	14.6	14.1	12.4	14.0	12.2	12.4	10.3	10.8	9.9	6.6	7.4	6.8	6.6	5.8	4.1	-1.7
Amphetamines [7,9,38]	12.3	12.4	11.9	12.3	12.7	12.3	10.7	11.2	9.1	11.8	12.1	13.4	14.4	16.1	15.0	13.9	13.6	12.6	13.2	13.5	10.6	-2.9 s
Methamphetamine [10]	5.1	5.3	5.0	5.8	5.2	4.1	2.9	1.9	1.9	1.0	1.1	0.6	0.3	0.9	0.7	0.8	0.6	0.6	1.0	1.1	0.2	-1.0
Crystal Methamphetamine (Ice) [10]	1.3	2.3	2.0	2.9	2.2	2.4	1.7	1.3	1.1	0.7	0.8	0.2	0.6	0.0	0.3	0.3	0.6	0.4	0.8	0.6	—	—
Sedatives (Barbiturates) [7,20]	6.9	6.0	5.9	5.7	7.2	8.5	6.3	5.9	6.4	6.0	5.3	3.6	3.5	5.4	5.9	4.4	3.3	3.9	3.3	3.7	2.8	-1.0
Sedatives, Adjusted [7,11]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [7]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [7,12,39]	8.8	9.7	10.7	11.0	10.6	11.9	10.0	9.1	8.6	9.2	8.1	7.1	6.4	7.8	6.9	7.8	6.5	6.7	7.4	7.4	4.9	-2.5 s
Alcohol [13]	86.6	86.1	86.0	86.2	84.6	86.6	84.7	83.1	85.3	82.6	82.3	80.5	81.0	78.0	79.4	81.4	81.3	79.1	77.4	79.2	79.2	0.0
Been Drunk [14]	74.7	76.1	75.1	74.9	73.4	72.9	73.1	71.6	72.5	69.1	70.5	67.9	70.0	66.5	68.8	68.6	66.7	64.8	66.8	65.5	65.1	-0.4
Flavored Alcoholic Beverages [15,40]	—	—	—	—	79.0	84.5	80.9	80.6	78.6	78.1	77.4	76.7	76.6	67.5	72.7	74.8	76.1	72.4	71.0	72.2	90.0	+17.8 sss
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.0	26.8	36.0	39.9	49.4	49.3	-0.1
Vaping Marijuana [27,34,41]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.4	23.8	29.4	34.6	+5.3 s
Vaping Nicotine [27,42]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5	32.4	41.9	47.3	+5.4 s
Vaping Just Flavoring [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.7	27.1	28.7	32.8	+4.1
Steroids [16]	0.6	1.5	1.2	1.2	1.6	1.0	1.9	0.6	1.6	1.3	0.7	1.1	0.4	0.8	0.9	0.6	0.8	1.2	0.3	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 9-7.

TABLE 9-2
Trends in Annual Prevalence of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

(Years cont.)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Approximate Weighted N =	*1,040*	*1,130*	*1,150*	*1,170*	*1,110*	*1,080*	*1,190*	*1,220*	*1,310*	*1,300*	*1,400*	*1,410*	*1,490*	*1,490*	*1,410*	*1,450*	*1,450*	*1,480*	*1,440*	*1,440*
Any Illicit Drug [1,33]	56.2	55.0	49.5	49.8	45.1	46.3	45.0	40.1	37.4	36.7	33.3	29.2	30.6	30.6	31.4	33.5	34.2	34.1	37.8	36.9
Any Illicit Drug other than Marijuana [1,33]	32.3	31.7	29.9	29.9	27.2	26.7	25.0	21.3	19.2	16.4	15.2	13.2	13.1	12.5	12.2	15.9	12.8	15.8	14.0	15.4
Synthetic Marijuana [21]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Marijuana	51.2	51.3	44.7	45.2	40.7	41.7	40.9	37.0	34.6	33.6	29.4	26.5	27.7	27.9	29.3	31.2	33.1	31.6	35.9	35.2
Inhalants [2]	3.0	2.5	2.5	2.8	2.4	3.1	3.9	3.7	4.1	3.7	3.9	3.5	3.1	3.8	3.0	3.9	3.6	4.1	3.0	3.2
Hallucinogens [3,24]	8.5	7.0	8.7	6.5	6.2	5.0	6.0	5.9	5.3	5.1	5.4	6.3	6.8	6.0	6.2	8.2	6.9	7.7	7.2	7.8
LSD [24]	6.0	4.6	6.3	4.3	3.7	2.2	3.9	4.0	3.6	3.4	4.3	5.1	5.7	5.1	5.2	6.9	5.2	5.0	4.4	5.4
Hallucinogens other than LSD [3,24]	5.2	4.7	5.4	3.9	4.1	3.9	3.8	3.1	3.4	3.1	3.0	3.1	2.6	2.7	2.8	4.0	4.1	4.9	4.4	4.5
MDMA (ecstasy, molly), original [4,26]	—	—	—	—	—	—	—	—	—	2.3	2.3	0.9	2.0	0.8	0.5	2.4	2.8	2.4	3.9	5.5
MDMA (ecstasy, molly), revised [4,26]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvia [22]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine [33]	16.8	16.0	17.2	17.3	16.3	17.3	17.1	13.7	10.0	8.2	5.6	3.6	3.0	2.7	2.0	3.6	2.9	3.4	4.6	4.6
Crack [5,33]	—	—	—	—	—	—	—	2.0	1.4	1.5	0.6	0.5	0.4	0.6	0.5	1.1	0.6	0.4	1.0	0.9
Other Cocaine [6,33]	—	—	—	—	—	—	—	10.7	10.6	9.3	5.1	3.2	2.4	2.5	1.8	3.3	2.3	3.0	4.2	4.2
Heroin	0.4	0.2	0.1	*	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.6	0.2
Narcotics other than Heroin [7,8]	5.1	4.3	3.8	3.8	3.8	2.4	4.0	3.1	3.1	3.2	2.9	2.7	2.7	2.5	2.4	3.8	3.1	4.2	4.2	4.3
OxyContin [7,17,35]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vicodin [7,17]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines [7,9]	22.4	22.2	21.1	17.3	15.7	11.9	10.3	7.2	6.2	4.6	4.5	3.9	3.6	4.2	4.2	5.4	4.2	5.7	5.1	5.8
Ritalin [7,17]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Adderall [7,17]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3
Crystal Methamphetamine (Ice) [10]	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2	0.7	0.8	1.1	0.4	0.8	1.0	0.5
Bath Salts (synthetic stimulants) [14]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sedatives (Barbiturates) [7,20]	2.9	2.8	3.2	2.2	1.9	1.3	2.0	1.2	1.1	1.0	1.4	1.2	1.4	1.5	1.2	2.0	2.3	3.0	2.5	3.2
Sedatives, Adjusted [7,11]	8.3	8.0	8.0	4.5	3.5	2.5	2.6	1.7	1.5	1.0	—	—	—	—	—	—	—	—	—	—
Methaqualone [7]	7.2	6.5	6.6	3.1	2.5	1.4	1.2	0.8	0.5	0.2	—	—	—	—	—	—	—	—	—	—
Tranquilizers [7,12]	6.9	4.8	4.7	4.6	3.5	3.6	4.4	3.8	3.1	2.6	3.0	2.4	2.9	2.4	1.8	2.9	2.8	3.8	3.9	3.8
Rohypnol [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GHB [23]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ketamine [23]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [13]	90.5	92.5	92.2	91.6	90.0	92.0	91.5	90.9	89.6	89.6	89.0	88.3	86.9	85.1	82.7	83.2	83.0	82.4	84.6	83.6
Been Drunk [14]	—	—	—	—	—	—	—	—	—	—	—	69.1	67.3	65.6	63.1	62.1	64.2	66.8	67.0	65.4
Flavored Alcoholic Beverages [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholic Beverages mixed with Energy Drinks [10,19]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes	36.2	37.6	34.3	36.1	33.2	35.0	35.3	38.0	36.6	34.2	35.5	35.6	37.3	38.8	37.6	39.3	41.4	43.6	44.3	44.5
Any Vaping [27,28]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana [27,29]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine [27,30]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tobacco Using a Hookah [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Small Cigars [25]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Snus [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolvable Tobacco [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids [16]	—	—	—	—	—	—	—	—	—	0.4	0.5	0.6	0.2	0.9	0.2	0.4	0.2	0.7	0.2	0.9

(Table continued on next page.)

TABLE 9-2 (cont.)
Trends in Annual Prevalence of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Approximate Weighted N =	*1,350*	*1,340*	*1,260*	*1,270*	*1,400*	*1,360*	*1,280*	*1,250*	*1,270*	*1,320*	*1,260*	*1,230*	*1,150*	*1,090*	*1,030*	*1,020*	*870*	*880*	*900*	*840*	*980*	
Any Illicit Drug [1,33]	36.1	37.9	37.0	36.5	36.2	36.6	33.9	35.0	35.2	36.0	35.0	36.3	37.3	40.5	38.6	41.4	42.8	42.4	45.4	46.5	45.6	-0.9
Any Illicit Drug other than Marijuana [1,33]	15.6	16.4	16.6	17.9	18.6	18.5	18.1	17.3	15.3	16.9	17.1	16.8	17.1	19.3	20.8	18.5	19.7	18.1	18.2	16.8	16.2	-0.5
Synthetic Marijuana [21]	—	—	—	—	—	—	—	—	—	—	—	8.5	5.3	2.3	0.9	1.5	1.3	0.5	1.6	1.8	0.5	-1.3
Marijuana	34.0	35.6	34.7	33.7	33.3	33.3	30.2	31.8	32.3	32.8	32.7	33.2	34.9	35.5	34.4	37.9	39.3	38.3	42.6	43.0	43.9	+0.9
Inhalants [2]	2.9	2.8	2.0	1.8	2.7	1.8	1.5	1.5	1.1	1.2	1.7	0.9	1.5	0.5	1.3	0.6	0.2	1.7	1.3	1.3	1.2	-0.1
Hallucinogens [3,24,45]	6.7	7.5	6.3	7.4	5.9	5.0	5.6	4.9	5.1	4.7	4.9	4.1	4.5	4.5	4.0	4.3	4.5	4.1	5.1	5.3	8.6	+3.3 ss
LSD [24,43]	4.3	4.0	2.1	1.4	1.2	0.7	1.4	1.3	2.6	2.0	2.1	2.0	1.9	2.6	2.2	3.0	3.1	2.8	4.1	3.7	5.8	+2.1 s
Hallucinogens other than LSD [3,24,44]	4.4	5.5	5.8	7.1	5.6	5.0	5.4	4.7	4.4	4.1	4.4	3.4	3.9	3.7	3.2	3.0	3.4	2.5	2.4	3.3	5.8	+2.5 s
MDMA (ecstasy, molly), original [4,26]	9.1	9.2	6.8	4.4	2.2	2.9	2.6	2.2	3.7	3.1	4.3	4.2	5.8	5.3	5.0	—	—	—	—	—	—	—
MDMA (ecstasy, molly), revised [4,26]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	4.2	4.7	2.5	4.3	3.3	3.7	+0.4
Salvia [22]	—	—	—	—	—	—	—	—	—	5.8	3.5	3.1	1.5	1.0	1.1	0.4	0.7	0.3	0.9	0.3	0.3	0.0
Cocaine [33,46]	4.8	4.7	4.8	5.4	6.6	5.7	5.1	5.4	4.4	4.2	3.5	3.3	3.1	2.7	4.4	4.3	4.0	4.8	6.0	5.6	3.8	-1.9 s
Crack [5,33]	0.9	0.9	0.4	1.3	1.3	0.8	1.0	0.6	0.5	0.3	0.4	0.3	0.3	0.3	0.8	0.2	0.0	0.2	0.7	0.0	0.0	0.0
Other Cocaine [6,33]	4.1	4.1	5.0	5.1	6.3	5.0	3.8	5.3	4.2	4.2	4.0	3.0	3.0	2.8	4.1	4.2	4.7	4.4	4.6	3.5	2.7	-0.8
Heroin	0.5	0.4	0.1	0.2	0.4	0.3	0.3	0.2	0.3	0.4	0.2	0.1	0.1	0.3	0.0	0.1	0.2	0.0	0.0	0.0	*	0.0
Narcotics other than Heroin [7,8]	4.5	5.7	7.4	8.7	8.2	8.4	8.8	7.7	6.5	7.6	7.2	6.2	5.4	5.4	4.8	3.3	3.8	3.1	2.7	1.5	1.3	-0.2
OxyContin [7,17,35,47]	—	—	1.5	2.2	2.5	2.1	3.0	2.8	3.6	5.0	2.3	2.4	1.2	2.3	1.3	1.5	1.9	1.7	1.6	2.5	1.5	-1.0
Vicodin [7,17]	—	—	6.9	7.5	7.4	9.6	7.6	6.7	6.7	8.4	4.9	5.8	3.8	4.4	2.8	1.6	1.3	1.1	1.5	1.5	1.2	-0.2
Amphetamines [7,9]	6.6	7.2	7.0	7.1	7.0	6.7	6.0	6.9	5.7	7.5	9.0	9.3	11.1	9.6	10.1	9.7	9.8	8.6	8.3	8.1	6.5	-1.6
Ritalin [7,17]	—	—	5.7	4.7	4.7	4.2	3.9	3.7	3.2	1.7	1.9	2.3	1.8	3.6	1.6	2.0	2.4	1.4	1.3	2.5	1.4	-1.0
Adderall [7,17]	—	—	—	—	—	—	—	—	—	10.2	9.0	9.8	9.0	10.7	9.6	10.7	9.9	9.4	11.0	8.4	7.2	-1.3
Methamphetamine [10]	1.6	2.4	1.2	2.6	2.9	1.7	1.2	0.4	0.5	0.3	0.4	0.2	0.0	0.4	0.1	0.5	0.0	0.4	0.4	0.0	0.0	0.0
Crystal Methamphetamine (Ice) [10]	0.5	0.6	0.8	0.9	1.1	1.4	0.6	0.7	0.1	0.1	0.5	0.1	0.6	*	*	*	*	0.4	*	0.3	—	—
Bath Salts (synthetic stimulants) [14]	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.1	0.2	0.1	0.0	0.2	0.0	—	—	—
Sedatives (Barbiturates) [7,20]	3.7	3.8	3.7	4.1	4.2	3.9	3.4	3.6	3.7	3.1	2.5	1.7	2.2	2.7	3.1	2.3	2.1	1.9	1.5	2.0	1.7	-0.2
Sedatives, Adjusted [7,11]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [7]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [7,12]	4.2	5.1	6.7	6.9	6.7	6.4	5.8	5.5	5.0	5.4	4.9	4.2	3.4	4.4	3.5	4.3	4.9	3.6	3.5	3.0	2.6	-0.4
Rohypnol [10]	—	—	0.7	0.4	0.3	0.1	0.2	0.1	0.3	*	—	—	—	—	—	—	—	—	—	—	—	—
GHB [23]	—	—	0.6	0.3	0.7	0.4	*	0.1	0.2	*	0.1	0.1	*	0.1	0.2	*	—	—	—	—	—	—
Ketamine [23]	—	—	1.3	1.0	1.5	0.5	0.9	0.2	0.4	0.1	0.7	0.6	0.4	0.9	0.1	0.6	0.5	0.3	0.9	0.7	0.3	-0.3
Alcohol [13]	83.2	83.0	82.9	81.7	81.2	83.0	82.1	80.9	82.1	79.4	78.6	77.4	79.2	75.6	76.1	79.0	78.9	75.8	74.6	77.6	76.7	-0.9
Been Drunk [14]	64.7	68.8	66.0	64.7	67.1	64.2	66.2	64.8	66.8	61.5	63.8	60.1	61.5	57.9	60.5	61.6	60.7	58.0	59.2	58.7	58.0	-0.7
Flavored Alcoholic Beverages [15,48]	—	—	—	—	63.2	67.0	63.5	62.6	65.0	66.1	60.3	63.0	58.1	57.6	64.2	64.5	68.5	60.3	58.4	64.6	80.8	+16.2 ss
Alcoholic Beverages mixed with Energy Drinks [10,19,49]	—	—	—	—	—	—	—	—	—	—	—	33.6	33.8	39.1	32.8	34.1	29.4	31.3	27.4	35.6	20.7	-14.8 ss
Cigarettes	41.3	39.0	38.3	35.2	36.7	36.0	30.9	30.7	30.0	29.9	28.1	25.8	23.4	23.2	22.6	20.1	18.7	16.7	15.5	16.0	17.5	+1.4
Any Vaping [27,28]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.5	32.4	43.7	39.6	-4.1
Vaping Marijuana [27,29]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.7	20.2	25.5	24.6	-1.0
Vaping Nicotine [27,30]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.0	25.6	35.3	32.6	-2.7
Vaping Just Flavoring [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.1	14.0	15.6	13.3	-2.3
Tobacco Using a Hookah [10]	—	—	—	—	—	—	—	—	—	—	—	27.9	25.7	26.1	32.7	23.4	16.9	10.0	11.4	10.6	8.3	-2.2
Small Cigars [25]	—	—	—	—	—	—	—	—	—	—	—	23.6	20.3	19.0	24.2	19.6	17.6	14.0	15.6	8.8	10.7	+1.8
Snus [10]	—	—	—	—	—	—	—	—	—	—	—	6.5	4.7	4.8	5.0	5.8	3.3	4.3	1.0	1.4	2.2	+0.8
Dissolvable Tobacco [10]	—	—	—	—	—	—	—	—	—	—	—	*	0.3	0.2	0.5	1.1	0.3	0.7	0.0	0.0	0.8	+0.8 ss
Steroids [16]	0.1	0.6	0.5	0.3	0.6	0.5	0.8	0.6	0.1	0.7	0.3	0.2	0.3	0.8	0.5	0.3	0.0	0.6	0.0	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 9-7.

TABLE 9-3
Trends in 30-Day Prevalence of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

(Years cont.)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Approximate Weighted N =	*1,040*	*1,130*	*1,150*	*1,170*	*1,110*	*1,080*	*1,190*	*1,220*	*1,310*	*1,300*	*1,400*	*1,410*	*1,490*	*1,490*	*1,410*	*1,450*	*1,450*	*1,480*	*1,440*	*1,440*
Any Illicit Drug [1,33]	38.4	37.6	31.3	29.3	27.0	26.1	25.9	22.4	18.5	18.2	15.2	15.2	16.1	15.1	16.0	19.1	17.6	19.2	19.7	21.6
Any Illicit Drug other than Marijuana [1,33]	20.7	18.6	17.1	13.9	13.8	11.8	11.6	8.8	8.5	6.9	4.4	4.3	4.6	5.4	4.6	6.3	4.5	6.8	6.1	6.4
Marijuana	34.0	33.2	26.8	26.2	23.0	23.6	22.3	20.3	16.8	16.3	14.0	14.1	14.6	14.2	15.1	18.6	17.5	17.7	18.6	20.7
Inhalants [2]	1.5	0.9	0.8	0.7	0.7	1.0	1.1	0.9	1.3	0.8	1.0	0.9	1.1	1.3	0.6	1.6	0.8	0.7	0.6	1.5
Hallucinogens [3,24]	2.7	2.3	2.6	1.8	1.8	1.3	2.2	2.0	1.7	2.3	1.4	1.2	2.3	2.5	2.1	3.3	1.9	2.1	2.1	2.0
LSD [24]	1.4	1.4	1.7	0.9	0.8	0.7	1.4	1.4	1.1	1.4	1.1	0.8	1.8	1.6	1.8	2.5	0.9	1.1	1.5	1.2
Hallucinogens other than LSD [3,24]	1.9	1.2	1.4	1.0	1.2	0.7	1.2	0.8	0.8	1.1	0.8	0.6	0.7	1.1	0.8	1.6	1.2	1.2	0.7	1.2
MDMA (ecstasy, molly), original [4,26]	—	—	—	—	—	—	—	—	—	0.3	0.6	0.2	0.4	0.3	0.2	0.7	0.7	0.8	0.8	2.1
MDMA (ecstasy, molly), revised [4,26]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine [33]	6.9	7.3	7.9	6.5	7.6	6.9	7.0	4.6	4.2	2.8	1.2	1.0	1.0	0.7	0.6	0.7	0.8	1.6	1.6	1.2
Crack [5,33]	—	—	—	—	—	—	1.3	0.4	0.5	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3
Other Cocaine [6,33]	—	—	—	—	—	—	—	3.5	3.2	3.2	1.0	1.0	0.9	0.6	0.3	0.8	0.6	1.3	1.5	1.0
Heroin	0.3	*	*	*	*	*	*	0.1	0.1	0.1	*	0.1	*	*	*	0.1	*	0.2	0.1	0.1
Narcotics other than Heroin [7,8]	1.8	1.1	0.9	1.1	1.4	0.7	0.6	0.8	0.8	0.7	0.5	0.6	1.0	0.7	0.4	1.2	0.7	1.3	1.1	1.0
Amphetamines [7,9]	13.4	12.3	9.9	7.0	5.5	4.2	3.7	2.3	1.8	1.3	1.4	1.0	1.1	1.5	1.5	2.2	0.9	2.1	1.7	2.3
Methamphetamine [10]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2
Crystal Methamphetamine (Ice) [10]	—	—	—	—	—	—	—	—	—	—	*	*	*	0.3	0.5	0.3	0.1	0.2	0.3	*
Sedatives (Barbiturates) [7,20]	0.9	0.8	1.0	0.5	0.7	0.4	0.6	0.5	0.5	0.2	0.2	0.3	0.7	0.4	0.4	0.5	0.8	1.2	1.1	1.1
Sedatives, Adjusted [7,11]	3.8	3.4	2.5	1.1	1.0	0.7	0.6	0.6	0.6	0.2	—	—	—	—	—	—	—	—	—	—
Methaqualone [7]	3.1	3.0	1.9	0.7	0.5	0.3	0.1	0.2	0.1	0.0	—	—	—	—	—	—	—	—	—	—
Tranquilizers [7,12]	2.0	1.4	1.4	1.2	1.1	1.4	1.9	1.0	1.1	0.8	0.5	0.6	0.6	0.4	0.4	0.5	0.7	1.2	1.3	1.1
Alcohol [13]	81.8	81.9	82.8	80.3	79.1	80.3	79.7	78.4	77.0	76.2	74.5	74.7	71.4	70.1	67.8	67.5	67.0	65.8	68.1	69.6
Been Drunk [14]	—	—	—	—	—	—	—	—	—	—	—	45.0	45.0	43.8	42.8	37.9	40.3	46.4	44.3	44.6
Flavored Alcoholic Beverages [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes [36]	25.8	25.9	24.4	24.7	21.5	22.4	22.4	24.0	22.6	21.1	21.5	23.2	23.5	24.5	23.5	26.8	27.9	28.3	30.0	30.6
Any Vaping [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana [27,31]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Large Cigars [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Flavored Little Cigars [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Regular Little Cigars [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids [16]	—	—	—	—	—	—	—	—	—	*	0.2	0.3	0.2	0.2	0.2	0.1	*	0.2	0.2	0.4

(Table continued on next page.)

TABLE 9-3 (cont.)
Trends in 30-Day Prevalence of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019– 2020 change
Approximate Weighted N =	*1,350*	*1,340*	*1,260*	*1,270*	*1,400*	*1,360*	*1,280*	*1,250*	*1,270*	*1,320*	*1,260*	*1,230*	*1,150*	*1,090*	*1,030*	*1,020*	*870*	*880*	*900*	*840*	*980*	
Any Illicit Drug [1,33,50]	21.5	21.9	21.5	21.4	21.2	19.5	19.2	19.3	18.9	20.7	19.2	21.4	22.3	22.8	22.7	23.4	24.3	23.3	27.0	29.7	25.2	-4.5 s
Any Illicit Drug other than Marijuana [1,33]	6.9	7.5	7.8	8.2	9.1	8.2	8.2	8.1	7.3	8.4	8.1	8.2	7.8	8.8	10.0	9.2	8.4	7.0	7.9	7.6	6.0	-1.6
Marijuana	20.0	20.2	19.7	19.3	18.9	17.1	16.7	16.8	17.0	18.5	17.5	19.4	20.5	20.6	20.8	21.1	22.2	21.2	24.7	26.3	24.5	-1.7
Inhalants [2]	0.9	0.4	0.7	0.4	0.4	0.3	0.4	0.1	0.4	0.1	0.5	0.3	0.2	0.1	0.3	0.2	*	0.9	0.2	0.4	0.4	-0.1
Hallucinogens [3,24]	1.4	1.8	1.2	1.8	1.3	1.2	0.9	1.3	1.7	1.0	1.4	1.2	1.1	1.0	1.0	1.4	0.8	1.2	1.1	1.4	2.4	+1.0
LSD [24]	0.9	1.0	0.2	0.2	0.2	0.1	0.3	0.3	0.8	0.3	0.7	0.5	0.4	0.4	0.5	0.7	0.4	0.8	1.0	1.1	1.1	0.0
Hallucinogens other than LSD [3,24]	0.8	0.8	1.1	1.7	1.2	1.1	0.7	1.1	1.3	0.8	1.2	0.8	0.7	0.8	0.7	0.9	0.5	0.6	0.4	0.8	1.5	+0.7
MDMA (ecstasy, molly), original [4,26]	2.5	1.5	0.7	1.0	0.7	0.8	0.6	0.4	0.6	0.5	1.0	0.7	1.4	0.8	1.3	—	—	—	—	—	—	—
MDMA (ecstasy, molly), revised [4,26]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.7	1.0	0.5	1.3	1.1	0.8	-0.3
Cocaine [33]	1.4	1.9	1.6	1.9	2.4	1.8	1.8	1.7	1.2	1.3	1.0	1.2	1.1	0.9	1.8	1.5	1.4	1.3	2.6	2.4	1.4	-1.0
Crack [5,33]	0.3	0.1	0.3	0.4	0.4	0.1	*	0.1	0.1	0.1	0.1	0.1	*	0.3	0.1	*	*	*	0.4	*	*	0.0
Other Cocaine [6,33]	0.9	1.5	1.4	1.9	2.2	1.8	1.3	1.6	1.1	1.2	1.0	1.2	1.3	0.9	1.8	1.4	1.7	1.1	1.9	1.3	0.9	-0.3
Heroin	0.2	0.1	*	*	0.1	0.1	0.2	0.1	*	0.1	*	*	0.1	0.2	*	*	0.2	*	*	*	*	0.0
Narcotics other than Heroin [7,8]	1.7	1.7	3.2	2.3	3.0	3.1	3.1	2.2	2.3	2.7	2.3	2.1	2.2	1.5	1.2	1.3	1.1	0.7	1.0	0.4	0.5	0.0
Amphetamines [7,9,51]	2.9	3.3	3.0	3.1	3.2	2.9	2.5	3.1	2.8	3.4	4.1	4.5	4.6	5.0	4.8	4.2	3.8	3.6	2.9	3.4	1.6	-1.8 ss
Methamphetamine [10]	0.2	0.5	0.2	0.6	0.2	0.1	0.2	0.1	*	0.1	*	*	*	*	0.1	*	*	*	*	*	*	0.0
Crystal Methamphetamine (Ice) [10]	*	0.1	*	0.3	0.1	0.2	*	0.1	*	*	0.2	*	0.3	*	*	*	*	0.4	*	*	—	—
Sedatives (Barbiturates) [7,20]	1.1	1.5	1.7	1.7	1.5	1.3	1.3	1.4	1.4	1.2	0.6	0.8	0.8	0.9	0.7	1.0	0.9	0.5	0.5	0.5	0.5	0.0
Sedatives, Adjusted [7,11]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [7]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers [7,12]	2.0	1.5	3.0	2.8	2.7	2.2	2.1	1.8	1.6	2.2	1.3	1.6	1.1	1.2	1.7	1.6	1.8	0.9	1.1	0.7	0.4	-0.3
Alcohol [13,52]	67.4	67.0	68.9	66.2	67.7	67.9	65.4	66.6	69.0	65.8	65.0	63.5	67.7	63.1	63.1	63.2	63.2	62.0	59.6	62.2	55.7	-6.4 ss
Been Drunk [14,53]	43.9	44.7	44.4	40.4	47.4	43.1	47.6	46.8	45.3	42.4	43.6	39.9	40.1	40.2	42.6	38.4	40.8	34.8	37.8	34.8	27.6	-7.2 s
Flavored Alcoholic Beverages [15]	—	—	—	—	34.0	30.9	26.2	27.5	35.8	32.3	31.5	29.5	31.3	29.1	32.9	30.5	33.5	36.7	30.9	46.4	44.7	-1.7
Cigarettes [36,54]	28.2	25.7	26.7	22.5	24.3	23.8	19.2	19.9	17.9	17.9	16.4	15.2	12.5	14.0	12.9	11.3	8.9	8.0	6.8	7.9	4.1	-3.8 sss
Any Vaping [27,55]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	6.9	11.3	21.3	28.5	23.9	-4.6
Vaping Marijuana [27,31]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	10.9	13.5	12.4	-1.1
Vaping Nicotine [27,56]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	15.5	22.1	18.6	-3.5
Vaping Just Flavoring [27]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.3	4.8	5.4	5.8	+0.3
Large Cigars [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.4	4.9	4.4	1.7	3.7	3.6	1.8	-1.8
Flavored Little Cigars [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.8	5.6	5.6	4.9	5.6	4.2	2.4	-1.7
Regular Little Cigars [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.6	4.1	3.6	1.7	1.4	4.2	2.5	-1.6
Steroids [16]	*	0.3	*	0.1	*	*	*	0.1	*	0.2	*	0.2	*	*	*	0.3	*	0.3	*	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 9-7.

TABLE 9-4
Trends in 30-Day Prevalence of Daily [r] Use of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

(Years cont.)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Approximate Weighted N =	*1,040*	*1,130*	*1,150*	*1,170*	*1,110*	*1,080*	*1,190*	*1,220*	*1,310*	*1,300*	*1,400*	*1,410*	*1,490*	*1,490*	*1,410*	*1,450*	*1,450*	*1,480*	*1,440*	*1,440*
Marijuana	7.2	5.6	4.2	3.8	3.6	3.1	2.1	2.3	1.8	2.6	1.7	1.8	1.6	1.9	1.8	3.7	2.8	3.7	4.0	4.0
Cocaine [33]	0.2	*	0.3	0.1	0.4	0.1	0.1	0.1	0.1	*	*	*	*	*	0.1	*	*	*	*	*
Amphetamines [7]	0.5	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines, Adjusted [7,9]	—	—	0.3	0.2	0.2	*	0.1	0.1	*	*	*	0.1	*	0.1	0.1	0.1	*	0.2	0.1	0.1
Alcohol [13]																				
Daily	6.5	5.5	6.1	6.1	6.6	5.0	4.6	6.0	4.9	4.0	3.8	4.1	3.7	3.9	3.7	3.0	3.2	4.5	3.9	4.5
Been Drunk [14]	—	—	—	—	—	—	—	—	—	—	—	0.5	0.2	0.3	0.8	0.5	0.1	1.3	0.8	1.0
5+ Drinks in a Row in Last 2 Weeks	43.9	43.6	44.0	43.1	45.4	44.6	45.0	42.8	43.2	41.7	41.0	42.8	41.4	40.2	40.2	38.6	38.3	40.7	38.9	40.0
10+ Drinks in a Row in Last 2 Weeks [32]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15+ Drinks in a Row in Last 2 Weeks [15]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes																				
Daily	18.3	17.1	16.2	15.3	14.7	14.2	12.7	13.9	12.4	12.2	12.1	13.8	14.1	15.2	13.2	15.8	15.9	15.2	18.0	19.3
1/2 Pack+/Day	12.7	11.9	10.5	9.6	10.2	9.4	8.3	8.2	7.3	6.7	8.2	8.0	8.9	8.9	8.0	10.2	8.5	9.1	11.3	11.0

(Table continued on next page.)

TABLE 9-4 (cont.)
Trends in 30-Day Prevalence of Daily [18] Use of Various Types of Drugs among College Students 1 to 4 Years beyond High School

(Entries are percentages.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Approximate Weighted N =	*1,350*	*1,340*	*1,260*	*1,270*	*1,400*	*1,360*	*1,280*	*1,250*	*1,270*	*1,320*	*1,260*	*1,230*	*1,150*	*1,090*	*1,030*	*1,020*	*870*	*880*	*900*	*840*	*980*	
Marijuana	4.6	4.5	4.1	4.7	4.5	4.0	4.3	3.5	3.9	4.9	4.4	4.7	4.8	5.1	5.9	4.6	4.9	4.4	5.8	5.9	7.9	+2.0
Cocaine [33]	*	*	*	*	*	0.1	0.1	*	*	*	*	*	*	*	*	*	0.1	*	*	*	*	0.0
Amphetamines [7]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines, Adjusted [7,9]	0.1	0.2	0.1	0.3	0.2	0.2	0.4	0.1	0.2	0.1	*	0.2	0.1	*	0.2	0.1	*	0.1	0.0	0.3	*	-0.2
Alcohol [13]																						
Daily	3.6	4.7	5.0	4.3	3.7	4.6	4.8	4.3	4.0	4.3	3.6	3.8	3.9	3.6	4.3	3.1	4.3	2.2	2.3	2.0	2.4	+0.4
Been Drunk [14]	0.7	0.5	0.8	1.1	0.8	0.5	0.6	0.7	0.5	0.7	0.3	1.3	0.4	0.5	0.4	0.7	0.4	0.0	0.6	0.2	0.3	+0.1
5+ Drinks in a Row in Last 2 Weeks [57]	39.3	40.9	40.1	38.5	41.7	40.1	40.2	41.1	40.0	36.9	37.0	36.1	37.4	35.2	35.4	31.9	32.4	32.7	27.9	32.0	24.2	-7.8 sss
10+ Drinks in a Row in Last 2 Weeks [32]	—	—	—	—	—	12.5	13.7	13.9	13.0	15.8	11.6	14.6	13.7	10.4	13.5	11.8	10.8	12.7	9.0	10.3	11.9	+1.6
15+ Drinks in a Row in Last 2 Weeks [15]	—	—	—	—	—	5.1	4.2	5.1	4.7	6.4	4.0	5.4	4.7	3.6	5.1	1.2	2.1	1.3	3.4	0.7	3.8	+3.1
Cigarettes																						
Daily	17.8	15.0	15.9	13.8	13.8	12.4	9.2	9.3	9.2	8.0	7.6	7.3	5.2	5.6	5.2	4.2	2.6	2.0	1.9	2.5	1.4	-1.1
1/2 Pack+/Day	10.1	7.8	7.9	7.6	6.8	6.7	4.9	4.3	4.3	3.8	3.9	2.5	2.4	2.4	2.4	1.4	1.7	0.2	0.5	0.7	0.2	-0.4

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table 9-7.

TABLE 9-5
Trends in Having 10+ Drinks in a Row in the Last Two Weeks: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

Total	Time 1 2005-2009	Time 2 2010-2014	Time 3 2015-2020	Time 1 - Time 2 Difference	Time 2 - Time 3 Difference
Full-Time College	13.8	12.8	11.1	-0.9	-1.7
Weighted N	*1105*	*1085*	*2176*		
Noncollege	12.8	11.3	11.1	-1.5	-0.2
Weighted N	*636*	*685*	*1167*		
Males					
Full-Time College	15.3	20.2	18.6	+5.0	-1.6
Weighted N	*424*	*435*	*810*		
Noncollege	20.5	16.1	15.8	-4.4	-0.3
Weighted N	*260*	*313*	*481*		
Females					
Full-Time College	6.6	7.9	6.6	+1.3	-1.2
Weighted N	*681*	*650*	*1335*		
Noncollege	7.5	7.3	7.3	-0.2	0.0
Weighted N	*375*	*372*	*649*		

The Monitoring the Future study, the University of Michigan.

' * ' indicates a prevalence rate of less than 0.05%.

See footnotes following Table 9-7.

TABLE 9-6
Trends in Having 15+ Drinks in a Row in the Last Two Weeks: Full-Time College Students vs. Noncollege Youth among Respondents 1 to 4 Years beyond High School by Gender

(Entries are percentages.)

Total	Time 1 2005-2009	Time 2 2010-2014	Time 3 2015-2020	Time 1 - Time 2 Difference	Time 2 - Time 3 Difference
Full-Time College	5.1	4.5	2.1	-0.6	-2.5ss
Weighted N	*1105*	*938*	*913*		
Noncollege	5.7	5.0	3.4	-0.7	-1.6
Weighted N	*637*	*594*	*480*		
Males					
Full-Time College	11.1	7.7	4.1	-3.4	-3.6s
Weighted N	*425*	*379*	*322*		
Noncollege	10.7	8.5	4.6	-2.2	-3.9
Weighted N	*260*	*278*	*201*		
Females					
Full-Time College	1.4	2.4	0.9	+1.0	-1.5s
Weighted N	*680*	*560*	*579*		
Noncollege	2.3	1.9	2.2	-0.4	+0.3
Weighted N	*377*	*316*	*266*		

The Monitoring the Future study, the University of Michigan.

' * ' indicates a prevalence rate of less than 0.05%.

See footnotes following Table 9-7.

TABLE 9-7
Trends in Lifetime, Annual, and 30-Day Prevalence of an Illicit Drug Use Index [a] among College Students 1 to 4 Years beyond High School, by Gender

(Years cont.)

	1980 [i]	1981 [i]	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Percentage who used in lifetime																				
Any Illicit Drug																				
Total	69.4	66.8	64.6	66.9	62.7	65.2	61.8	60.0	58.4	55.6	54.0	50.4	48.8	45.9	45.5	45.5	47.4	49.0	52.9	53.2
Males	71.0	67.5	68.1	71.3	66.4	69.8	64.7	63.5	56.0	56.5	52.5	51.3	50.8	45.7	49.5	47.3	50.3	52.1	54.4	58.4
Females	67.5	66.3	61.5	63.0	59.2	61.6	59.4	57.4	60.2	54.9	55.1	49.7	47.1	46.0	42.6	44.3	45.6	46.7	52.0	49.6
Any Illicit Drug other than Marijuana																				
Total	42.2	41.3	39.6	41.7	38.6	40.0	37.5	35.7	33.4	30.5	28.4	25.8	26.1	24.3	22.0	24.5	22.7	24.4	24.8	25.5
Males	42.8	39.8	45.1	44.6	40.9	42.1	38.2	37.2	31.8	30.6	26.2	27.6	26.3	24.3	24.6	26.6	25.0	27.3	27.3	29.4
Females	41.6	42.6	34.7	39.2	36.4	38.3	37.0	34.6	34.6	30.4	30.1	24.3	26.1	24.3	20.1	22.9	21.2	22.2	23.3	22.8
Percentage who used in last 12 months																				
Any Illicit Drug																				
Total	56.2	55.0	49.5	49.8	45.1	46.3	45.0	40.1	37.4	36.7	33.3	29.2	30.6	30.6	31.4	33.5	34.2	34.1	37.8	36.9
Males	58.9	56.2	54.6	53.4	48.4	50.9	49.8	43.3	37.0	38.2	34.2	30.2	32.8	32.6	33.9	36.1	36.6	38.3	40.1	42.5
Females	53.3	54.0	44.9	46.7	41.9	42.7	41.1	37.7	37.6	35.4	32.5	28.4	28.7	29.1	29.5	31.7	32.7	31.1	36.4	33.2
Any Illicit Drug other than Marijuana																				
Total	32.3	31.7	29.9	29.9	27.2	26.7	25.0	21.3	19.2	16.4	15.2	13.2	13.1	12.5	12.2	15.9	12.8	15.8	14.0	15.4
Males	33.7	32.8	33.4	33.5	29.2	29.7	28.6	23.5	19.4	18.7	15.7	14.4	13.8	15.0	14.9	19.5	15.1	18.1	17.0	19.0
Females	31.1	30.8	26.9	26.8	25.2	24.4	22.1	19.6	19.0	14.6	14.8	12.1	12.6	10.5	10.2	13.3	11.3	14.1	12.1	12.8
Percentage who used in last 30 days																				
Any Illicit Drug																				
Total	38.4	37.6	31.3	29.3	27.0	26.1	25.9	22.4	18.5	18.2	15.2	15.2	16.1	15.1	16.0	19.1	17.6	19.2	19.7	21.6
Males	42.9	40.6	37.7	33.8	30.4	29.9	31.0	24.0	18.8	20.0	18.2	16.0	18.0	16.0	20.5	23.7	20.6	23.4	23.1	26.7
Females	34.0	34.8	25.6	25.5	23.7	23.2	21.7	21.1	18.3	16.7	12.7	14.6	14.5	14.5	12.7	15.7	15.8	16.2	17.6	18.1
Any Illicit Drug other than Marijuana																				
Total	20.7	18.6	17.1	13.9	13.8	11.8	11.6	8.8	8.5	6.9	4.4	4.3	4.6	5.4	4.6	6.3	4.5	6.8	6.1	6.4
Males	22.8	18.6	20.2	16.0	16.1	12.6	14.4	9.0	8.2	8.0	4.9	4.8	5.1	7.3	6.2	8.8	6.1	7.8	8.6	7.5
Females	18.7	18.5	14.2	12.1	11.5	11.2	9.3	8.5	8.8	6.0	4.0	3.9	4.2	3.8	3.4	4.5	3.4	6.1	4.6	5.6
Approximate Weighted N																				
All Respondents																				
Total	*1,040*	*1,130*	*1,150*	*1,170*	*1,110*	*1,080*	*1,190*	*1,220*	*1,310*	*1,300*	*1,400*	*1,410*	*1,490*	*1,490*	*1,410*	*1,450*	*1,450*	*1,480*	*1,440*	*1,440*
Males	*520*	*530*	*550*	*550*	*540*	*490*	*540*	*520*	*560*	*580*	*620*	*640*	*680*	*660*	*590*	*610*	*560*	*630*	*570*	*590*
Females	*520*	*600*	*610*	*620*	*570*	*600*	*650*	*700*	*750*	*720*	*780*	*770*	*810*	*830*	*820*	*840*	*890*	*860*	*880*	*850*

(Table continued on next page.)

TABLE 9-7 (cont.)
Trends in Lifetime, Annual, and 30-Day Prevalence of an Illicit Drug Use Index [a]
among College Students 1 to 4 Years beyond High School, by Gender

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
	Percentage who used in lifetime																					
Any Illicit Drug [33]																						
Total	53.7	53.6	51.8	53.9	52.2	52.3	50.6	50.5	49.5	51.4	49.1	49.2	50.5	53.3	52.4	53.4	54.4	55.5	55.7	58.9	56.3	-2.6
Males	54.4	53.9	54.3	54.1	54.9	54.2	55.0	52.3	50.7	53.2	53.5	52.3	52.4	53.7	54.5	55.1	55.1	57.8	57.7	62.0	58.3	-3.7
Females	53.2	53.5	50.2	53.7	50.6	51.3	47.8	49.4	48.8	50.2	46.2	47.3	49.2	53.0	50.9	52.5	52.5	54.3	53.8	57.6	54.9	-2.7
Any Illicit Drug other than Marijuana [33]																						
Total	25.8	26.3	26.9	27.6	28.0	26.5	26.3	25.3	22.6	25.6	24.8	24.3	23.8	28.3	29.0	26.4	26.5	26.3	27.3	26.2	22.6	-3.6
Males	28.9	27.0	30.4	27.6	31.1	29.0	29.2	26.5	25.2	29.9	27.8	27.8	26.0	30.4	29.8	31.0	31.0	27.0	32.5	31.5	31.1	-0.5
Females	23.5	25.9	24.6	27.5	26.2	25.1	24.4	24.6	21.0	22.7	22.8	22.1	22.2	26.8	28.3	23.8	23.8	26.1	24.2	23.6	17.3	-6.3 s
	Percentage who used in last 12 months																					
Any Illicit Drug [33]																						
Total	36.1	37.9	37.0	36.5	36.2	36.6	33.9	35.0	35.2	36.0	35.0	36.3	37.3	40.5	38.6	41.4	42.8	42.7	45.4	46.5	45.6	-0.9
Males	38.0	38.8	39.5	39.2	40.9	40.7	39.2	38.0	38.7	37.6	40.3	41.2	39.5	41.3	39.2	45.2	45.2	46.5	45.0	50.1	49.0	-1.1
Females	34.7	37.3	35.4	34.8	33.4	34.2	30.6	33.1	32.9	35.0	31.6	33.2	35.7	40.0	38.2	39.2	39.2	40.4	45.3	44.6	43.2	-1.4
Any Illicit Drug other than Marijuana [33]																						
Total	15.6	16.4	16.6	17.9	18.6	18.5	18.1	17.3	15.3	16.9	17.1	16.8	17.1	19.3	20.8	18.5	19.7	18.4	18.2	16.8	16.2	-0.5
Males	18.6	17.2	19.2	19.3	22.1	21.1	22.6	19.0	17.8	19.7	20.3	20.1	19.6	22.0	21.8	24.6	24.6	19.8	21.1	18.8	21.8	+3.1
Females	13.5	15.8	15.0	17.1	16.5	16.9	15.2	16.3	13.7	15.0	15.1	14.7	15.4	17.4	20.1	14.9	14.9	17.6	16.7	15.9	12.4	-3.5
	Percentage who used in last 30 days																					
Any Illicit Drug [33,50]																						
Total	21.5	21.9	21.5	21.4	21.2	19.5	19.2	19.3	18.9	20.7	19.2	21.4	22.3	22.8	22.7	23.4	24.4	23.6	27.0	29.7	25.2	-4.5 s
Males	24.0	25.0	25.1	22.8	26.1	22.9	23.4	22.7	23.1	23.4	25.9	27.0	27.0	27.8	25.9	27.4	27.4	26.7	26.1	33.3	30.2	-3.1
Females	19.6	19.8	19.3	20.5	18.4	17.5	16.6	17.1	16.2	19.0	15.0	17.9	19.1	19.3	20.2	21.1	21.1	21.9	28.1	27.9	21.9	-6.0 s
Any Illicit Drug other than Marijuana [33]																						
Total	6.9	7.5	7.8	8.2		8.2	8.2	8.1	7.3	8.4	8.1	8.2	7.8	8.8	10.0	9.2	8.4	7.0	7.9	7.6	6.0	-1.6
Males	8.2	9.0	8.4	8.1	11.3	10.3	10.3	9.5	9.6	9.0	10.4	10.6	9.2	11.2	12.4	12.9	12.9	7.4	9.2	9.1	8.8	-0.2
Females	6.0	6.4	7.4	8.3	7.8	7.0	6.9	7.2	5.8	8.0	6.7	6.7	6.8	7.2	8.3	7.1	7.1	6.8	7.2	7.0	4.2	-2.8
All Respondents																						
Total	*1,350*	*1,340*	*1,260*	*1,270*	*1,400*	*1,360*	*1,280*	*1,250*	*1,270*	*1,320*	*1,260*	*1,230*	*1,150*	*1,090*	*1,030*	*1,020*	*870*	*880*	*900*	*840*	*980*	
Males	*560*	*540*	*490*	*480*	*520*	*500*	*500*	*470*	*510*	*530*	*500*	*480*	*480*	*430*	*440*	*380*	*340*	*340*	*340*	*300*	*350*	
Females	*790*	*800*	*770*	*790*	*880*	*860*	*780*	*770*	*760*	*790*	*760*	*750*	*670*	*660*	*590*	*640*	*540*	*530*	*540*	*520*	*610*	

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the following page.

Footnotes for Tables 9-1 through 9-7

Notes. Level of significance of difference between the two most recent years: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. ' — ' indicates data not available. ' * ' indicates a prevalence rate of less than 0.05%.

[1]Any illicit drug includes use of marijuana, hallucinogens, cocaine, heroin or other narcotics, amphetamines, sedatives (barbiturates), methaqualone (until 1990), or tranquilizers not under a doctor's orders.

[2]This drug was asked about in four of the five questionnaire forms in 1980–1989, in five of the six forms in 1990–1998, and in three of the six forms beginning in 1999.

[3]In 2001 the question text was changed on three of the six questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Beginning in 2002 the remaining forms were changed to the new wording.

[4]This drug was asked about in two of the five questionnaire forms in 1989, in two of the six questionnaire forms in 1990–2001, in three of the six questionnaire forms in 2002–2015, and in four of six questionnaire forms beginning in 2015.

[5]This drug was asked about in one of the five questionnaire forms for annual use only in 1986, two of the five questionnaire forms in 1987–1989, in all six questionnaire forms in 1990–2001, and in five of the six questionnaire forms beginning in 2002..

[6]This drug was asked about in one of the five questionnaire forms in 1987–1989 and in four of six questionnaire forms beginning in 1990.

[7]Only drug use that was not under a doctor's orders is included here.

[8]In 2002 the question text was changed on three of the six questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced by Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; *N* is three sixths of *N* indicated. In 2003 the remaining forms were changed to the new wording. The data are based on all forms in 2003 and beyond.

[9]Revised questions about amphetamine use were introduced in 1982 to more completely exclude inappropriate reporting of nonprescription amphetamines. In 2013 the question wording was changed slightly in thee of the six questionnaire forms. 2013 data are based on the changed forms only; N is one half of N indicated.

[10]This drug was asked about in two of the six questionnaire forms. Questions about Rohypnol use were dropped from the questionnaires beginning in 2010.

[11]Sedatives, adjusted data are a combination of barbiturate and methaqualone data.

[12]In 2001 the question text was changed on three of the six questionnaire forms. Miltown was replaced with Xanax in the list of examples. Beginning in 2002 the remaining forms were changed to the new wording.

[13]In 1993 and 1994, the question text was changed slightly in three of the six questionnaire forms to indicate that a drink meant more than just a few sips. Because this revision resulted in rather little change in reported prevalence in the surveys of high school graduates, the data for all forms combined are used in order to provide the most reliable estimate of change. After 1994 the new question text was used in all six of the questionnaire forms.

[14]This drug was asked about in three of the six questionnaire forms.

[15]This drug was asked about in one of the six questionnaire forms.

[16]This drug was asked about in one of the five questionnaire forms in 1989 and in two of the six questionnaire forms beginning in 1990.

[17]This drug was asked about in two of the six questionnaire forms through 2010 and in three of the six questionnaire forms beginning in 2011.

[18]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes, measured as actual daily use, and 5+ drinks, measured as having five or more drinks in a row in the last two weeks.

[19]In 2012 the alcoholic beverage containing caffeine question text was changed to alcoholic beverage mixed with an energy drink. The data in 2011 and 2012 are not comparable due to this question change.

[20]In 2013 the question text was changed on all forms: Tuinal, Nembutal, and Seconal were replaced with Ambien, Lunesta, and Sonata. The data in 2012 and 2013 are not comparable due to this question change.

[21]This drug was asked about in two of the six questionnaire forms in 2011-2012; N is two sixths of N indicated. Data were based on three of the six questionaire forms beginning in 2013; N is three sixths of N indicated.

[22]This drug was asked about in one of the six questionnaire forms in 2009; N is one sixth of N indicated; Data were based on two of the six questionnaire forms in 2010-2011; N is two sixths of N indicated. Data were based on three of the six questionnaire forms beginning in 2012; N is three sixths of N indicated.

[23]This drug was asked about in two of the six questionnaire forms in 2002-2009; N is two sixths of N indicated; Data were based on three of the six questionnaire forms in 2010-2011; N is three sixths of N indicated. Data were based on two of the six questionnaire forms in 2012-2015; N is two sixths of N indicated.

[24]This drug was asked about in all six questionaire forms from 1980-2013. Data based on five of six forms beginning in 2014; N is five sixths of N indicated.

[25]This drug asked about in three of six questionnaire forms from 2011-2013; N is one half of N indicated. Beginning in 2014, data based on two of six questionnaire forms; N is two sixths of N indicated.

[26]In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form at each level. The 2013 and 2014 "Original wording" data reported here are for only the questionnaires using the original question wording. The 2014 and 2015 "Revised wording" data reported here are for only the questionnaires using the version which includes "Molly."

[27]In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. In 2017 and 2018, these questions were on two of the six forms (with N being one-third of sample indicated); in 2019, they were on four of the six forms (with N being two-thirds of sample indicated); and in 2020, they were on all six forms.

Footnotes for Tables 9-1 through 9-7 (continued)

[28]For the estimate of annual Any Vaping in 2018, there was a significant difference (p<.05) between the typical mail condition (26.9%) and new web-push condition (37.8%) of survey administration.

[29]For the estimate of annual Vaping Marijuana in 2018, there was a significant difference (p<.05) between the typical mail condition (15.2%) and new web-push condition (25.1%) of survey administration.

[30]For the estimate of annual Vaping Nicotine in 2018, there was a significant difference (p<.05) between the typical mail condition (19.0%) and new web-push condition (32.0%) of survey administration.

[31]For the estimate of 30-day Vaping Marijuana in 2018, there was a significant difference (p<.05) between the typical mail condition (7.3%) and new web-push condition (14.5%) of survey administration.

[32]This drug was asked about in one of the six questionnaire forms from 2005-2013. From 2014-2018, this drug was asked about in two of six questionnaire forms. Beginning in 2019, this drug was was asked about in five of six questionnaire forms.

[33]Prior to 2019, there were some minor errors in the estimates for a few substances, including this one. The given estimates are updated here (and in 2019) from some previous reports. These corrections do not alter conclusions from previous reports.

[34]For the estimate for lifetime Vaping Marijuana in 2019, there was a significant difference (p<.05) between the typical mail condition (24.8%) and new web-push condition (33.2%) of survey administration.

[35]For the estimate for annual OxyContin in 2019, there was a significant difference (p<.01) between the typical mail condition (0.3%) and new web-push condition (4.1%) of survey administration.

[36]For the estimate for 30-day Cigarettes in 2019, there was a significant difference (p<.01) between the typical mail condition (5.7%) and new web-push condition (9.5%) of survey administration.

[37]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+0.1, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[38]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-2.9, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[39]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (-2.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[40]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+11.5, p<.05).

[41]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+1.4, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[42]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+3.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[43]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+2.3, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[44]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+2.6, p<.05).

[45]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (+3.8, p<.05).

[46]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+0.7, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[47]As noted, the one-year difference is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was significant (-2.7, p<.05).

[48]As noted, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was not significant (+11.6, NS). This difference between the two estimates of one-year differences could be due to survey mode differences and/or sample size differences.

[49]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-15.9, p<.05).

[50]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-5.6, p<.05).

[51]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-2.4, p<.01).

[52]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-7.3, p<.01).

[53]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-8.9, p<.05).

[54]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-5.4, p<.001).

[55]As noted, the one-year difference is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was significant (-7.4, p<.05).

[56]As noted, the one-year difference is not significant in the total sample. When comparing 2019 and 2020 estimates among the web-push subsamples only, the difference was significant (-5.7, p<.05).

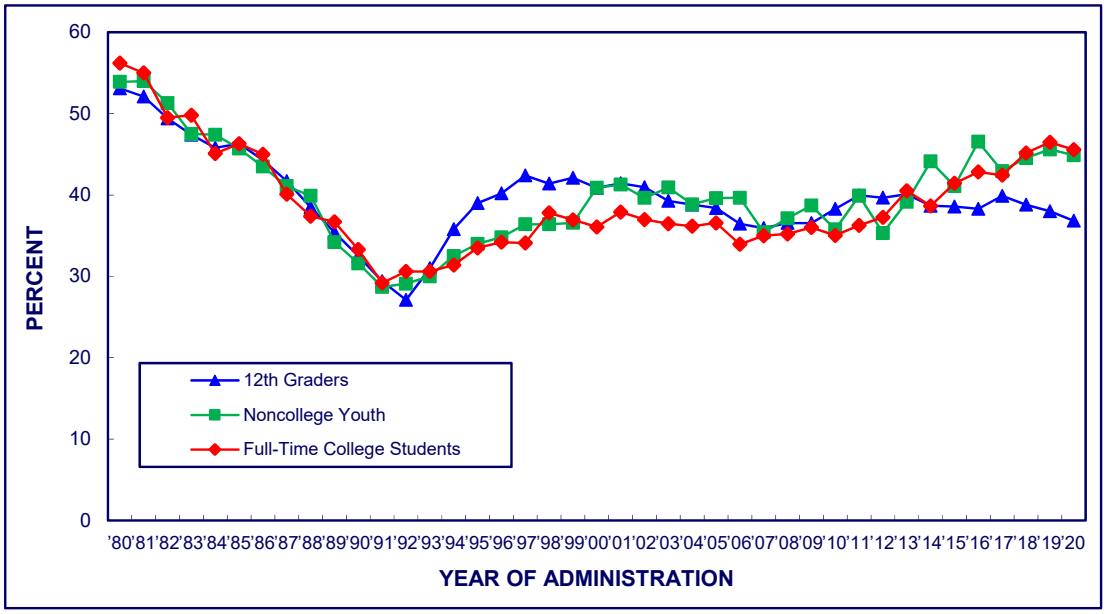
[57]As indicated, the one-year difference is significant in the total sample. When comparing 2019 and 2020 estimates among the web-push sub-samples only, the difference was also significant (-9.9, p<.001).

FIGURE 9-1

ANY ILLICIT DRUG

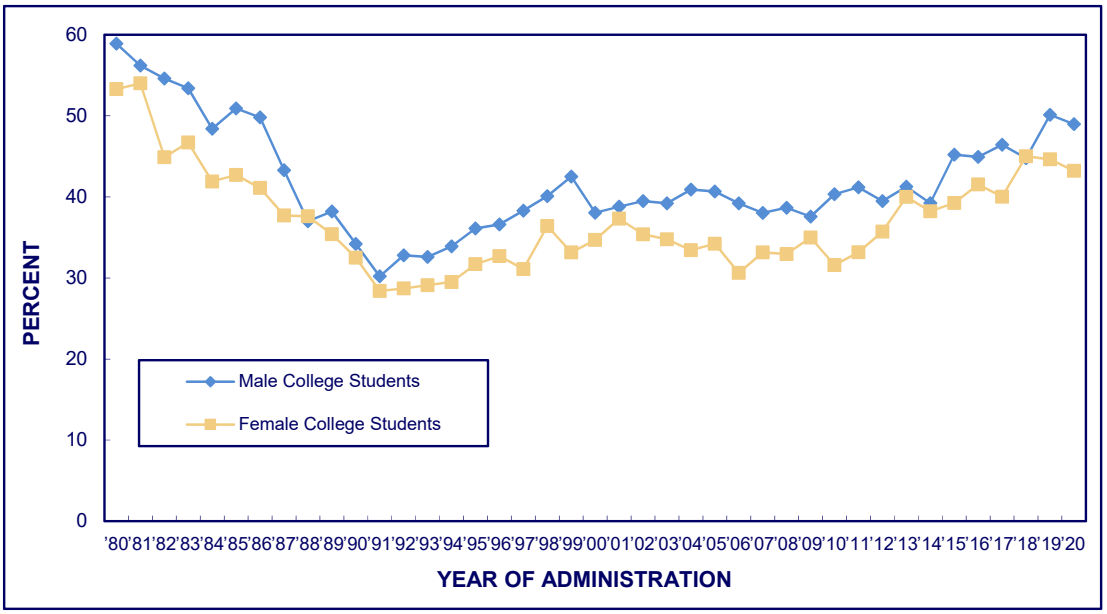
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



ANY ILLICIT DRUG

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

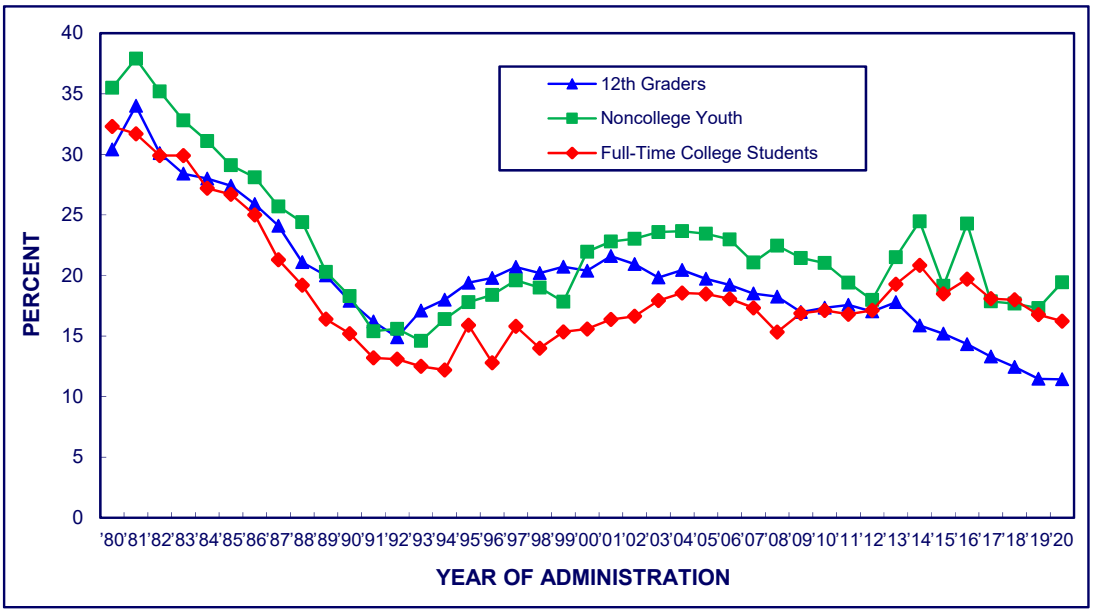
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-2

ANY ILLICIT DRUG OTHER THAN MARIJUANA

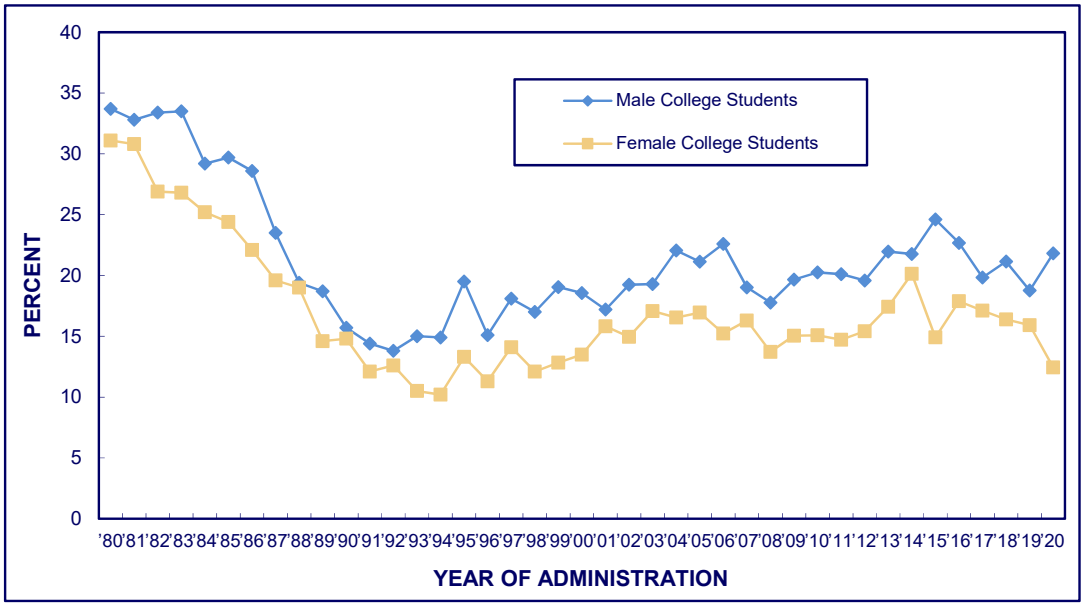
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



ANY ILLICIT DRUG OTHER THAN MARIJUANA

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

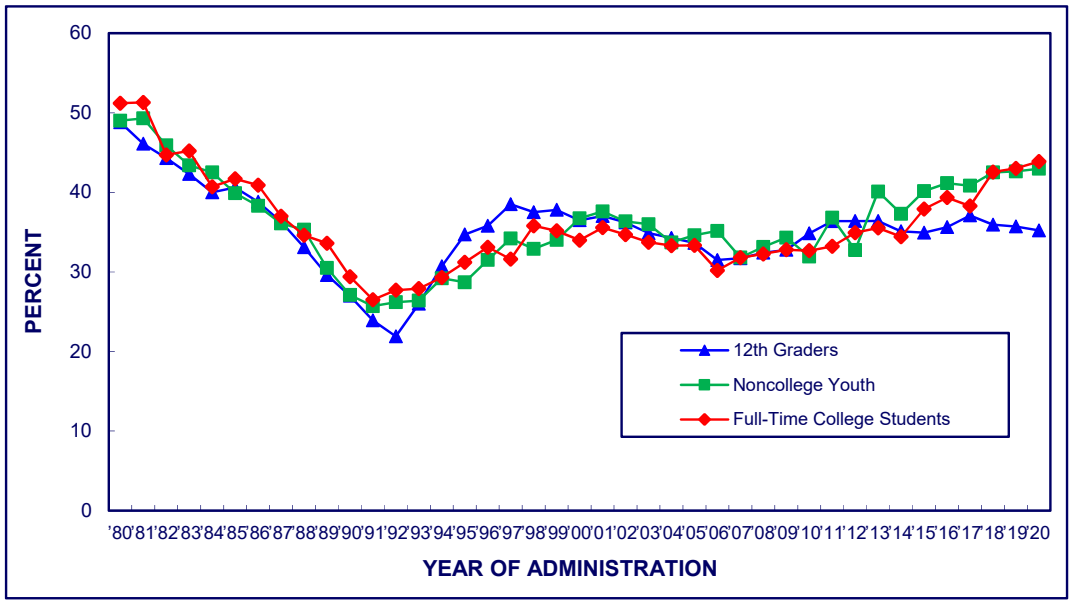
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-3a

MARIJUANA

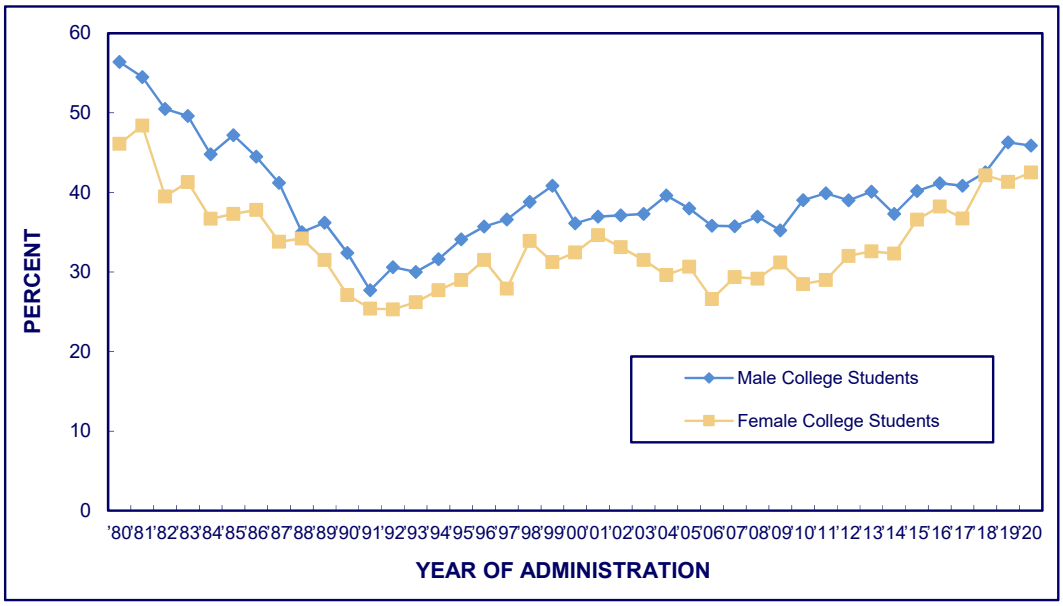
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



MARIJUANA

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

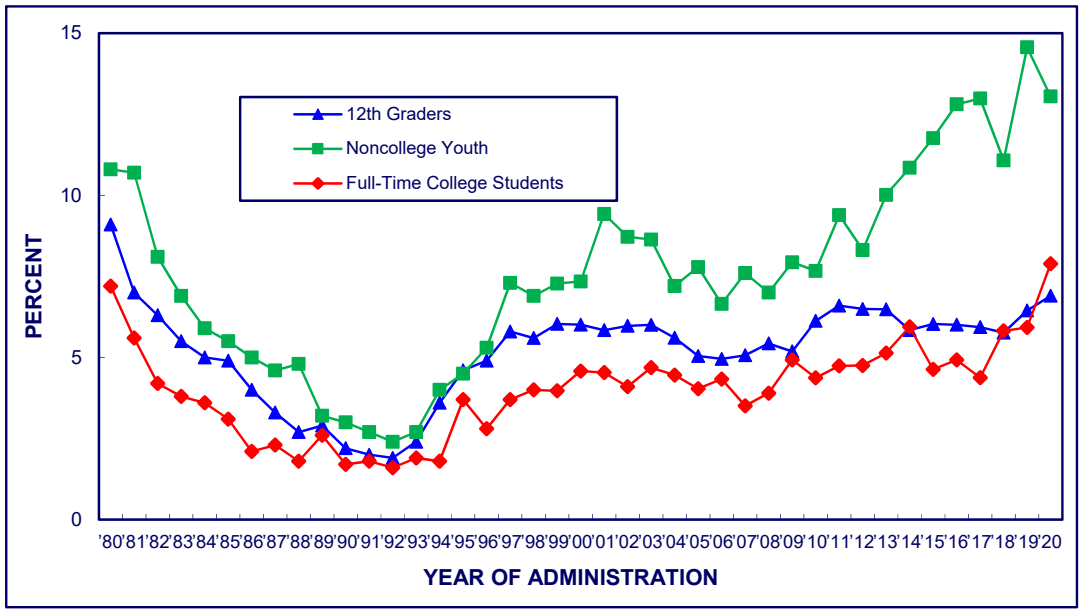
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-3b

MARIJUANA

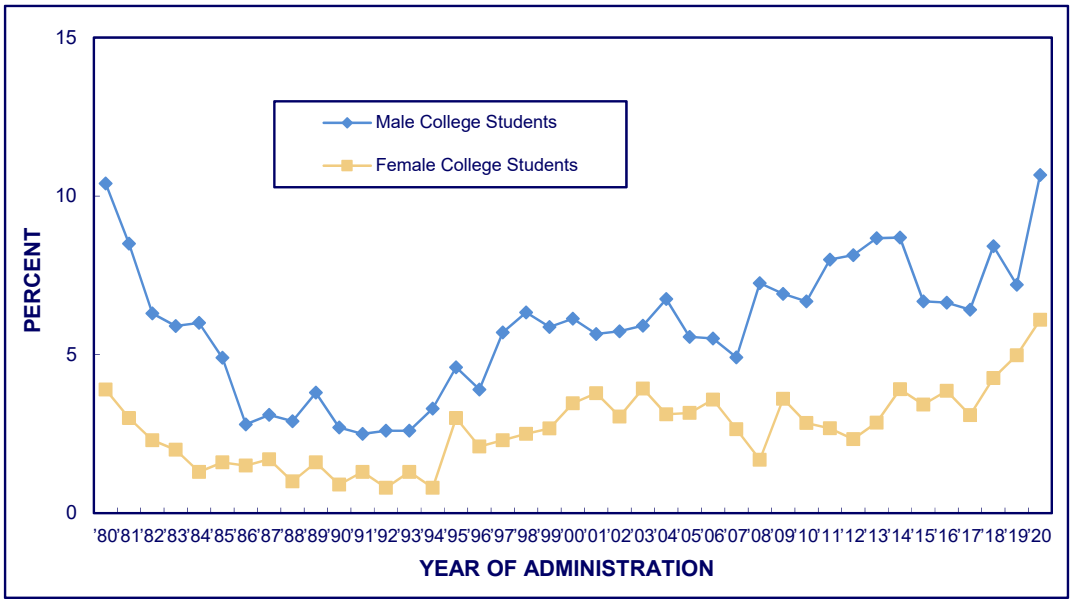
Trends in 30-Day Prevalence of Daily Use among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



MARIJUANA

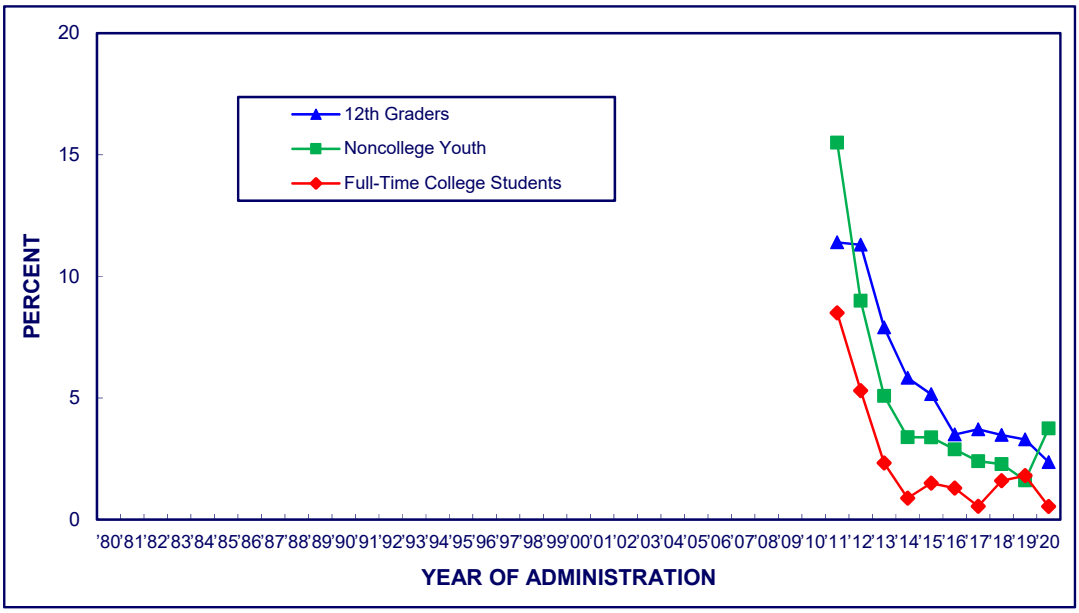
Trends in 30-Day Prevalence of Daily Use among Male vs. Female College Students



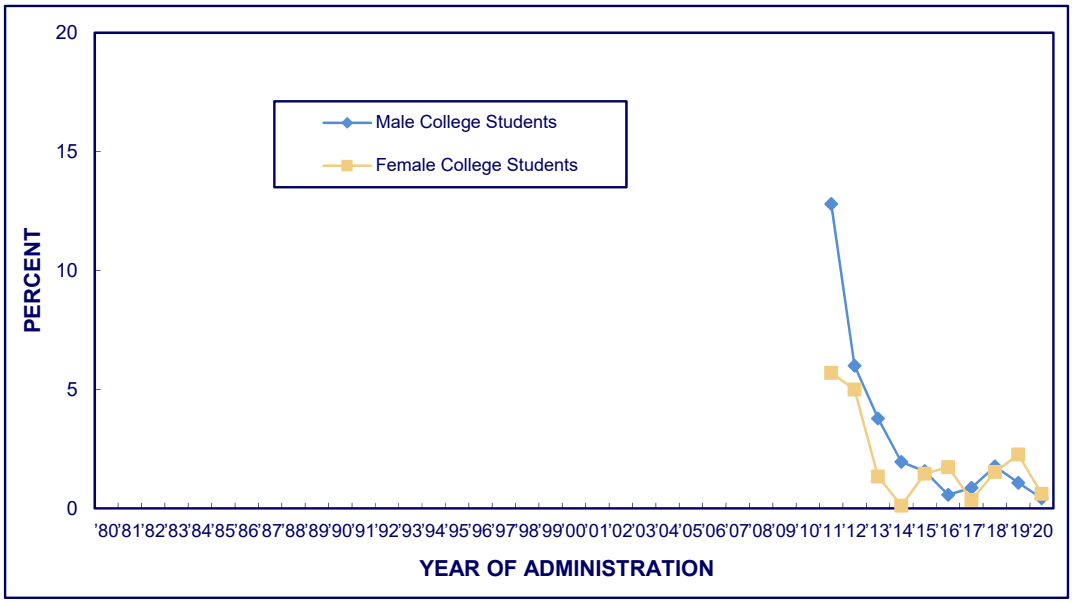
Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-4
SYNTHETIC MARIJUANA
Trends in Annual Use among College Students vs. Noncollege Youth 1 to 4 Years beyond High School
(Twelfth graders included for comparison.)



SYNTHETIC MARIJUANA
Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

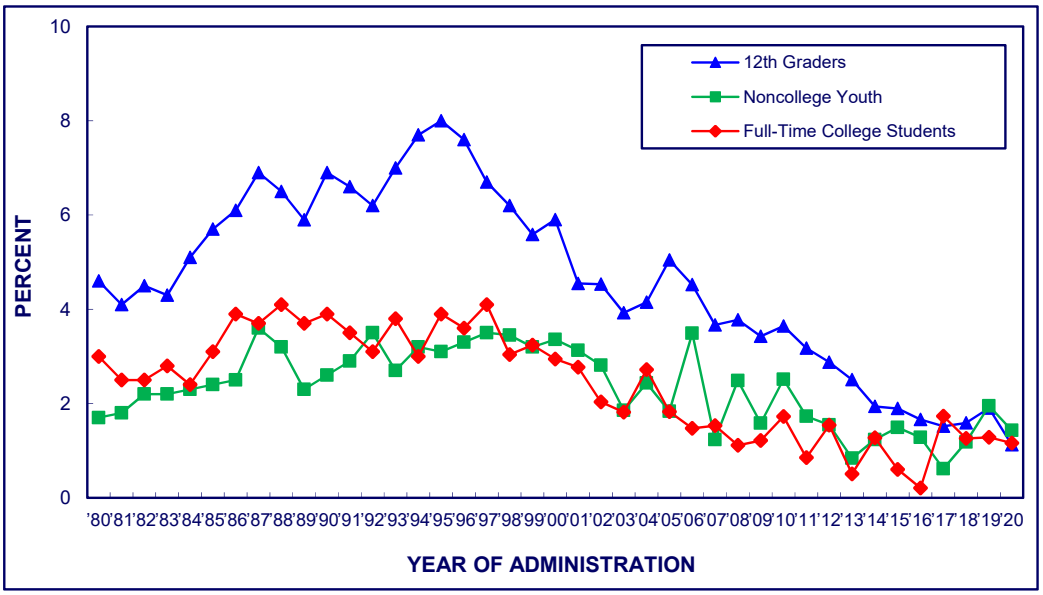
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-5

INHALANTS [1]

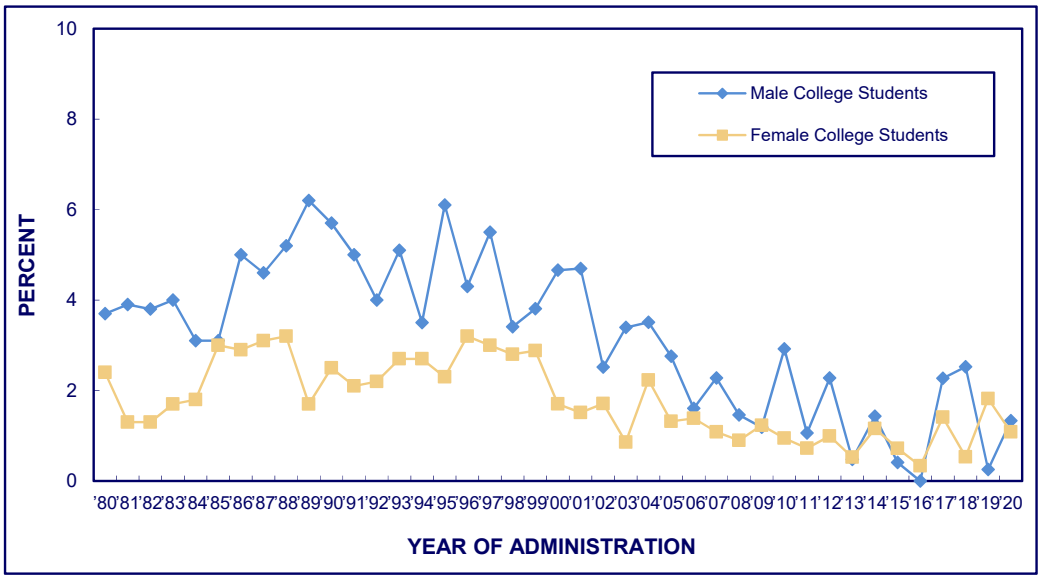
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



INHALANTS [1]

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

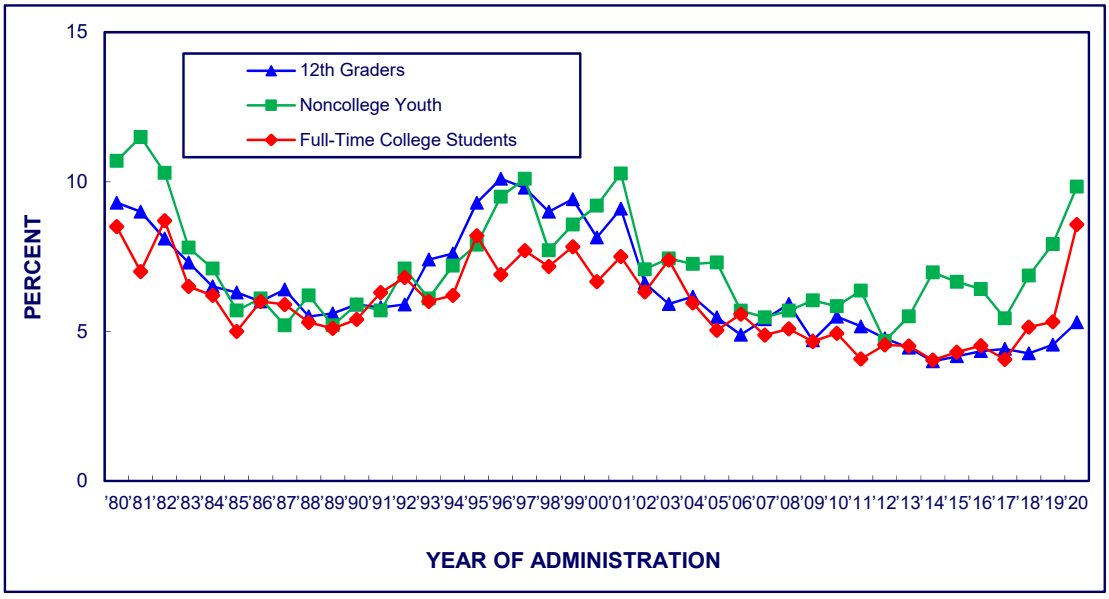
[1]Unadjusted for the possible underreporting of amyl and butyl nitrites.

FIGURE 9-6

HALLUCINOGENS [1]

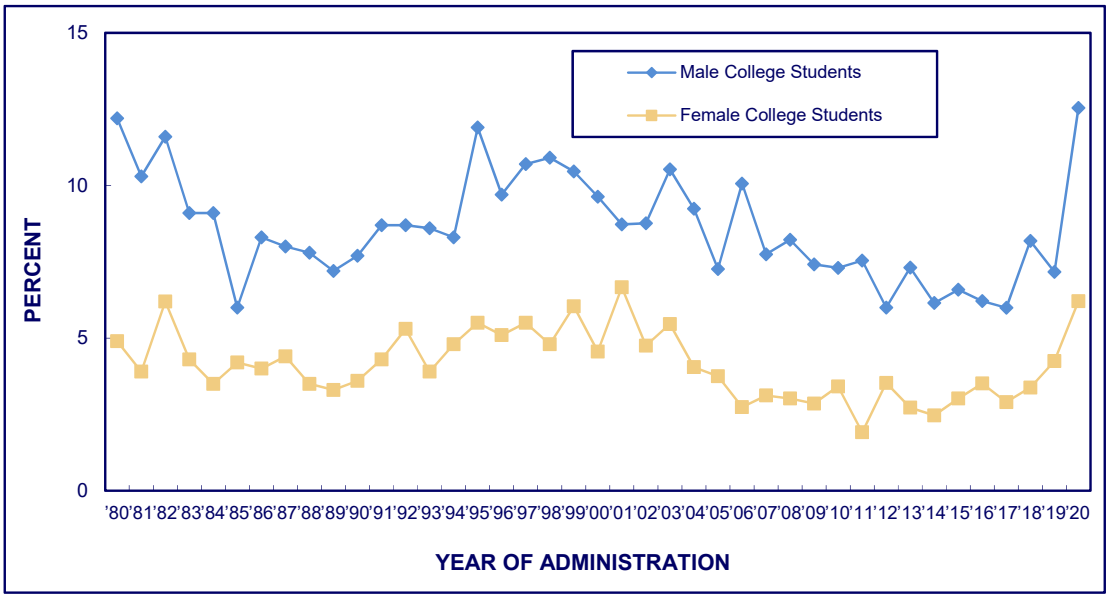
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



HALLUCINOGENS [1]

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

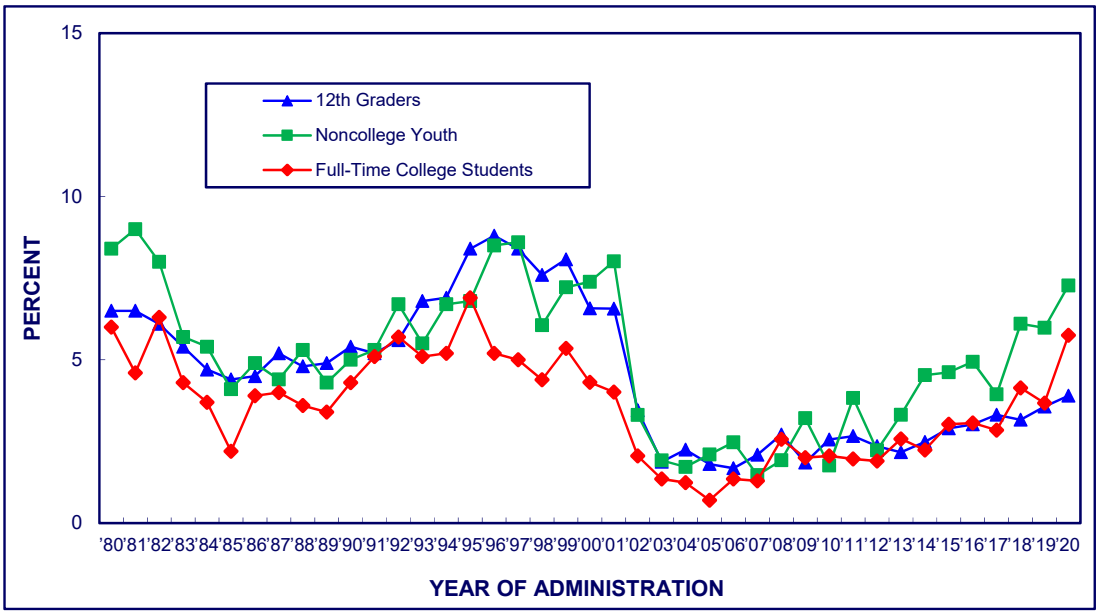
[1]Unadjusted for the possible underreporting of PCP.

FIGURE 9-7

LSD

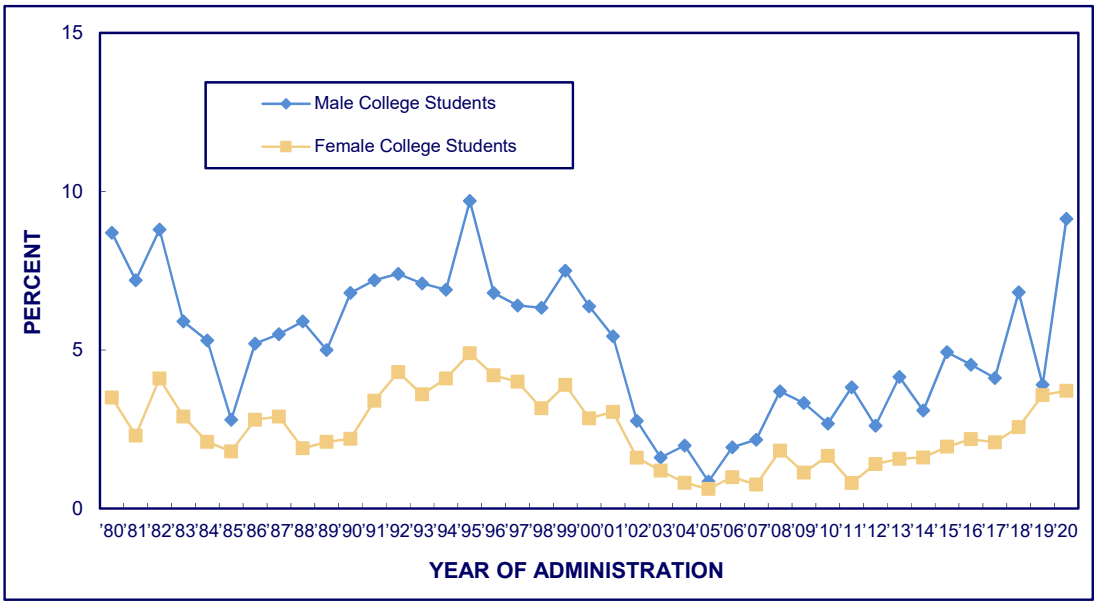
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



LSD

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

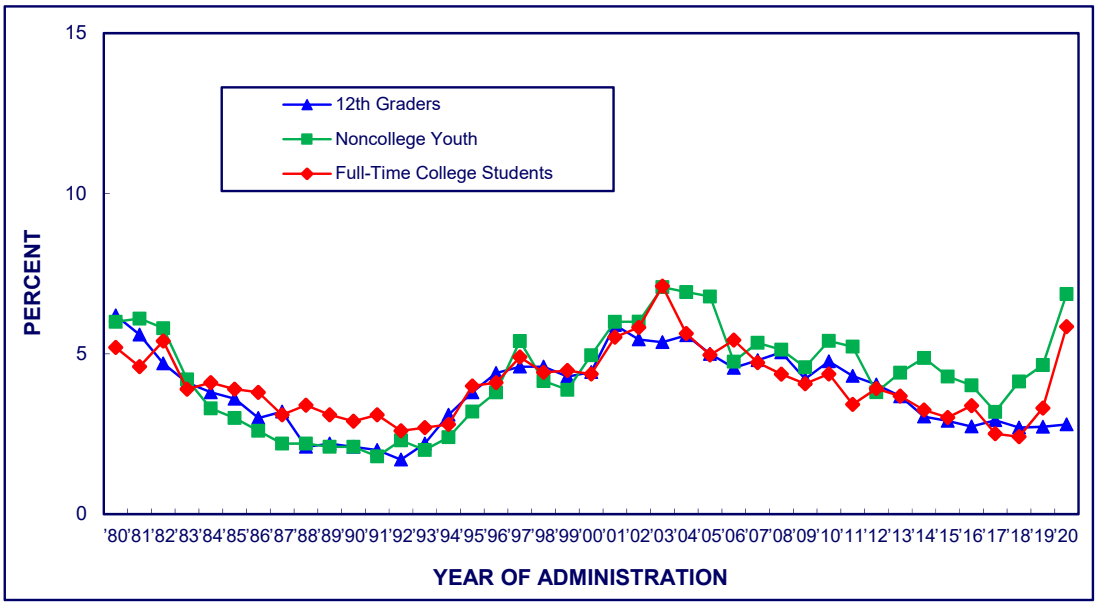
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-8

HALLUCINOGENS OTHER THAN LSD

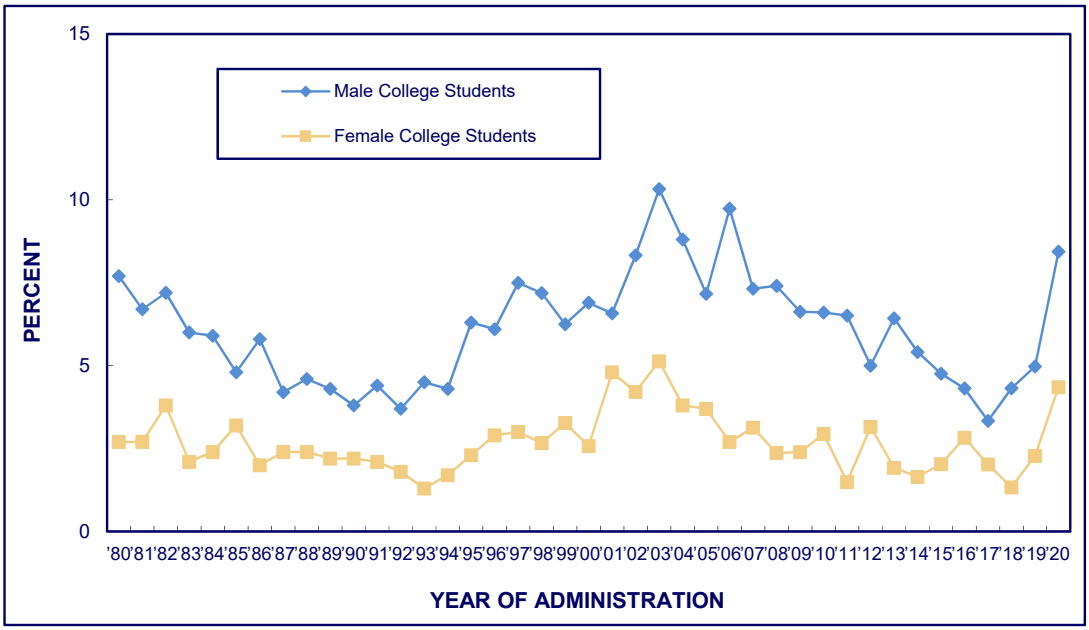
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



HALLUCINOGENS OTHER THAN LSD

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

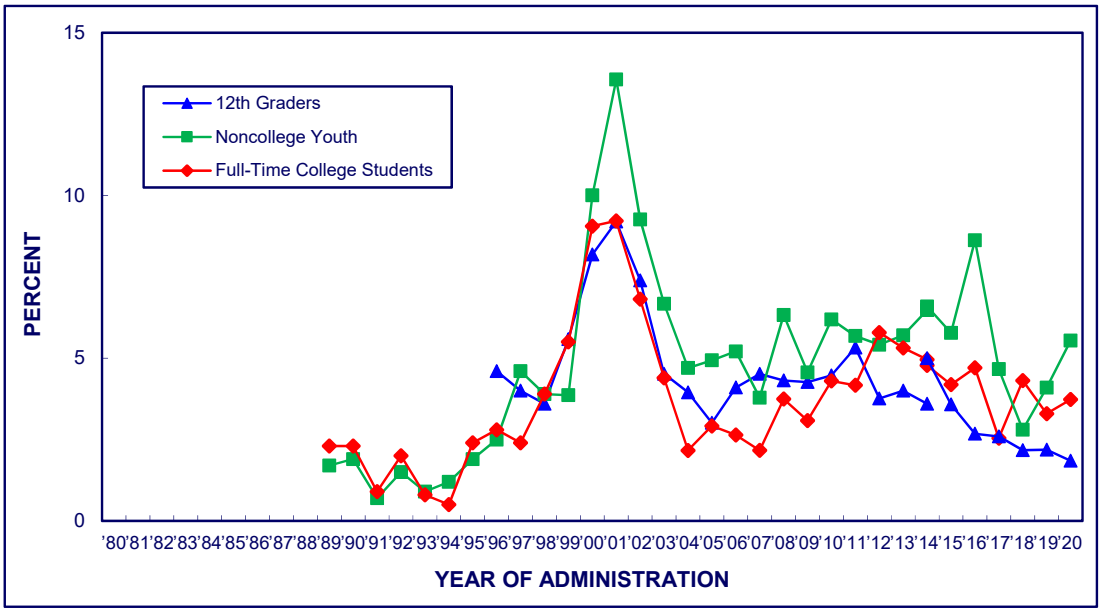
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-9

MDMA (Ecstasy, Molly) [1]

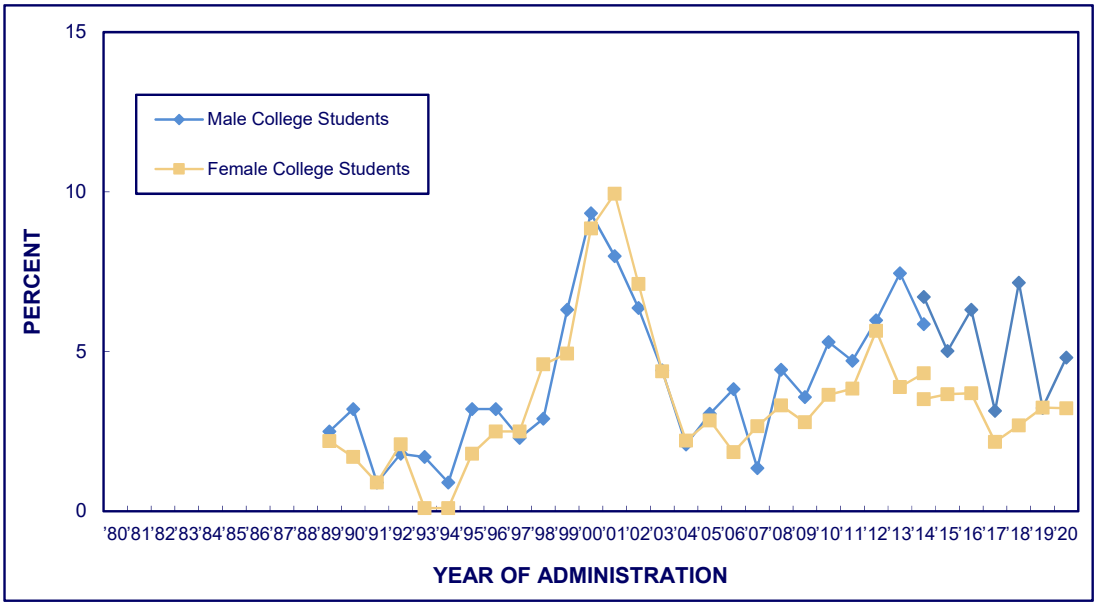
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



MDMA (Ecstasy, Molly) [1]

Trends in Annual Prevalence among Male vs. Female College Students



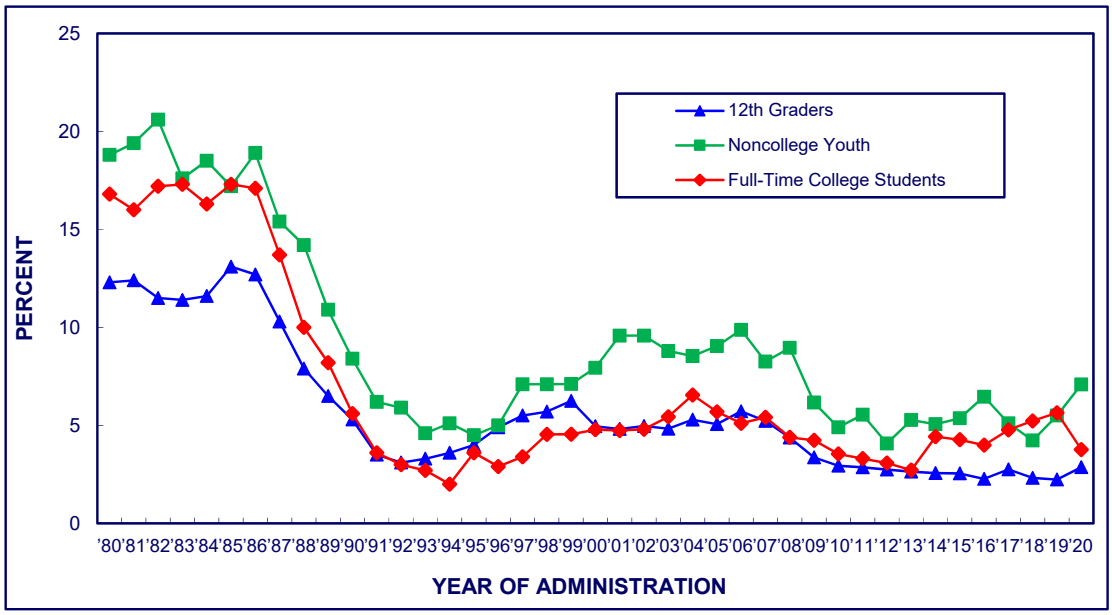
Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

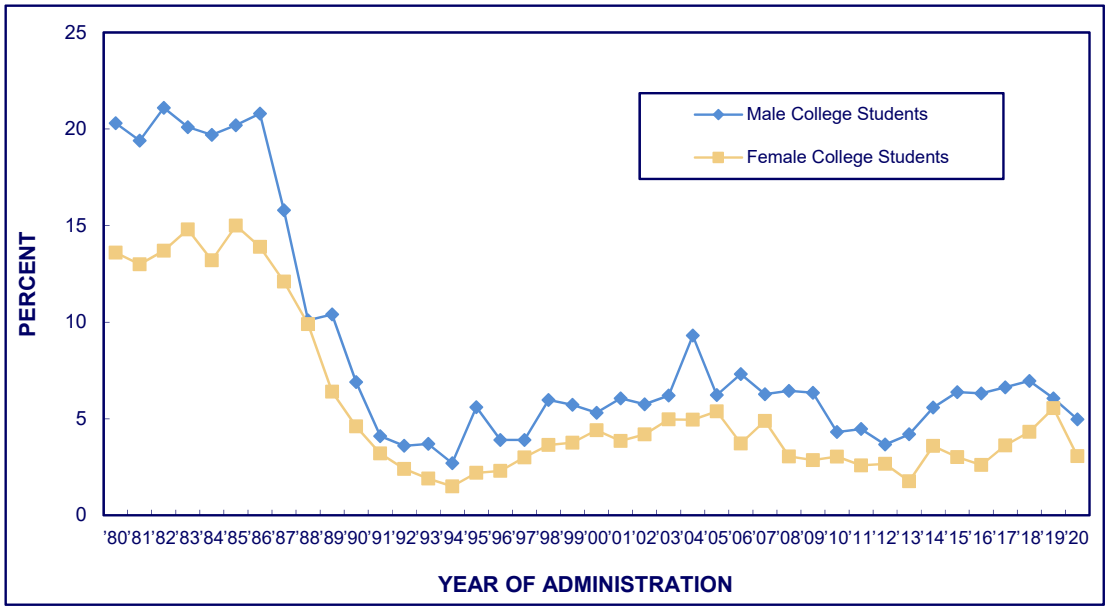
[1]In 2014, a version of the question was added to an additional form that included "molly" in the description. In 2015, the remaining forms were changed to this updated wording. Data for both versions of the question are included here.

FIGURE 9-10
COCAINE
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



COCAINE
Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

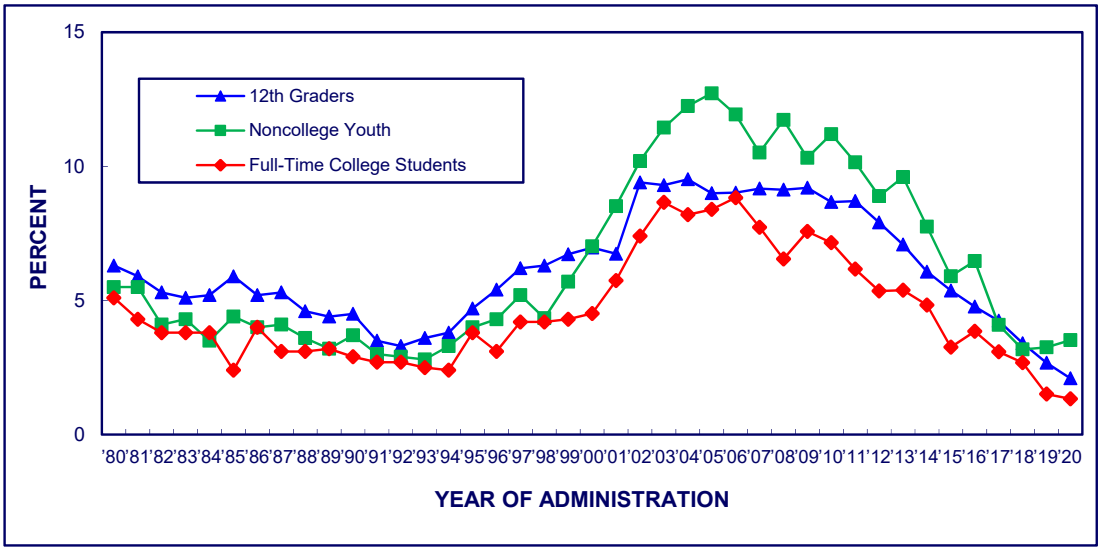
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-11a

NARCOTICS OTHER THAN HEROIN [1]

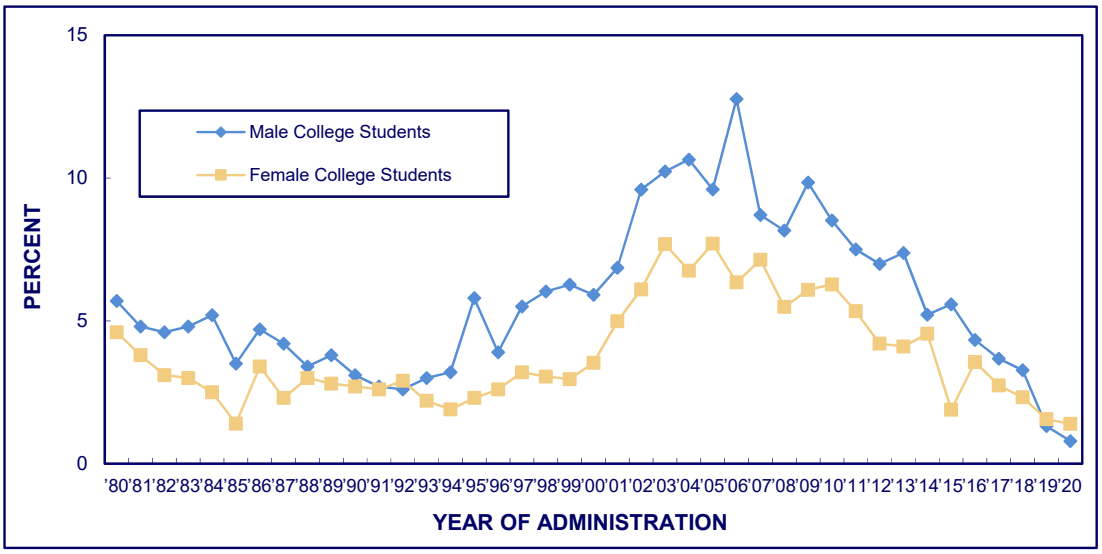
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



NARCOTICS OTHER THAN HEROIN [1]

Trends in Annual Prevalence among Male vs. Female College Students



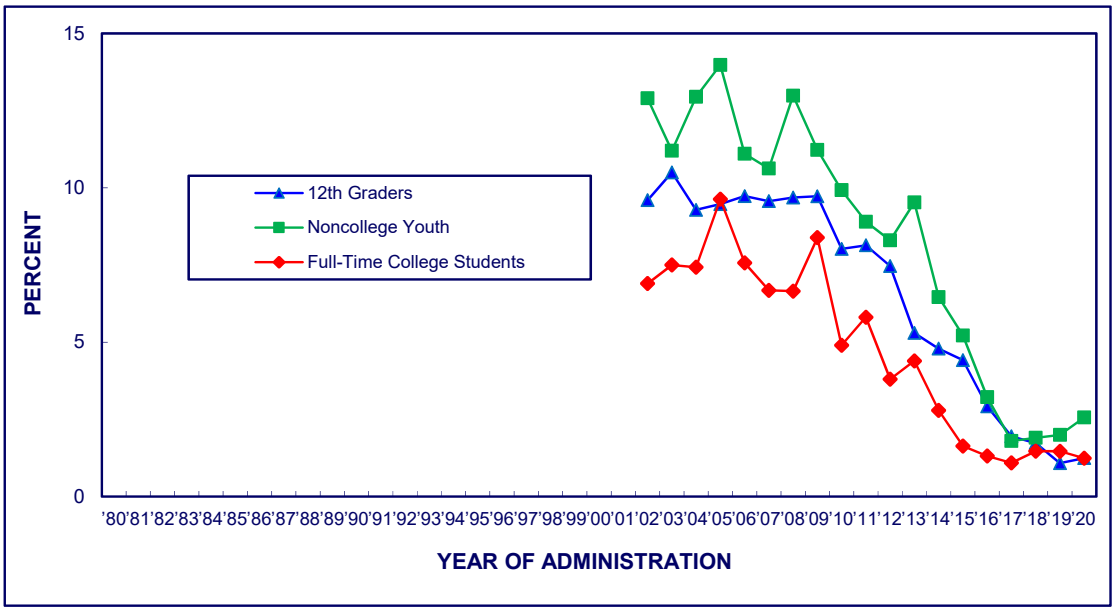
Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

[1]In 2002 the question text was changed on half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced by Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only. In 2003 the remaining forms were changed to the new wording.

FIGURE 9-11b
VICODIN
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)

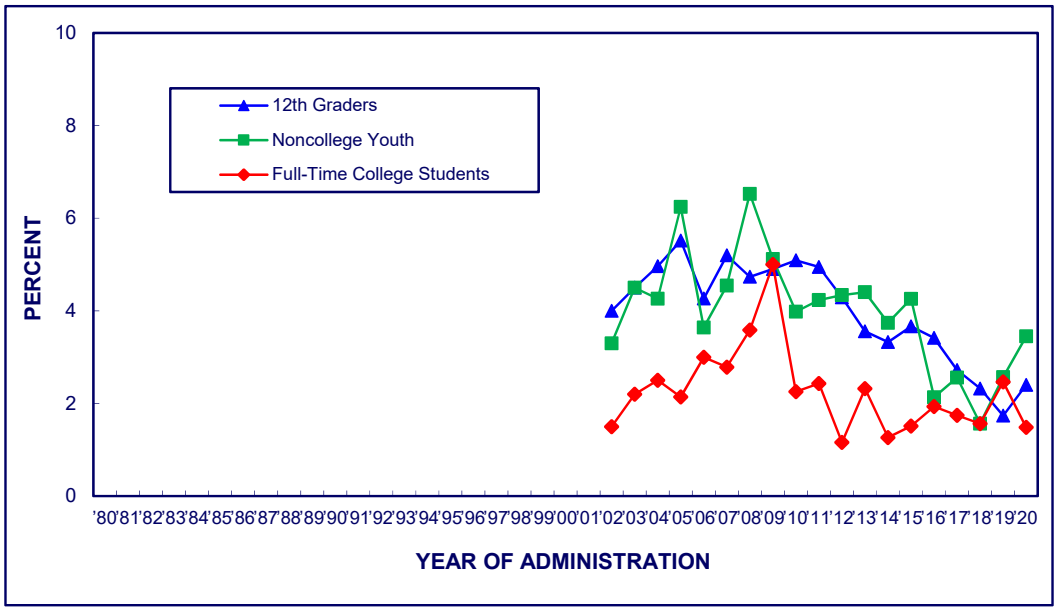


Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-11c
OXYCONTIN
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)

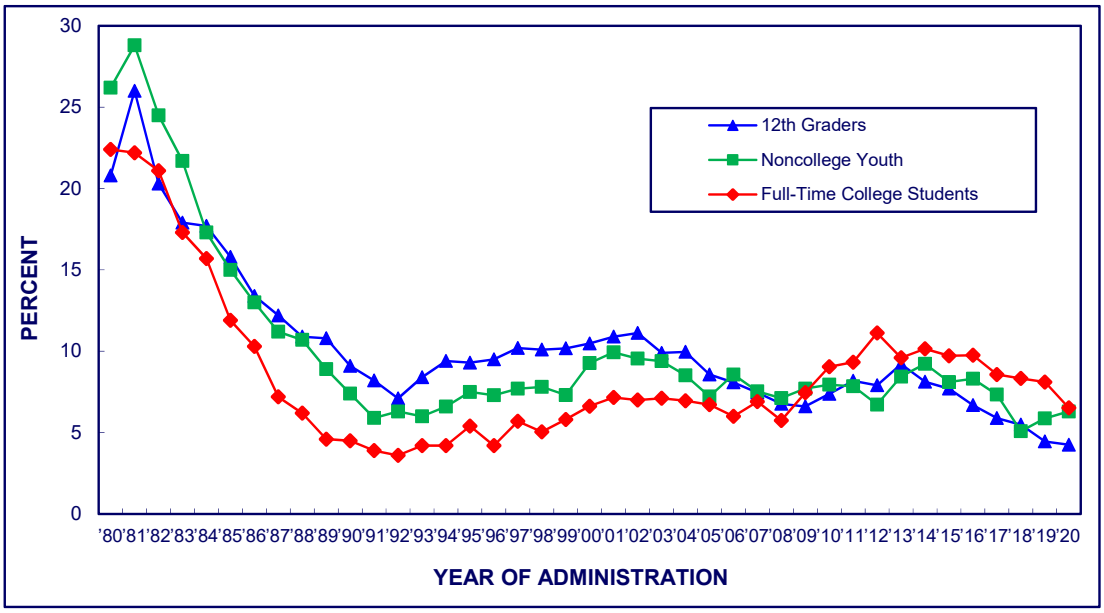


Source. The Monitoring the Future study, the University of Michigan.

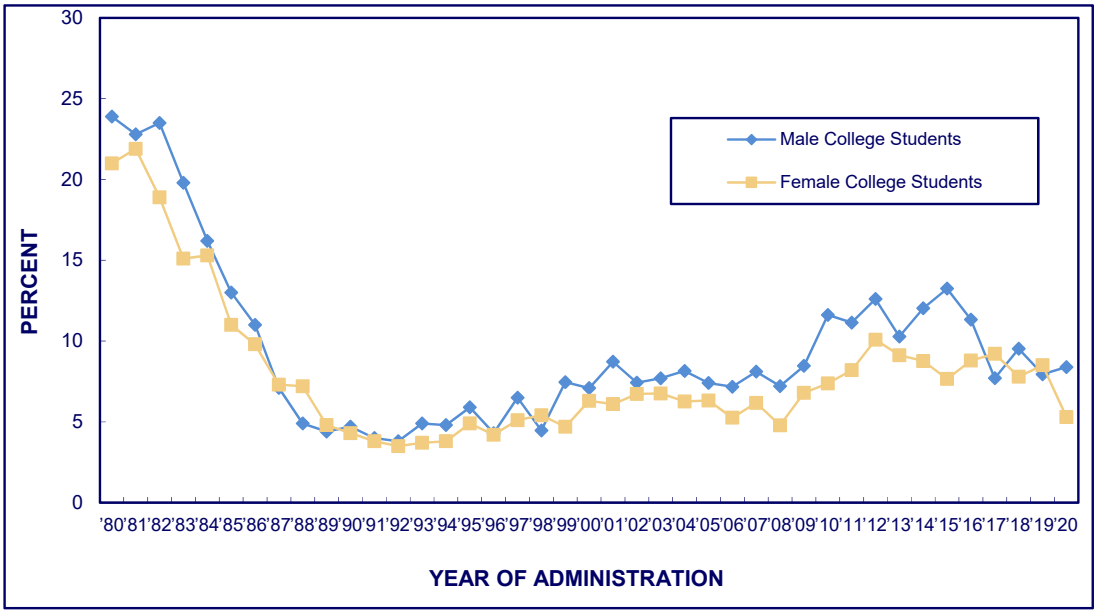
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-12
AMPHETAMINES
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



AMPHETAMINES
Trends in Annual Prevalence among Male vs. Female College Students

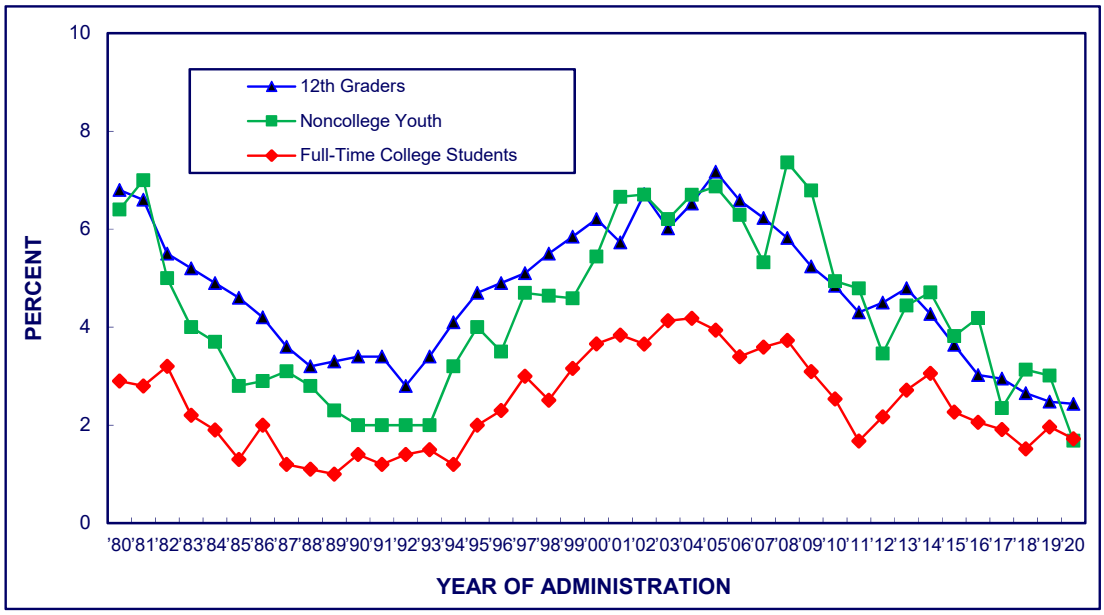


Source. The Monitoring the Future study, the University of Michigan.

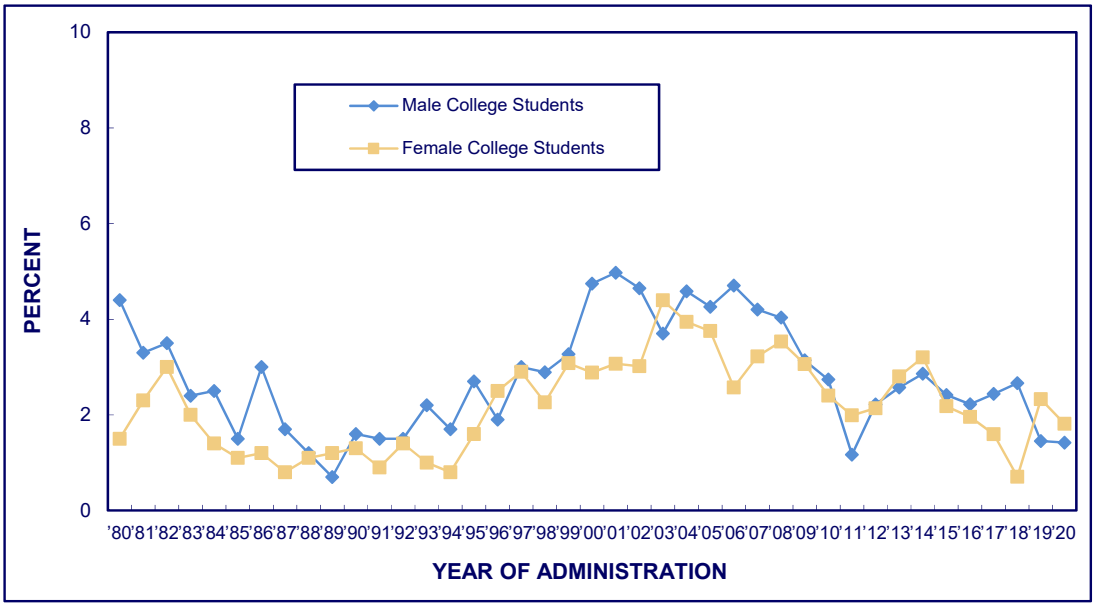
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-13
SEDATIVES (BARBITURATES)
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



SEDATIVES (BARBITURATES)
Trends in Annual Prevalence among Male vs. Female College Students

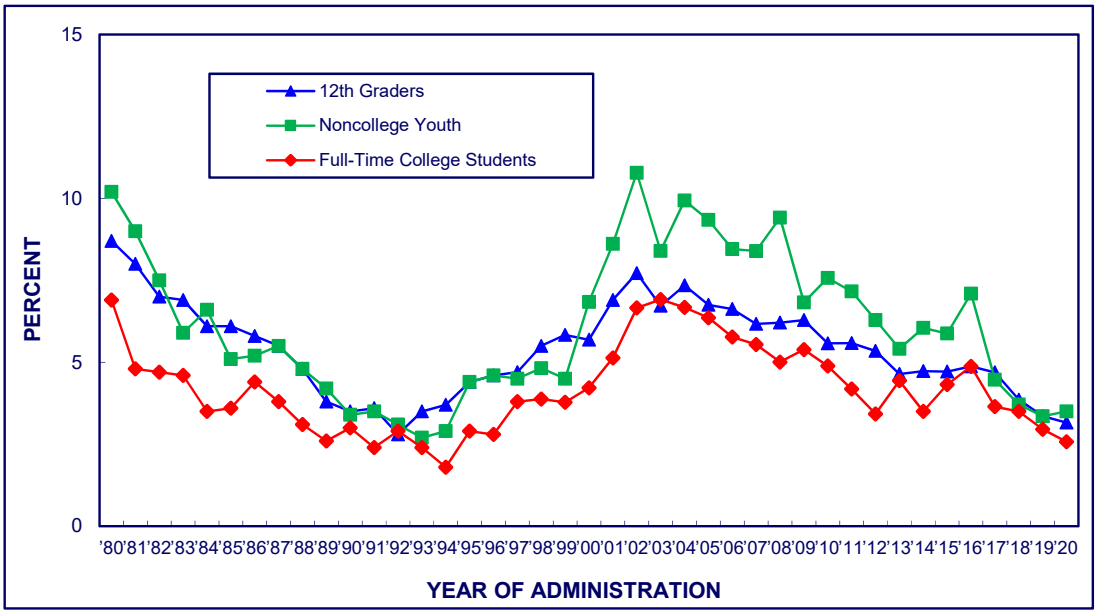


Source. The Monitoring the Future study, the University of Michigan.

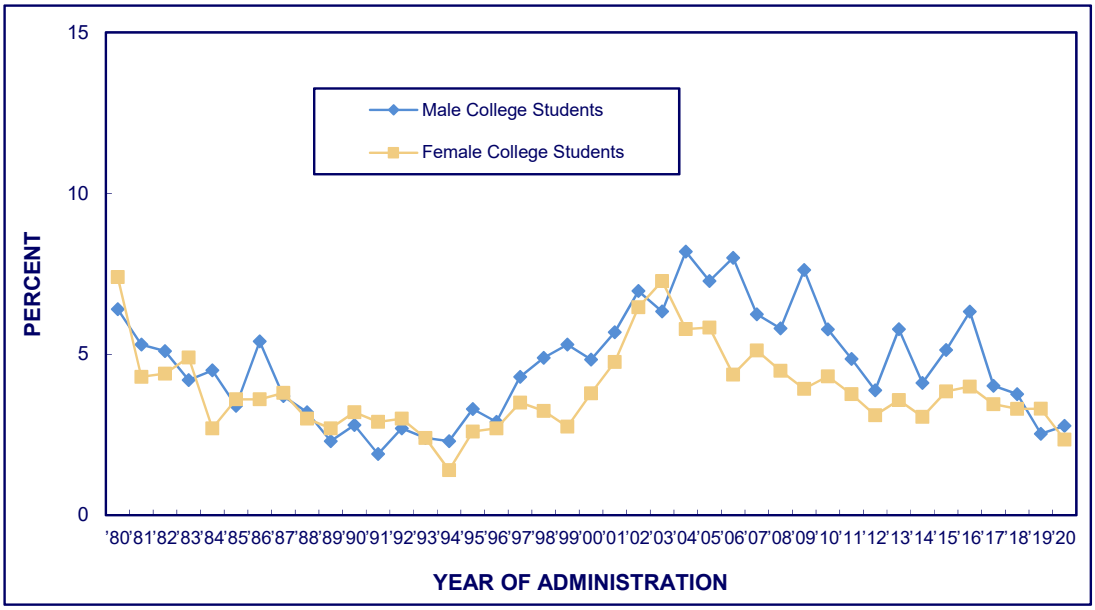
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-14
TRANQUILIZERS
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



TRANQUILIZERS
Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

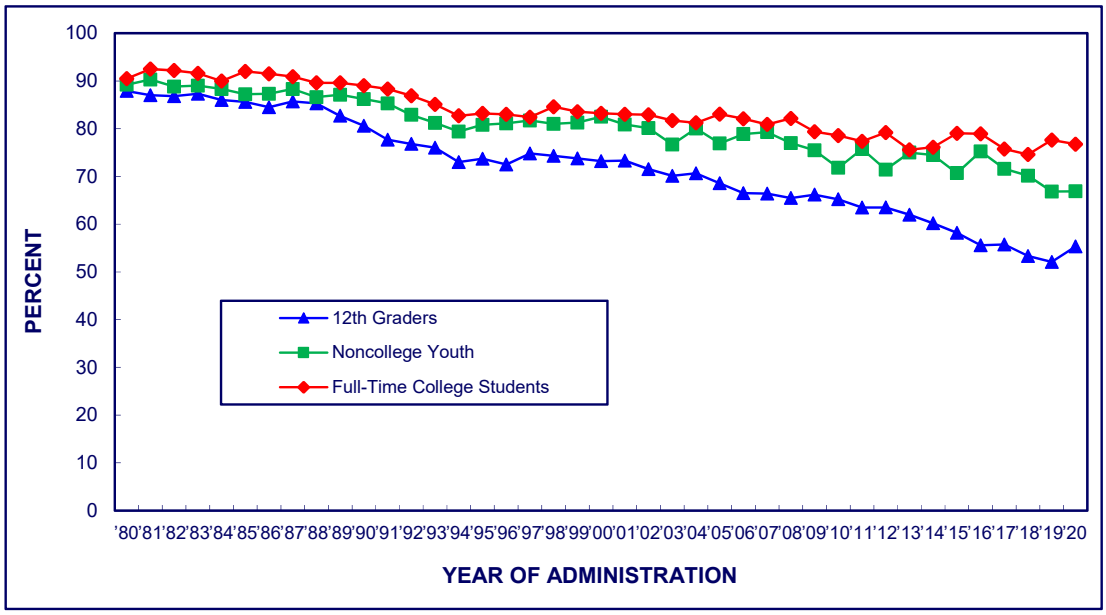
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-15a

ALCOHOL

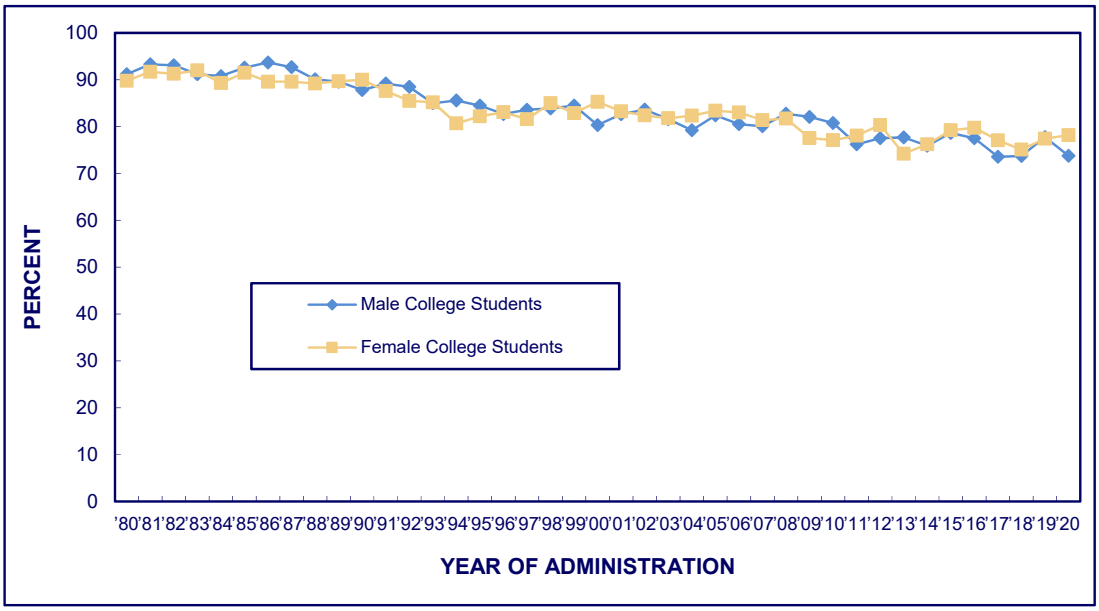
Trends in Annual Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



ALCOHOL

Trends in Annual Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

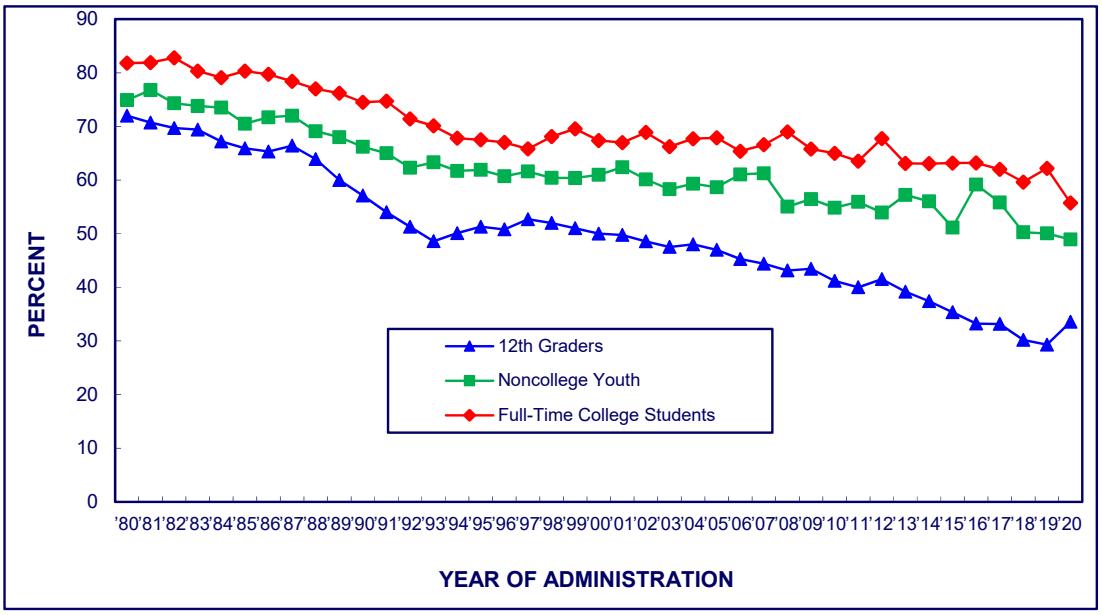
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-15b

ALCOHOL

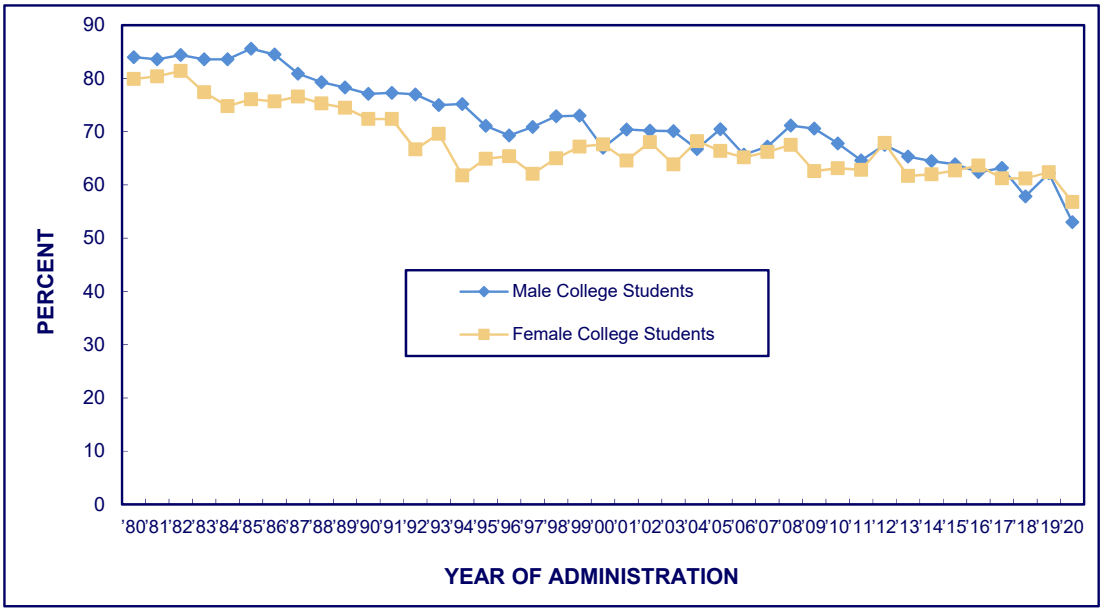
Trends in 30-Day Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



ALCOHOL

Trends in 30-Day Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

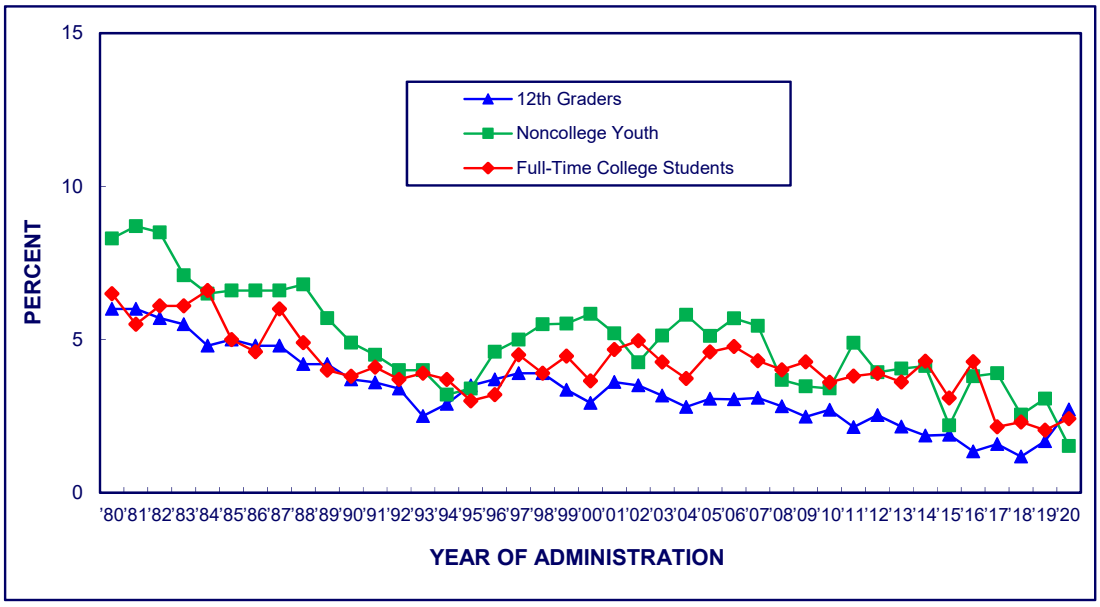
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-15c

ALCOHOL

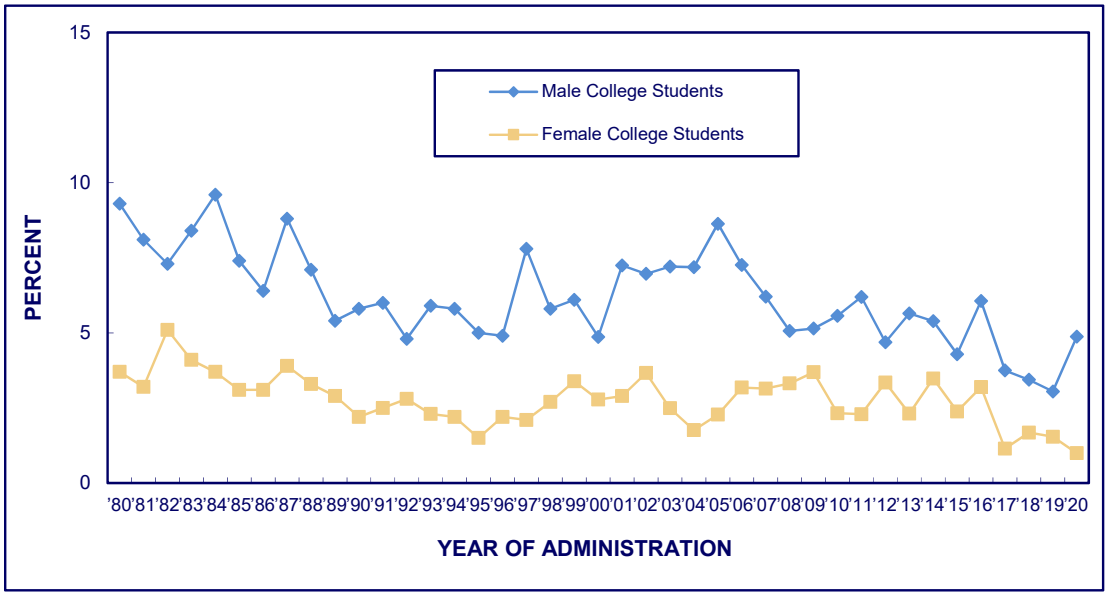
Trends in 30-Day Prevalence of Daily Use among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



ALCOHOL

Trends in 30-Day Prevalence of Daily Use among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

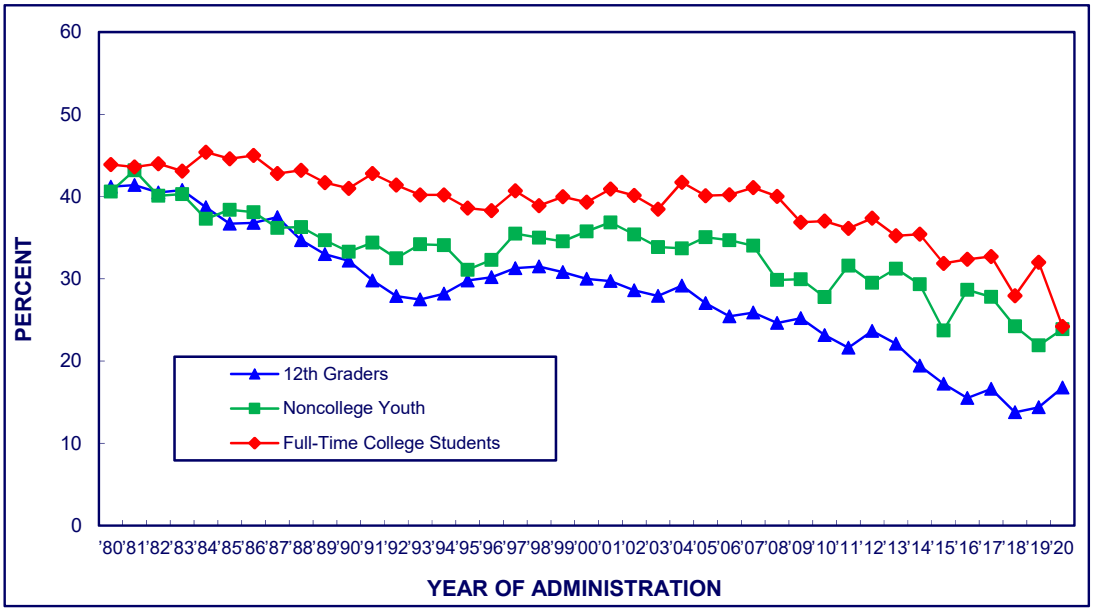
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-15d

ALCOHOL

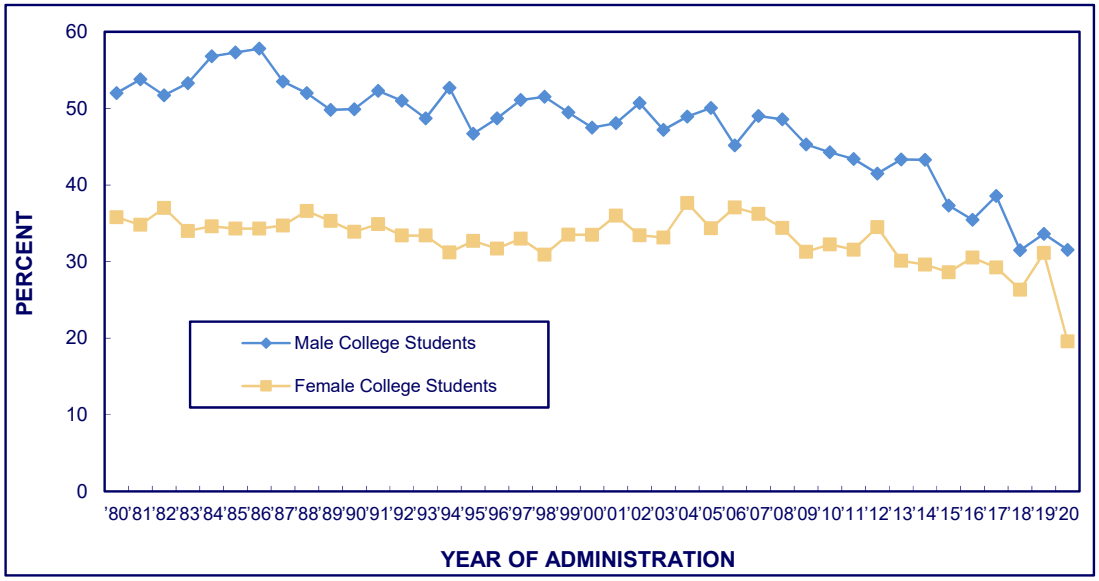
Trends in 2-Week Prevalence of 5 or More Drinks in a Row among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



ALCOHOL

Trends in 2-Week Prevalence of 5 or More Drinks in a Row among Male vs. Female College Students

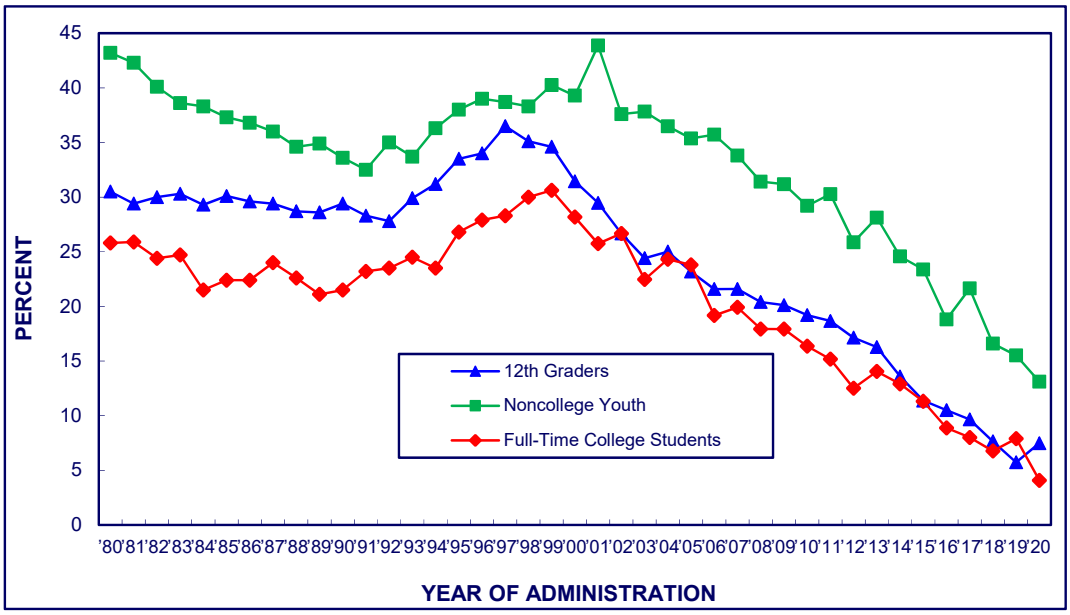


Source. The Monitoring the Future study, the University of Michigan.

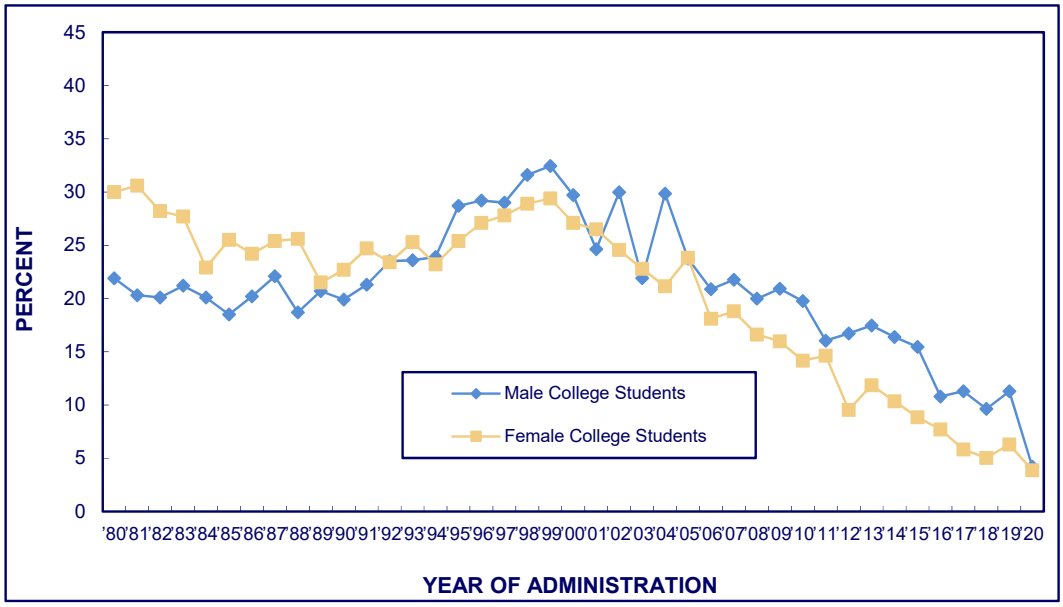
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-16a
CIGARETTES
Trends in 30-Day Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



CIGARETTES
Trends in 30-Day Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

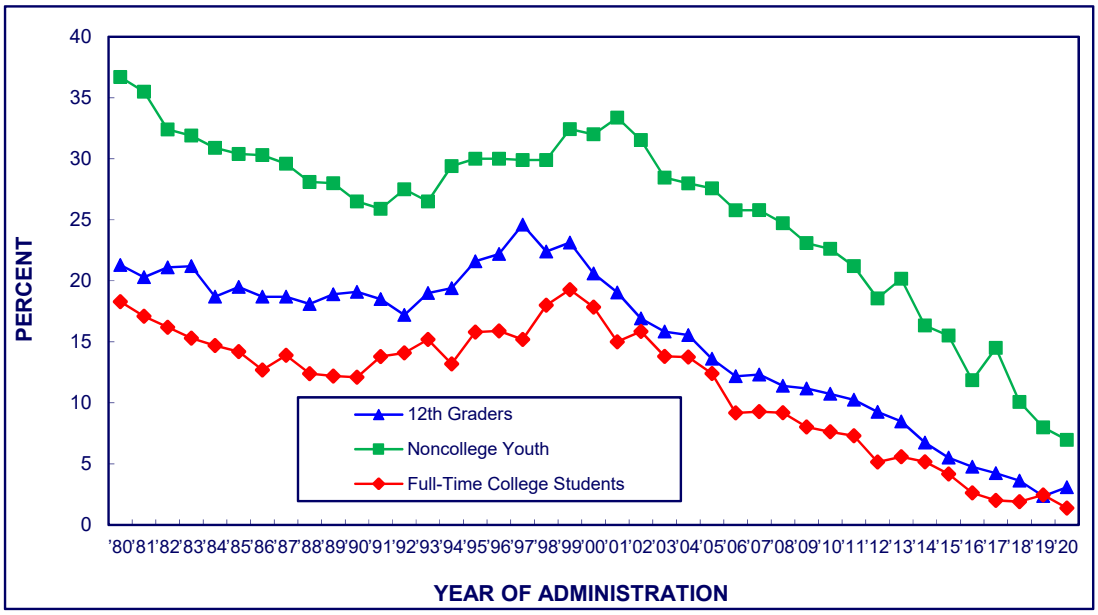
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-16b

CIGARETTES

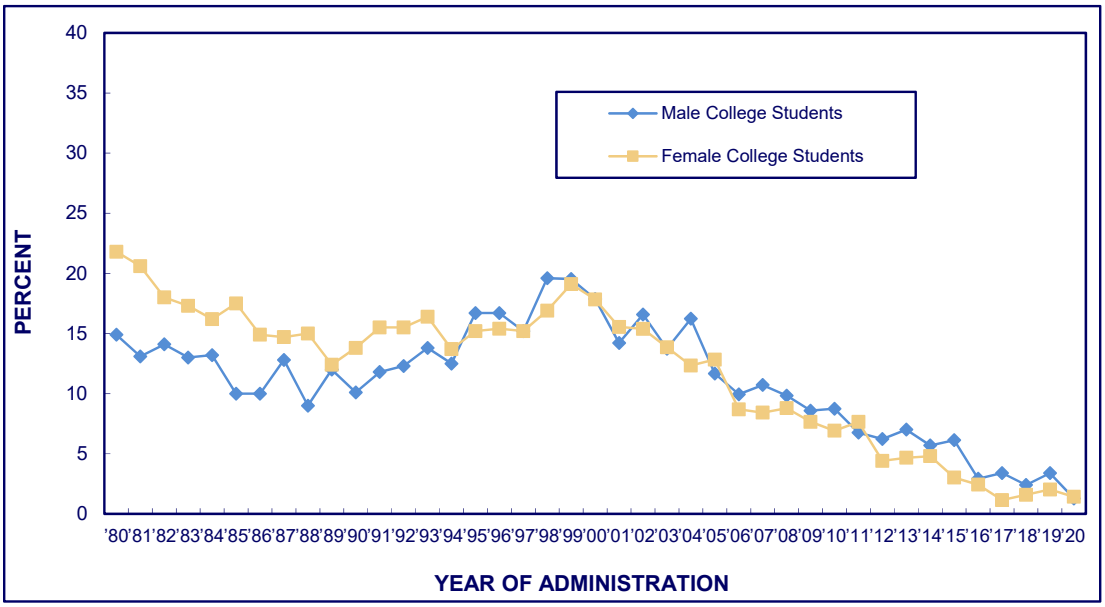
Trends in 30-Day Prevalence of Daily Use among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



CIGARETTES

Trends in 30-Day Prevalence of Daily Use among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

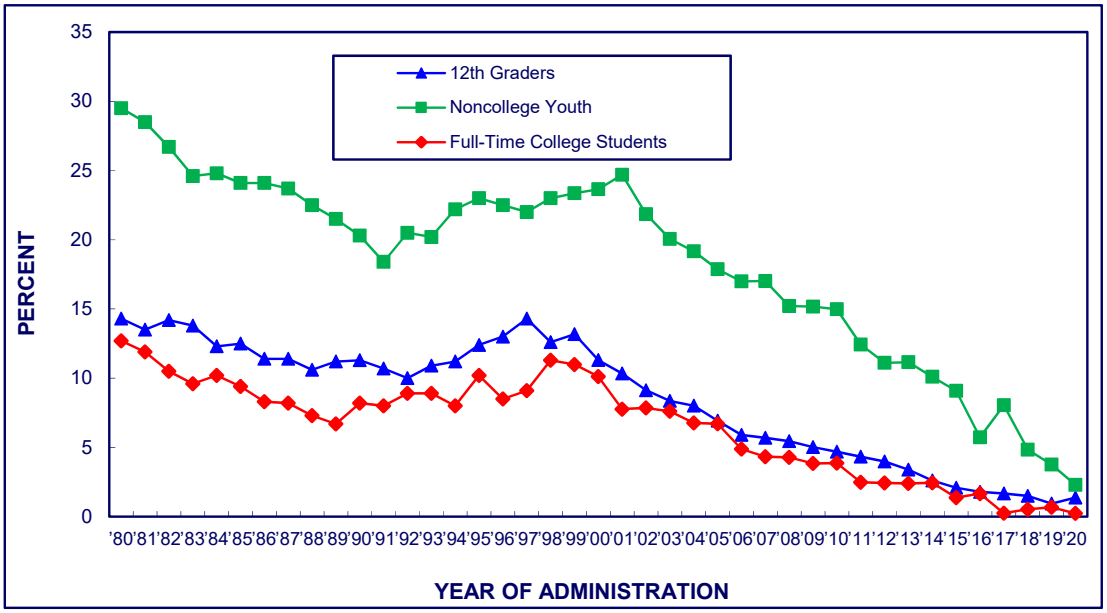
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-16c

CIGARETTES

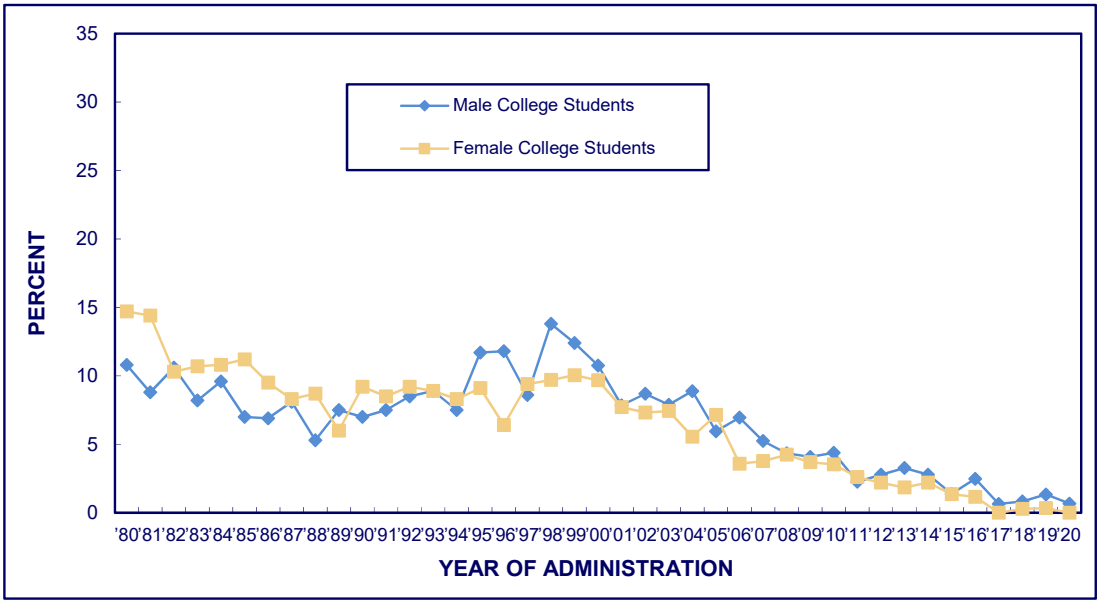
Trends in 30-Day Prevalence of Smoking a Half Pack or More per Day among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



CIGARETTES

Trends in 30-Day Prevalence of Smoking a Half Pack or More per Day among Male vs. Female College Students

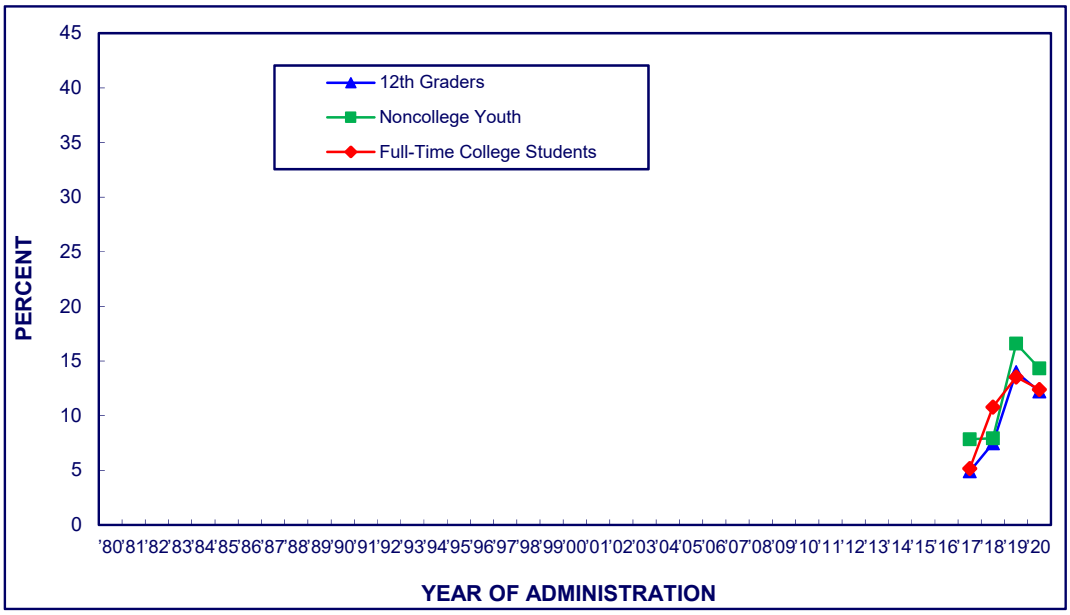


Source. The Monitoring the Future study, the University of Michigan.

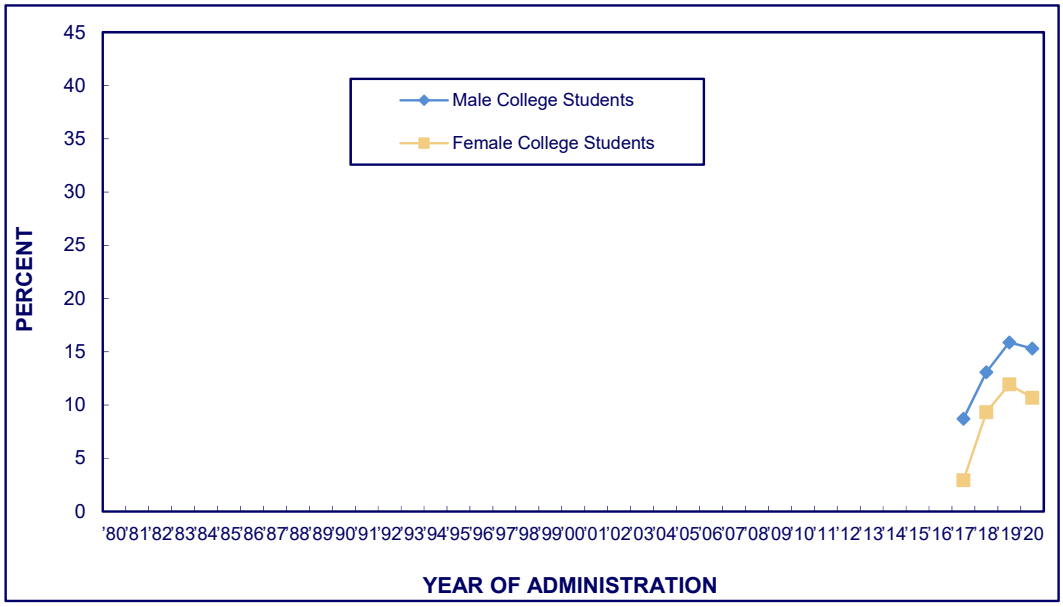
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-17
VAPING MARIJUANA
Trends in 30-Day Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



VAPING MARIJUANA
Trends in 30-Day Prevalence among Male vs. Female College Students

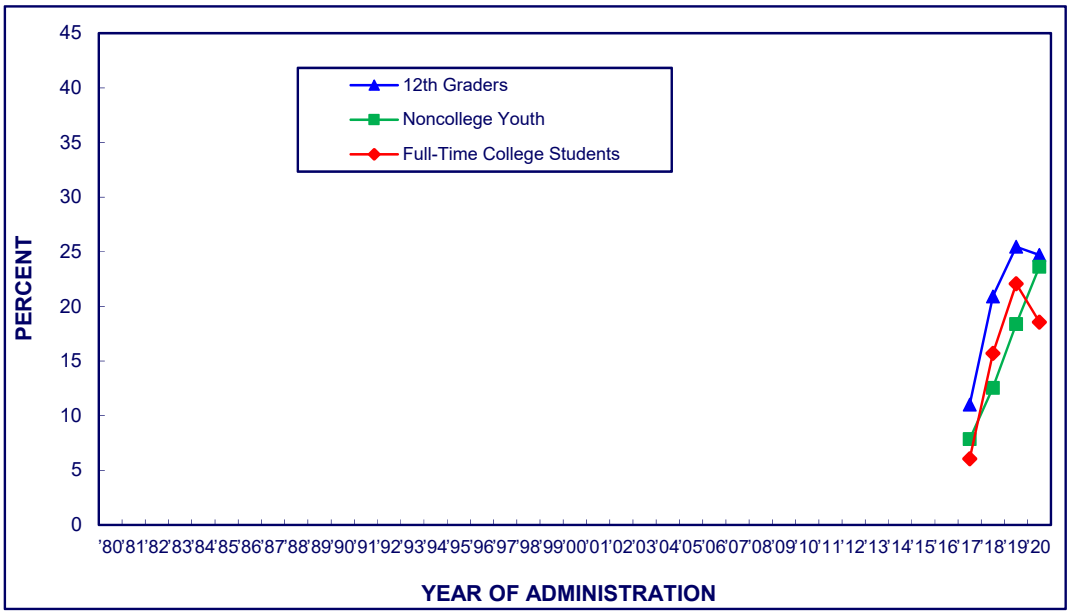


Source. The Monitoring the Future study, the University of Michigan.

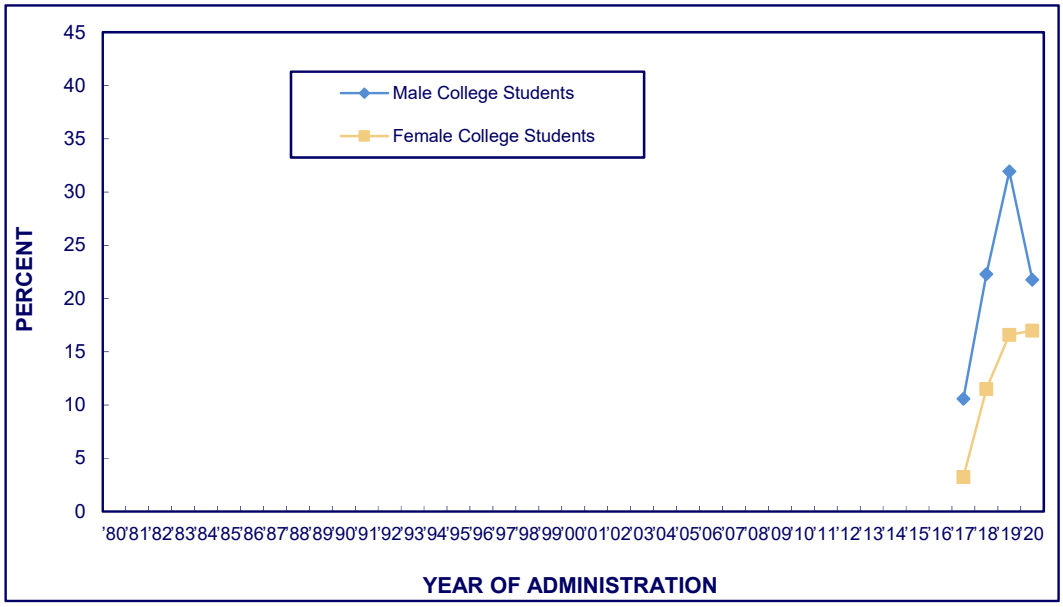
Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

FIGURE 9-18
VAPING NICOTINE
Trends in 30-Day Prevalence among College Students vs. Noncollege Youth 1 to 4 Years beyond High School

(Twelfth graders included for comparison.)



VAPING NICOTINE
Trends in 30-Day Prevalence among Male vs. Female College Students



Source. The Monitoring the Future study, the University of Michigan.

Note. Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.

Chapter 10

STUDY PUBLICATIONS

MTF results are reported in a number of other types of publications, in particular peer-reviewed journals. Selected articles published in the past year or in press as of this writing are summarized below. Further details, as well as a more complete listing, may be found on the Monitoring the Future website. In this chapter we include summaries of new publications by MTF Investigators (not listed in last year's Volume 2) that used a) MTF panel data, and b) MTF cross-sectional 8th, 10th, and/or 12th grade data.

ARTICLES BASED ON MTF PANEL DATA

Key subgroup differences in age-related change from 18 to 55 in alcohol and marijuana use: US national data[1]

Objective: This study examined age-related change in alcohol use, marijuana use, and the association between the two, from ages 18 to 55, in a national longitudinal sample.
Method: Data were from national Monitoring the Future study participants (N = 11,888) who were high school seniors in 1976–1980 and were eligible to respond to the age 55 survey in 2013–2017. Time-varying effect modeling was used to model past-30-day prevalence and associations between alcohol and marijuana across ages 18–55, overall and by sex, race/ethnicity, and college attendance.
Results: Marijuana prevalence peaked at age 18 and was lowest in the late 40s; alcohol prevalence peaked at age 22 and was lowest in the early 40s. Associations between alcohol and marijuana use were strongest at age 18. Significant differences were observed by sex, race/ethnicity, and college attendance (e.g., women's use was lower and decreased faster in the late 30s than men's; White respondents' alcohol and marijuana use were higher and peaked before Black respondents'; compared with non-attenders, college attenders' use was higher for alcohol but lower for marijuana). The alcohol and marijuana use association was strongest at ages 18–20 for most subgroups, except Black respondents, for whom the association was strongest at age 30.
Conclusions: Longitudinal data showed patterns of alcohol and marijuana use across adulthood. Such patterns highlight sociodemographic risk factors across the life span, ages that should be targeted for clinician awareness and intervention efforts, and populations at particular risk of harm from alcohol and marijuana co-use during adulthood. (J. Stud. Alcohol Drugs, 82, 93–102, 2021)

Building on a sequential mixed-mode research design in the Monitoring the Future Study[2]

Given the promise of the web push plus e-mail survey design for providing cost-effective and high-quality data (Patrick et al. 2018, 2019) as an alternative to a paper-and-pencil mailed survey design for the longitudinal Monitoring the Future (MTF) study, the current study sought to further enhance the web push condition. The MTF sample is based on US nationally representative

[1] Patrick, M. E., Kloska, D. D., Mehus, C. J., Terry-McElrath, Y., O'Malley, P. M., & Schulenberg, J. E. (2021). Key subgroup differences in age-related change from 18 to 55 in alcohol and marijuana use: US national data. *Journal of studies on alcohol and drugs, 82*(1), 93-102.
[2] Patrick, M. E., Couper, M. P., Jang, B. J., Laetz, V., Schulenberg, J. E., O'Malley, P. M., Bachman, J., & Johnston, L. D. (2020). Building on a sequential mixed-mode research design in the Monitoring the Future study. *Journal of Survey Statistics and Methodology.*

samples of 12th grade students surveyed annually. The MTF control group for the current study included participants who completed the in-school baseline survey in the 12th grade and were selected to participate in their first follow-up survey in 2017 via mailed surveys (N = 1,222). A supplementary sample (N = ~2,450) was assigned to one of the two sequential mixed-mode conditions. Those in condition 1 (N = 1,198), or mail push, were invited to complete mailed surveys and later given a web survey option. Those in condition 2 (N = 1,173), or enhanced web push, were invited to complete a web survey (the same as in the 2014 study, but with the addition of text messages and quick response (QR) codes and the web survey was optimized for mobile devices) and then later given a mailed survey option. Research aims were to examine response rates across conditions, as well as how responses were distributed across mode (paper, web), devices (computer, smartphone, table), and method of accessing the web survey (hand-entered URL, QR code, e-mail link, SMS link). Response rates differed significantly: the MTF control group was 34.2 percent, mail push was 35.4 percent, and enhanced web push was 42.05 percent. The higher response rate in the enhanced web push condition suggests that the additional strategies were effective at bringing in more respondents. Key estimates produced by the enhanced web push condition did not differ from those of the MTF control group.

Adolescent drug use before and during US national COVID-19 social distancing policies[3]

Background: How adolescent substance use and perceived availability of substances have changed during the COVID-19 pandemic remain largely unknown. Substantial reduction in availability of substances would present a unique opportunity to consider the supply-side hypothesis that reductions in drug availability will lead to reductions in drug prevalence.
Methods: Longitudinal data come from Monitoring the Future and are based on responses from 582 adolescents who were originally surveyed as part of a national sample of 12th grade students in early 2020, one month before social distancing policies began. They were surveyed again after social distancing policies were implemented, in the summer of 2020.
Results: Perceived availability of marijuana and alcohol declined across the two survey waves at the largest levels ever recorded in the 46 years of the project, by an absolute 17%, $p<.01$ and 24%, $p<.01$, respectively. Despite these declines, prevalence levels did not significantly change across the two waves for marijuana use in the past 30 days or for binge drinking in the past two weeks. Perceived availability of vaping devices significantly declined, from 73% to 63%, as did nicotine vaping prevalence in the past 30 days, from 24% to 17%.
Conclusions: Perceived availability of marijuana, alcohol, and vaping devices declined at historic rates during the pandemic of 2020. Lack of accompanying reductions in prevalence for marijuana and binge drinking demonstrates the substantial challenges facing a supply-side approach to the reduction of adolescent use of these substances.

[3] Miech, Richard A., Patrick, M. E., Keyes, K., O'Malley, Patrick M., Johnston, L. D. (2021). Adolescent drug use before and during U.S. national COVID-19 social distancing policies. *Drug and Alcohol Dependence.*

A latent transition analysis of self-reported reasons for marijuana use during young adulthood[4]

Individuals' reasons for marijuana use have been linked to their risk for continued use and development of disordered use. Although individuals tend to have multiple reasons for use, co-occurrence of reasons is not always accounted for in analytic approaches. Latent transition analysis (LTA) is ideal for modeling transitions in co-occurring reasons. Using longitudinal panel data from Monitoring the Future, LTA was used to identify profiles of self-reported reasons for marijuana use among young adults, examine transitions between profiles, and determine whether cohort, gender, race/ethnicity, parent education, grade of first marijuana use, and 4-year college attendance predicted transitions between profiles. Data included senior year cohorts from 1976–2009 and were collected at ages 19/20, 21/22, and 23/24 (weighted n = 7,294; 55.9% female; 79.3% White). Five latent classes were identified: Non-Users and individuals with Experimental, Typical, Get High + Relax, and Escape + Coping Reasons. Transitions among Non-Users, Experimental Reasons, and Typical Reasons were common; generally, those with earlier cohort membership, early initiation, college non-attending parents, and college attendance were more likely to make transitions to higher-risk classes. As the legalization of recreational marijuana use continues to expand, change over time in reasons for use should be considered carefully as interventions are developed and implemented.

Social role, behavior, and belief changes associated with driving after using marijuana among U.S. young adults, and comparisons with driving after 5+ drinking[5]

Objective: This study examined past 2-week driving after marijuana use (DMU) and driving after having 5 or more drinks (D5D) during young adulthood, specifically focusing on associations between within-person change in social roles (living situation, marriage, parenthood, education, employment) and mediators (perceived risk, evenings out, and religiosity) from modal ages 19-30.
Method: Multi-level analyses were conducted using survey data collected from 2013 to 2019 from 1,873 adults (1,060 women; total number of data collection waves=7,037) participating in the longitudinal Monitoring the Future study.
Results: Change across waves from not being married to married was associated with lower DMU likelihood at any particular wave both directly and via mediation through wave-level change in evenings out. Change in employment (not employed to employed full-time) was associated with higher D5D likelihood at any particular wave both directly and via mediation through change in evenings out. Wave-level change in other social roles was indirectly associated with DMU/D5D likelihood via wave-level change in evenings out.
Conclusions: Change in all social roles examined was associated with change in evenings out, which appears to be a primary, proximal predictor of young adult DMU/D5D. Improved understanding of how socialization change is associated with driving after substance use may strengthen efforts to reduce the harms associated with such driving behaviors.

[4] Bray, B. C., Berglund, P. A., Evans-Polce, R. J., & Patrick, M. E. (2021). A latent transition analysis of self-reported reasons for marijuana use during young adulthood. *Evaluation and The Health Professions, 44*(1), 9-24.
[5] Terry-McElrath, Y. M., & O'Malley, P. M. (in press). Social role, behavior, and belief changes associated with driving after using marijuana among U.S. young adults, and comparisons with driving after 5+ drinking. *Journal of Studies on Alcohol.*

Prospective associations of e-cigarette use with cigarette, alcohol, marijuana, and nonmedical prescription drug use among US adolescents[6]

Background: As e-cigarette use continues to increase in the U.S., research is needed to understand its prospective risk for cigarette smoking and other substance use in young adulthood, including alcohol, marijuana, and nonmedical prescription drugs (NMPDs).
Methods: This study used data from the Monitoring the Future (MTF) study a nationally representative annual survey of 12th graders (modal age 18) in the US. The analytic sample included 2014-2016 MTF cohorts that were selected and completed follow up one year later (modal age 19; n = 717). Using logistic regression, we examined cross-sectional and prospective associations of past 30-day e-cigarette use with past 30-day cigarette, alcohol, marijuana, and NMPD use. We examined prospective associations among the full sample and associations with incidence of each of these substances among those who reported no history of use in 12th grade.
Results: In cross-sectional analysis, those who reported past 30-day e-cigarette use at age 18 were more likely to report past 30-day cigarette use, alcohol use, marijuana use, and NMPD use at age 19. In multivariable longitudinal analysis, past 30-day e-cigarette users at age 18 were more likely to report past 30-day cigarette, marijuana, and NMPD use at age 19, including e-cigarette users who had no history of using these substances at age 18.
Conclusions: This study suggests that e-cigarette use may be an indicator of future substance use risk in young adulthood. Adolescent e-cigarette users may benefit from secondary prevention efforts to mitigate this risk.

Cohort and age trends in age 35-45 prevalence of alcohol use disorder symptomology, by severity, sex, race, and education[7]

Importance: Lack of current and detailed national epidemiological age and cohort trend data in symptoms of DSM-5 alcohol use disorder (AUD) among middle-aged adults represents a major gap in public health information.
Objective: To present national trends by age, cohort, and cohort differences in age trends among middle-aged adults in the prevalence of any symptoms consistent with a DSM-5 AUD diagnosis as well the prevalence of AUD symptom counts consistent with mild, moderate, and severe diagnoses.
Design: Study data were derived from mailed questionnaires conducted in a national, multi-cohort longitudinal survey of US adults, Monitoring the Future, with data collected at ages 35, 40, and 45 among 14 cohorts who reached age 45 between 2003 and 2016 (n = 20,684). Analyses accounted for differential attrition. Data were analyzed in June and July of 2020.
Main outcomes and measures: Prevalence of symptoms consistent with a DSM-5 AUD diagnosis in the past 5 years.
Results: Between ages 35 and 45 (combining across cohort) prevalence of any AUD symptom decreased 19%; decreases were more evident between ages 35 and 40 than ages 40 and 45. From 2003 to 2016, cohort differences (combining across age) in prevalence of any AUD symptoms were more modest, indicating that AUD symptoms were steady across cohort. However, because the pace of decrease across ages 35 to 45 slowed across cohort, cohort differences did emerge at

[6] Evans-Polce, R. J., Patrick, M. E., McCabe, S. E., & Miech, R. A. (2020). Prospective associations of e-cigarette use with cigarette, alcohol, marijuana, and nonmedical prescription drug use among US adolescents. *Drug and Alcohol Dependence.*
[7] Jager, J., Keyes, K.M., Son, D., Kloska, D., Patrick, M.E., & Schulenberg, J.E. (2021). Cohort and age trends in age 35-45 prevalence of alcohol use disorder symptomology, by severity, sex, race, and education. *Drug and Alcohol Dependence*.

specific ages: at age 35 prevalence decreased 18% across cohort, but at age 45 prevalence was equivalent across cohort. Observed age and cohort effects, and their interaction, did not vary by AUD severity level. Generally, observed age and cohort effects, and their interaction, were relatively constant across biological sex, race, and education. However, exceptions included: declines in AUD symptoms across age were 17% slower for females, and declines in AUD symptoms across age and cohort were 11% and 29% slower, respectively, for those with a college degree.

Conclusions and relevance: Among middle-aged adults, the MTF data indicate that risk for AUD declines across ages 35 to 45; however, these age declines are most evident between the ages of 35 and 40 and overall are less pronounced among more recent cohorts, women, and those with a college degree. Middle-aged adults in the US, especially those who have not been traditionally viewed as significantly at risk, such as women, should be queried by clinicians regularly to screen for symptoms of alcohol use disorder.

Patterns and predictors of high-intensity drinking and implications for intervention[8,9]

Efforts to intervene with subgroups at particularly high risk for alcohol use require information on factors that differentiate drinking intensity levels. This paper summarizes existing research and provides new findings on sociodemographics and risk factors that differentiate high-intensity drinking (HID) to provide context for developing and delivering interventions for the highest-risk drinkers. Cross-sectional data were obtained in 2019 from participants who reported past 30-day alcohol use in 2018 as part of the nationally representative 12th grade Monitoring the Future (MTF) study. Among past 2-week drinkers in 2019 (N=601; modal age 19; 57.0% male; 67.4% non-Hispanic White), bivariate associations between drinking intensity (moderate drinking [1-4 drinks for women/1-5 drinks for men], binge-only drinking [4-7/5-9 drinks], and HID [8+/10+ drinks]) and a range of sociodemographic characteristics, risk factors, and alcohol-related consequences were examined. Results showed binge drinking norms, social and enhancement drinking motives, nicotine vaping, and use of limiting/stopping drinking and manner of drinking protective behavioral strategies differentiated all drinking intensity levels, lending support to HID and binge-only drinking having an overlapping risk profile. However, there were also risk factors uniquely associated with HID, including sex, college attendance, employment, HID norms, use of serious harm reduction protective behavioral strategies, family history of drinking problems, any cigarette or drug use other than marijuana, and depression symptoms. Therefore, risk factors differentiate young adult drinking intensity. These results can inform efforts to adapt interventions for young adults who report HID.

[8] Patrick, M. E., Bonar, E. E., & Terry-McElrath, Y. M. (2021). Patterns and predictors of high-intensity drinking and implications for intervention. *Psychology of Addictive Behaviors.*

[9] This study used data from a sample of MTF 12th graders followed longitudinally with supplementary funding from NIAAA (grant R01 AA023504 to Megan Patrick)

Drinking motives and drinking consequences across days: Differences and similarities between moderate, binge, and high-intensity drinking[10,11]

Abstract Background: The current study examined the extent to which within-person variation in drinking motives differentiates moderate, binge, and high-intensity drinking; and independent associations of motives and drinking intensity with alcohol use consequences in a sample of young adult drinkers from across the United States.
Methods: Participants were past 30-day drinkers in the U.S. nationally representative Monitoring the Future 12th grade sample in 2018, who also reported alcohol use during a 14-day data collection burst 1 year later (N = 484 people, mean age 19.3 [SD 0.40], 43% female; N = 1042 drinking days) as part of the Young Adult Daily Life Study in 2019. Weighted multilevel modeling estimated within- and between-person associations of drinking motives, drinking intensity (i.e., moderate [women 1–3, men 1–4 drinks], binge [women 4–7, men 5–9 drinks], and high-intensity drinking [women 8+, men 10+ drinks]), and number of positive and negative alcohol consequences.
Results: On days participants reported greater enhancement and social motives, they were more likely to engage in high-intensity (vs. binge) drinking and binge (vs. moderate) drinking and experience more positive alcohol consequences. On days participants reported greater enhancement and coping motives, they experienced more negative alcohol consequences. Binge (vs. moderate) drinking on a given day was associated with more positive and negative alcohol consequences; high-intensity (vs. binge) drinking on a given day was associated with more negative alcohol consequences that day. Moderation analyses indicated that social motives were associated with high-intensity (vs. binge) drinking only among college students.
Conclusions: Stronger drinking motives on a given day were associated with drinking intensity (enhancement and social motives) and negative consequences (enhancement and coping). High-intensity (vs. binge or moderate) drinking was associated with more negative consequences but not more positive consequences. These results underscore that high-intensity drinking and consequences vary across days and time-varying, occasion-specific risks such as current motivational context are appropriate targets for intervention.

Drinking intensity at age 29/30 as a predictor of alcohol use disorder symptoms at age 35 in a national sample[12]

Objective: The purpose of this longitudinal study was to differentiate associations of drinking intensity at age 29/30 with symptoms of alcohol use disorder (AUD) at age 35.
Method: Analyses used national longitudinal data from 1,253 individuals participating in the Monitoring the Future study. Age 29/30 data were collected from 2005-2013; age 35 data collected from 2010-2018. Multivariable models regressed age 35 past 5-year AUD symptoms (vs. non-disordered drinking/abstinence) on age 29/30 past 2-week drinking intensity (no/low [0-4] drinking, binge [5-9] drinking, high-intensity [10+] drinking), controlling for key covariates.
Results: At age 35, 32.6% (SE 1.50) of respondents reported AUD symptoms. AUD symptoms at age 35 were reported by 77.5% (SE 4.79) of participants who reported age 29/30 high-intensity

[10] Patrick, M. E., & Terry-McElrath, Y. M. (2021). Drinking motives and drinking consequences across days: Differences and similarities between moderate, binge, and high-intensity drinking. *Alcoholism: Clinical & Experimental Research.*
[11] This study used data from a sample of MTF 12th graders followed longitudinally with supplementary funding from NIAAA (grant R01 AA023504 to Megan Patrick)
[12] Patrick, M. E., Evans-Polce, R. J., Parks, M. J., & Terry-McElrath, Y. M. (2021). Drinking intensity at age 29/30 as a predictor of alcohol use disorder symptoms at age 35 in a national sample. *Journal of Studies on Alcohol and Drugs.*

drinking and 60.6% (SE 3.95) of participants who reported age 29/30 binge drinking. Age 35 past 5-year abstinence was reported by almost no respondents reporting age 29/30 binge drinking or high-intensity drinking. AUD symptoms at age 35 were significantly more likely for those who reported binge (AOR 5.61 [95% CI 3.79, 8.30], p<.001) or high-intensity (AOR 12.26 [6.70, 22.41], p<.001) drinking versus no/low drinking at age 29/30. The likelihood of having AUD symptoms was significantly higher for high-intensity than binge drinkers (AOR 2.18 [1.14, 4.19], p=0.019).
Conclusions: Nearly 80% of those young adults who reported engaging in high-intensity drinking (10+ drinks in a row) at age 29/30 later reported AUD symptoms at age 35. High-intensity drinking appears to be a strong prospective marker of risk for AUD symptoms among adults in the U.S.

Tobacco taxation and its prospective impact on disparities in smoking initiation and progression among young adults[13]

Purpose: Limited research exists on tobacco taxes and cigarette smoking initiation and progression, particularly across different sociodemographic groups in young adulthood. This project examines how cigarette pack price in late adolescence prospectively relates to smoking initiation and progression by 21 years of age, focusing on differences across demographics.
Methods: Data are from the longitudinal Monitoring the Future project (2001–2017). Monitoring the Future examines drug use behaviors with nationally representative samples of 12th graders annually. Subsamples of 12th graders are followed up longitudinally. We examined past 30-day cigarette smoking among baseline never smokers (N = 9,232) and daily smoking among youths who were not daily cigarette smokers at baseline (N = 15,141). Using logistic regression, we examined state-level cigarette pack price at a modal age of 18 years and smoking at follow-up ages 19–20 years; we used interaction terms to assess differences across sociodemographic groups (by gender, race/ethnicity, and parental education).
Results: For each dollar increase in price at baseline, the odds of initiation by age 19–20 years were reduced by 12% (adjusted odds ratio = .88; 95% confidence interval = .78, .99) and the odds of progression to daily smoking were reduced by 16% (adjusted odds ratio = .84; 95% confidence interval = .76, .92). After adjusting for multiple testing, for both outcomes there were no statistically significant interactions between price and demographics.
Conclusions: Cigarette prices in late adolescence were associated with a prospective reduction in cigarette smoking initiation and progression among young adults, with limited differences across sociodemographic characteristics. Higher cigarette prices can prevent smoking initiation and progression; however, complementary interventions are needed to reduce initiation and progression among subgroups disproportionately affected by tobacco.

Prevalence of spanking in US national samples of 35-year-old parents from 1993 to 2017[14]

Sporadically, studies have presented prevalence estimates of corporal punishment from one-time national samples; together, they suggest a decrease over recent decades. However, to our knowledge, no repeated surveys have documented trends in the prevalence of spanking in the US.

[13] Parks, M. J., Patrick, M. E., Levy, D. T., Thrasher, J. F., Elliott, M. R., & Fleischer, N. L. (2021). Tobacco taxation and its prospective impact on disparities in smoking initiation and progression among young adults. *Journal of Adolescent Health*, *68*(4), 765-772.
[14] Mehus, C. J., & Patrick, M. E. (2021). Prevalence of spanking in US national samples of 35-year-old parents from 1993 to 2017. *JAMA pediatrics*, *175*(1), 92-93.

We used national panel data from the Monitoring the Future (MTF) study on 25 consecutive cohorts (graduating high school seniors in 1976-2000) assessed 17 years later (data at modal age 35 years collected from 1993-2017). The analytic sample (n=16,390) included those reporting at least 1 child age 2 to 12 years living at home part-time or full-time (including biological, adopted, or stepchildren). In a sample of parents at modal age 35 years with children aged 2 to 12 years, spanking declined over 25 years. The modeled prevalence of spanking decreased (slope = −0.005; SE = 0.001; $P < .001$) from 50% in 1993 to 35% in 2017. In post hoc analyses, the modeled prevalence for men decreased from 52% to 36% and for women from 48% to 35%. Spanking has been reported to be highest with children age 2 to 4 years; this study's results show a decrease across cohorts despite parents having slightly younger children in later cohorts. Spanking decreased among mothers and fathers from 1993 to 2017. Although a downward trend was observed, there is a clear need for ongoing education about alternative discipline strategies.

Civic development across the transition to adulthood in a national US sample: Variations by race/ethnicity, parent education, and gender[15]

Despite a growing understanding about civic development, we know little about whether the developmental course of civic engagement is the same across different types of civic engagement or different groups of youth. To advance developmental science in this area, we documented age-related change in community service, political interest, electoral participation, and political voice across the transition to adulthood by race/ethnicity, parent education, gender, and their interactions. National multicohort probability samples of U.S. high school seniors from the Monitoring the Future study were assessed at baseline (age 18) and followed longitudinally via self-administered mail surveys across 6 follow-up waves to age 29/30. Of the sample (N = 12,557), 51.0% were women, 11.0% were Black, 7.0% were Latinx, 2.3% were Asian, and 75.4% were White. Community service decreased from age 18 to 24, then showed modest recovery. Political interest, electoral participation, and political voice increased steadily from 18 to 24 and less steeply thereafter. Intercepts and (to some extent) slopes varied by race/ethnicity, parent education, gender, and intersections of these factors. Black youth started and remained highest in community service and showed more accelerated growth in political interest and electoral participation. Young women reported higher community service, whereas gender gaps in political engagement trajectories favored young men. Black and Latinx young women stood out as having distinct civic trajectories. The role of parent education varied by race/ethnicity and gender. Diverse civic pathways advance theoretical understanding of civic development.

[15] Wray-Lake, L., Arruda, E. H., & Schulenberg, J. E. (2020). Civic development across the transition to adulthood in a national US sample: Variations by race/ethnicity, parent education, and gender. *Developmental psychology*, *56*(10), 1948.

ARTICLES BASED ON MTF 8TH, 10TH, AND/OR 12TH GRADE DATA

Medical use and misuse of prescription opioids among US 12th grade youth: School-level correlates[16]

Background and Objectives: Opioid misuse and overdose remains a leading US public health concern, and many youth are first exposed to opioids via medical use. In this study, we examine school-level prevalence and correlates of medical use and misuse of prescription opioids among US 12th-grade students.
Methods: A sample of 228 507 US 12th-graders in 1079 public and private schools from 2002 to 2017 from the Monitoring the Future study was used to identify school-level prevalence and correlates associated with medical use and misuse of prescription opioids.
Results: The past-year prevalence of prescription opioid misuse was 7.6% and ranged from 0% to 73% across US high schools. Lifetime medical use of prescription opioids was 16.9% and ranged from 0% to 85% across US high schools. The odds of prescription opioid misuse were higher at schools with higher proportions of male students, more white students, higher rates of marijuana use, and more medical use of prescription opioids. Students attending schools with the highest rates of medical use of prescription opioids had 57% increased odds of past-year prescription opioid misuse compared with schools with no medical use (adjusted odds ratio = 1.57, 95% confidence interval = 1.35–1.83); this association was found to weaken in recent years.
Conclusions: Differences exist in the prevalence of prescription opioid misuse among US high schools. The association between greater school-level medical use of prescription opioids and higher prevalence of prescription opioid misuse, although declining, indicates a key risk factor to target for prevention efforts.

Boredom by sensation seeking interactions during adolescence: Associations with substance use, externalizing behavior, and internalizing symptoms in a US national sample[17]

During adolescence, sensation seeking is linked to several adverse outcomes including substance use, risk taking, and psychopathology. Recent empirical interest in the construct of boredom has revealed that some similar associations may exist for boredom during adolescence. Both boredom and sensation seeking peak during adolescence, and yet, research on boredom and its interaction with sensation seeking are limited. In a multi-cohort, US nationally representative sample of 8th and 10th grade students from the Monitoring the Future study, latent-moderated structural equation modeling was used to estimate the association of boredom, sensation seeking, and their interaction, to substance use, externalizing behavior, and depressive affect. Moderation by gender was also tested. Boredom and sensation seeking were both significantly associated with most dependent variables. Significant interaction effects were found wherein individuals high on both boredom and sensation seeking reported the highest levels of depressive affect and externalizing behavior. There were no significant interaction effects for substance use indices. Gender moderation was found for depressive affect. The results of this study demonstrate the generalizability of boredom associations and the significance of boredom by sensation-seeking interactions across multiple

[16] McCabe, S. E., Schulenberg, J., McCabe, V. V., & Veliz, P. T. (2020). Medical use and misuse of prescription opioids in US 12th-grade youth: school-level correlates. *Pediatrics*, *146*(4).
[17] Freund, V. A., Schulenberg, J. E., & Maslowsky, J. (2021). Boredom by sensation-seeking interactions during adolescence: Associations with substance use, externalizing behavior, and internalizing symptoms in a US national sample. *Prevention science*, 1-12.

mental health domains during adolescence. Prevention efforts that attend to both boredom and sensation seeking may be particularly effective for promoting mental health and preventing externalizing behavior.

Changes in the order of cigarette and marijuana initiation and associations with cigarette use, nicotine vaping, and marijuana use: US 12th grade students, 2000-2019[18]

This study (a) examined changes in marijuana and cigarette initiation sequencing and (b) considered implications of such changes for prevention efforts by examining associations between initiation sequencing and current adolescent substance use. Analyses used 2000-2019 cross-sectional data from the national Monitoring the Future (MTF) study (78,252 U.S. 12th grade students). Models examined trends in six distinct patterns of initiation order, and multivariable associations between order of initiation and 30-day cigarette and marijuana use prevalence, cigarette and marijuana use frequency among users, and nicotine and marijuana vaping prevalence. While the percentage of students initiating neither cigarettes nor marijuana increased, increases also were observed in marijuana-only initiation (the fastest-growing pattern) and initiation of marijuana before cigarettes; these increases were accompanied by a significant decrease in cigarette-only initiation. Cigarette use prevalence and frequency were highest among students initiating cigarettes before marijuana; marijuana use prevalence and frequency were highest among students initiating marijuana before cigarettes. Cigarette and marijuana prevalence, as well as marijuana frequency, were lowest among students initiating only a single substance. Nicotine vaping was less prevalent among students initiating a single substance versus both substances, but no significant differences were observed in nicotine vaping prevalence between those initiating only cigarettes versus only marijuana. Implications of these findings for prevention efforts are discussed in the frameworks of both the common liability model and route of administration model.

Trends in use and perceptions of nicotine vaping among US youth from 2017 to 2020[19]

Importance: US adolescent nicotine vaping increased at a record pace from 2017 to 2019, prompting new national policies to reduce access to flavors of vaping products preferred by youth.
Objective: To estimate prevalence, perceived harm, and accessibility of nicotine vaping products among US adolescents from 2017 to 2020.
Design, Setting, and Participants: This survey study includes data from Monitoring the Future, which conducted annual, cross-sectional, school-based, nationally representative surveys from 2017 to 2020 of 10th- and 12th-grade students (results pooled grades, n = 94 320) about vaping and other topics.
Main Outcomes and Measures: Prevalence of self-reported nicotine vaping; vaping brand and flavor used most often; perceived risk of nicotine vaping; and perceived ease of getting vaping devices, nicotine solutions for vaping, and flavored solutions.
Results: In 2020, Monitoring the Future surveyed 8660 students in 10th and 12th grade, of whom 50.6% (95% CI, 47%-54%) were female, 13% (95% CI, 8%-21%) were non-Hispanic

[18] Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2020). Changes in the order of cigarette and marijuana initiation and associations with cigarette use, nicotine vaping, and marijuana use: US 12th grade students, 2000–2019. *Prevention Science, 21*(7), 960-971.
[19] Miech, Richard A., Leventhal, A., Johnston, L. D., O'Malley, P. M., Patrick, M. E., & Barrington-Trimis, J. (2021). Trends in use and perceptions of nicotine vaping among US youth from 2017 to 2020. *Jama Pediatrics, 175*(2), 185-190.

Black, 29% (95% CI, 21%-40%) were Hispanic, and 53% (95% CI, 42%-63%) were non-Hispanic White. Nicotine vaping prevalence in 2020 was 22% (95% CI, 19%-25%) for past 30-day use, 32% (95% CI, 28%-37%) for past 12-month use, and 41% (95% CI, 37%-46%) for lifetime use; these levels did not significantly change from 2019. Daily nicotine vaping (use on ≥20 days of the last 30 days) significantly declined from 9% (95% CI, 8%-10%) to 7% (95% CI, 6%-9%) over 2019 to 2020. JUUL brand prevalence in the past 30 days decreased from 20% (95% CI, 18%-22%) in 2019 to 13% (95% CI, 11%-15%) in 2020, while use of other brands increased. Among youth who vaped in the past 30 days in 2020, the most often used flavor was fruit at 59% (95% CI, 55%-63%), followed by mint at 27% (95% CI, 24%-30%) and menthol at 7% (95% CI, 5%-9%); significantly fewer reported easy access to vaping devices and nicotine solutions compared with 2019; and 80% (95% CI, 75%-84%) reported they could easily get a vaping flavor other than tobacco or menthol. Among all youth, perceived risk of both occasional and regular nicotine vaping increased from 2019 to 2020.
Conclusions and Relevance: Increasing US adolescent nicotine vaping trends from 2017 to 2019 halted in 2020, including a decline in daily vaping. Decreases in perceived accessibility of some vaping products, as well as increases in perceived risk of nicotine vaping, occurred from 2019 to 2020. Yet, adolescent nicotine vaping remains highly prevalent, flavors remain highly accessible, and declines in JUUL use were countered by increased use of other brands.

The impact of survey mode on US national estimates of adolescent drug prevalence: Results from a randomized-controlled study[20]

Background and Aims: Increasing numbers of school-based drug surveys are transitioning data collection to electronic tablets from paper-and-pencil, which may produce a survey mode effect and consequent discontinuity in time trends for population estimates of drug prevalence. This study tested whether (a) overall, self-reported drug use prevalence is higher on electronic tablets versus paper-and-pencil surveys, (b) socio-demographics moderate survey mode effects and (c) levels of missing data are lower for electronic tablet versus paper-and-pencil modes.
Design: A randomized controlled experiment.
Setting: Results are nationally representative of students in the contiguous United States.
Participants: A total of 41 866 8th, 10th and 12th grade students who participated in the 2019 Monitoring the Future school-based survey administration.
Intervention and comparator: Surveys were administered to students in a randomly selected half of schools with electronic tablets (intervention) and with paper-and-pencil format (comparator) for the other half.
Measurements: Primary outcome was the total number of positive drug use responses. Secondary outcomes were the percentage of respondents completing all drug questions, percentage of drug questions unanswered and mean number of missing drug items.
Findings: The relative risk (RR) for total number of positive drug use responses for electronic tablets versus paper-and-pencil surveys were small and their 95% confidence intervals (CI) included the value of one for reporting intervals of life-time (RR = 1.03; 95% CI, 0.93–1.14), past 12 months (RR = 1.01; 95% CI, 0.91–1.11), past 30 days (RR = 1.05; 95% CI, 0.93–1.20) and for heavy use (RR = 1.10; 95% CI, 0.93–1.29). Multiplicative interaction tests indicated no moderation of these relative risks by race (white versus non-white), population density, census

[20] Miech, R., Couper, M. P., Heeringa, S. G., & Patrick, M. E. (2020). The impact of survey mode on US national estimates of adolescent drug prevalence: results from a randomized controlled study. *Addiction.*

region, public/private school, year of school participation, survey version or non-complete drug responses. Levels of missing data were significantly lower for electronic tablets versus paper-and-pencil surveys.
Conclusions: Adolescent drug prevalence estimates in the United States differed little across electronic tablet versus paper-and-pencil survey modes, and showed little to no effect modification by socio-demographics. Levels of missing data were lower for electronic tablets.

Trends in reported marijuana vaping among US adolescents, 2017-2019[21]

Introduction: This study reports the prevalence of marijuana vaping for 2019 among US adolescents and the prevalence increases between 2017, 2018, and 2019.
Methods: Monitoring the Future annually surveys nationally representative samples of US 8th, 10th, and 12th graders between February and June. A randomly selected two-thirds sample received the marijuana vaping questions in 2019, and a randomly selected one-third sample received the questions in 2017 and 2018.
Results: In 2019, past 30-day prevalence of marijuana vaping was reported by 3.9% of 8th graders, 12.6% of 10th graders, and 14.0% of 12th graders. Reported past 30-day prevalence levels significantly increased from 2018 to 2019. The absolute increases were 1.3% in 8th graders, 5.6% in 10th graders, and 6.5% in 12th graders. Among 12th graders, this increase was significantly larger than the increase from 2017 to 2018 by an absolute difference of 4.0%. Among 10th graders, the increase was by 2.9%. Results were similar for use during the past 12 months and lifetime use. Prevalence increases in every year were statistically significant for all grades. For all reporting intervals, the prevalence increases among 12th graders were larger from 2018 to 2019 than from 2017 to 2018. In 2019, near daily marijuana vaping was reported by 0.8% of 8th graders, 3.0% of 10th graders, and 3.5% of 12th graders.
Discussion: Reported adolescent marijuana vaping increased from 2018 to 2019. The absolute increases from 2018 to 2019 among 12th graders for past 30-day use are the second largest, single-year increases ever tracked by Monitoring the Future for any substance in its 45-year history (increased nicotine vaping from 2017 to 2018 ranks first). Study limitations include potential for reporting error and the absence of high-school dropouts. As the number of adolescents who vape marijuana increases, so too does the scope and effect of any associated health consequences, which may include lung injury when using black market formulations.4 The rapid rise of marijuana vaping indicates the need for new prevention and intervention efforts aimed specifically at adolescents.

How do high school seniors get marijuana? Prevalence and sociodemographic differences[22]

Introduction: Efforts to understand how adolescents acquire marijuana will help to contextualize its use among youth. Little is known about ways of getting marijuana and how they differ between subgroups of adolescents. The present study sought to determine how adolescents get marijuana and if modes of access vary by sociodemographic characteristics.
Method: Data were from the nationally representative Monitoring the Future study of 12th graders

[21] Miech, R. A., Patrick, M. E., O'Malley, P. M., Johnston, L. D., & Bachman, J. G. (2020). Trends in reported marijuana vaping among US adolescents, 2017-2019. *JAMA, 323*(5), 475-476.
[22] Wagner, A. C., Parks, M. J., & Patrick, M. E. (2021). How do high school seniors get marijuana? Prevalence and sociodemographic differences. *Addictive Behaviors.*

in the United States from 2012 to 2018 (N=4,262 students). Participants used marijuana in the past 12 months and were asked how they got marijuana. Multivariable logistic regression models were used to predict modes of getting marijuana based on sex, race/ethnicity, urbanicity, parental education, and survey year. Cross-tabulation analyses compared how recent frequent and non-frequent use related to ways of getting marijuana.
Results: The most endorsed methods of getting marijuana were given for free by friends, bought from friends, and bought from a drug dealer/stranger. Differences by sociodemographic subgroup and recent frequent use emerged, including for riskier modes of obtainment such as buying from a drug dealer/stranger (for male students, urban students, and recent frequent users). Recent frequent users were more likely to endorse getting marijuana by nearly each method, except non-frequent users were more likely to be given marijuana for free by friends.
Discussion: Understanding the prevalence of different modes of getting marijuana among adolescents and which subgroups are most susceptible to riskier means of getting marijuana will allow drug use prevention efforts to be tailored appropriately so as to maximize effectiveness.

Alcohol use among 10th-graders: Distinguishing between high-intensity drinking and other levels of use[23]

Introduction: Drinking at levels beyond standard binge drinking thresholds poses particularly high risks to youth. Few studies have examined high-intensity drinking (HID; 10+ drinks in a row) in high school students and none have tested whether peer drunkenness and parental knowledge (e.g., about youth's whereabouts) distinguish between binge and high-intensity drinkers.
Methods: We used data from the Monitoring the Future study collected from nationally-representative samples of U.S. 10th graders (modal age 16 years old) in 2016–2018 (n = 14,824; 48.3% girls, 46.8% boys). We conducted multinomial logistic regression to examine odds of drinking at one of four mutually-exclusive levels: HID in the past 2 weeks, binge (5+) drinking in the past 2 weeks, any alcohol use in the past year, and no alcohol use in the past year.
Results: Low parental knowledge and peer drunkenness were both associated with higher odds of each drinking level, including HID vs. binge, binge vs. alcohol use, and alcohol use vs. no alcohol use. Boys had higher odds than girls of HID compared to binge drinking and of no alcohol use compared to alcohol use.
Conclusions: Parent and peer risk factors differentiate HID from other levels of drinking.

Social media use and depressive symptoms among United States adolescents[24]

Purpose: Depression is increasingly common among US adolescents; the extent to which social media exposure contributes to this increase remains controversial.
Methods: We used Monitoring the Future data from 8th and 10th grade students (n = 74,472), 2009–2017, to assess the relationship between daily social media use and depressive symptoms. Self-reported depressive symptom score (range: 4–20) was assessed continuously using a log-transformed outcome and at varying cut scores with logistic regression analyses. First, these outcomes were examined overall, comparing adolescents using social media daily to adolescents who were not. We then estimated predicted depressive symptom scores using 26 predictors in

[23] Mehus, C. J., & Patrick, M. E. (2020). Alcohol use among 10th-graders: Distinguishing between high-intensity drinking and other levels of use. *Journal of Adolescence*, *83*, 27-30.
[24] Kreski, N., Platt, J., Rutherford, C., Olfson, M., Odgers, C., Schulenberg, J., & Keyes, K. M. (2021). Social media use and depressive symptoms among United States adolescents. *Journal of Adolescent Health*, *68*(3), 572-579.

order to establish underlying depression risk. We partitioned students into depression risk quintiles to control for confounding due to underlying depression risk and examine heterogeneity in the association between social media use and depressive symptoms. Sensitivity analyses were used to test the robustness of results with different configurations of the predicted score model, and overall associations were examined in two-year groups to identify differences in effects.
Results: For girls, in adjusted risk-stratified analysis, daily social media use was not associated with high (vs. low) depressive symptoms. For boys, results were inconsistent, suggesting a protective effect of daily social media use at some cut scores. Results were consistent across sensitivity analyses, and any potential harmful effects appear to be limited to 2009–2010, limiting the evidence supporting social media as a current risk factor for depressive symptoms.
Conclusions: Among US adolescents, daily social media use is not a strong or consistent risk factor for depressive symptoms.

Comparing prevalence estimates of concussion/head injury in US children and adolescents in national surveys[25]

Background and objectives: Reports on pediatric lifetime concussions/head injuries (LCHI) from national surveys have offered estimates on prevalence that range from 2.5% to 18% in the general population. The purpose of this study is to examine national surveys to compare methodologies and limitations pertaining to LCHI data collection.
Methods: Three nationally representative surveys that measure LCHI in children, including the National Survey of Children's Health, the National Health Interview Survey, and the Monitoring the Future Survey were examined. Children were grouped by ages 3–17 years and adolescent ages 13–17 years, stratified by selected demographic characteristics. Participants in the surveys included parents (NSCH and NHIS) and adolescents (MTF survey). The primary outcome measure is an estimate of LCHI in children.
Results: Estimates of prevalence of LCHI ranged from 3.6% to 7.0% for children ages 3–17 years and from 6.5% to 18.3% for adolescents 13–17 years. Survey modality, question wording, and respondent may contribute to differing estimates. Prevalence showed consistent variation by age, sex, and race/ethnicity across surveys. Associations were inconsistent between LCHI and insurance status, parental education, and household primary language.
Conclusions: Although there are methodological differences in capturing pediatric LCHI across surveys, the prevalence estimates and correlational associations generated can offer awareness about the burden of these injuries and insights to research and clinical care.

Trends in the prevalence of concussion reported by US adolescents, 2016-2020[26]

In 2016, 19.5% of US adolescents reported at least 1 concussion during their lifetime. While knowledge about concussion and management of these injuries within the adolescent population have increased over the past decade, to our knowledge no national study has tracked whether rates of concussion have declined or increased. This study estimated trends in the lifetime prevalence of self-reported concussion among a national sample of adolescents between 2016 and 2020. This

[25] Haarbauer-Krupa, J., Lebrun-Harris, L. A., Black, L. I., Veliz, P., Daugherty, J., Desrocher, R., Schulenberg, J., Pilkey, D., & Breiding, M. (2021). Comparing prevalence estimates of concussion/head injury in US children and adolescents in national surveys. *Annals of Epidemiology*, *54*, 11-20.
[26] Veliz, P., McCabe, S. E., Eckner, J. T., & Schulenberg, J. E. (2021). Trends in the prevalence of concussion reported by US adolescents, 2016-2020. *JAMA*, *325*(17), 1789–1791.

study uses national cross-sectional data from the 2016-2020 Monitoring the Future (MTF), including 52949 8th, 10th, and 12th graders. A measure to assess concussion was added to the MTF in 2016, asking respondents the following: "Have you ever had a head injury that was diagnosed as a concussion?" Response options included "No", "Yes, once", and "Yes, more than once". The measure did not change across the five years. Binary regression models estimated linear trends for self-reported concussion; adjusted models controlled for sex, race/ethnicity, grade-level, parental education, and participation in sports. Lifetime prevalence of at least one self-reported concussion increased from 19.5% (95% CI 18.5%,20.6%) in 2016 to 24.6% (95% CI 22.5%,26.7%) in 2020 (aPR=1.05, 95% CI=1.03,1.08). The increase in lifetime prevalence of only one self-reported concussion (aPR=1.05, 95% CI=1.02,1.08; 14.0% in 2016 versus 17.7% in 2020), and two or more self-reported concussions (aPR=1.05, 95% CI=1.01,1.11; 5.5% in 2016 versus 6.8% in 2020) between 2016-2020 was statistically significant. Increases in any self-reported concussion were found among males, females, White and Non-White respondents, respondents whose parents had a high school degree or less, and respondents who participated in competitive sports during the past-year. In conclusion, between 2016 and 2020, the estimated percent of U.S. 8th, 10th, and 12th graders who reported at least one diagnosed concussion during their lifetime increased.

MTF WEBSITE: ADDITIONAL PUBLICATIONS AND REPORTS

Any reader wishing to obtain more information on the study (including data tables), or to check for recent findings and publications, may visit the MTF website. Included are publications in this series of annual monographs in addition to this one (*Volume 1*, *Overview of Key Findings*, and *HIV/AIDS*), related occasional paper on subgroups,[27] and press releases.

MTF ADOLESCENT AND ADULT DATA

De-identified MTF data are available to researchers through the National Addiction and HIV Data Archive Program (sponsored in part by the National Institute on Drug Abuse), part of the Inter-University Consortium of Political and Social Research at the University of Michigan. This includes access to MTF public-use cross-sectional base year data, and to MTF restricted-use cross-sectional base year data and panel data for qualified researchers.

[27] Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2020). Demographic subgroup trends among adolescents in the use of various licit and illicit drugs 1975-2019 (Monitoring the Future Occasional Paper No. 94). Ann Arbor, MI: Institute for Social Research, University of Michigan.

TABLE A-1
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Any Illicit Drug [1]																															
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	28.3	26.8	26.8	24.5	22.8	21.5	21.4	20.9	19.0	19.6	19.9	21.4	20.1	18.5‡	21.1	20.3	20.5	17.2	18.2	18.7	20.4	20.4	+1.7
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	46.2	45.6	45.6	44.6	41.4	39.8	38.2	36.1	35.6	34.1	36.0	37.0	37.7	36.8‡	39.1	37.4	34.7	33.7	34.3	36.3	37.5	37.5	+1.2
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	51.1	51.1	50.4	48.2	46.8	47.4	46.7	48.2	49.9	49.1‡	49.8	49.1	48.9	48.3	48.9	47.8	47.4	47.4	-0.4
College Students	50.4	48.8	45.9	45.5	45.5	47.4	49.0	52.9	53.2	53.7	53.6	51.8	53.9	52.2	52.3	50.6	50.5	49.5	51.4	49.1	49.2	50.5‡	53.3	52.4	53.4	54.4	55.5	55.7	58.9	56.3	-2.6
Young Adults	63.7	61.7	61.1	58.9	59.3	58.0	58.1	58.4	58.6	58.5	58.6	59.1	59.9	60.3	60.4	60.2	60.4	60.5	60.5	59.6	60.2	59.8‡	61.3	63.2	64.5	64.2	65.4	65.5	67.9	66.7	-1.1
Any Illicit Drug other than Marijuana [1,2]																															
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	16.3	15.8‡	17.0	13.7	13.6	12.2	12.1	12.2	11.1	11.2	10.4	10.6	9.8	8.7‡	10.4	10.0	10.3	8.9	9.3	9.8	10.8	10.8	+1.0
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	24.0	23.1‡	23.6	22.1	19.7	18.8	18.0	17.5	18.2	15.9	16.7	16.8	15.6	14.9‡	16.4	15.9	14.6	14.0	13.7	14.2	13.8	13.8	-0.4
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0‡	30.7	29.5	27.7	28.7	27.4	26.9	25.5	24.9	24.0	24.7	24.9	24.1‡	24.8	22.6	21.1	20.7	19.5	18.9	18.4	18.4	-0.6
College Students	25.8	26.1	24.3	22.0	24.5	22.7	24.4	24.8	25.5	25.8‡	26.3	26.9	27.6	28.0	26.5	26.3	25.3	22.6	25.6	24.8	24.3	23.8‡	28.3	29.0	26.4	26.5	26.3	27.3	26.2	22.6	-3.6
Young Adults	39.3	38.4	35.9	34.7	34.7	32.9	31.9	31.3	31.1	31.4	31.8	32.8	33.8	34.6	34.6	35.4	34.6	35.5	34.2	34.4	33.8	33.7‡	34.9	38.8	38.3	37.6	38.7	38.3	38.5	37.4	-1.1
Marijuana/Hashish																															
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	22.0	20.3	20.4	19.2	17.5	16.3	16.5	15.7	14.2	14.6	15.7	17.3	16.4	15.2	16.5	15.6	15.5	12.8	13.5	13.9	15.2	15.2	+1.3
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	40.9	40.3	40.1	38.7	36.4	35.1	34.1	31.8	31.0	29.9	32.3	33.4	34.5	33.8	35.8	33.7	31.1	29.7	30.7	32.6	34.0	34.0	+1.5
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	46.1	45.7	44.8	42.3	41.8	42.6	42.0	43.8	45.5	45.2	45.5	44.4	44.7	44.5	45.0	43.6	43.7	43.7	+0.1
College Students	46.3	44.1	42.0	42.2	41.7	45.1	46.1	49.9	50.8	51.2	51.0	49.5	50.7	49.1	49.1	46.9	47.5	46.8	47.5	46.8	46.6	49.1	47.7	48.5	50.4	51.0	50.5	52.4	54.7	55.4	+0.8
Young Adults	60.6	58.5	57.8	55.7	55.5	55.2	55.2	55.5	55.8	55.5	56.0	56.7	56.9	57.4	57.0	57.1	57.5	57.2	57.3	57.1	57.4	57.5	57.9	58.2	59.8	59.9	60.9	61.4	63.5	63.9	+0.5
Inhalants [3,4]																															
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	19.7	17.9	17.1	15.2	15.8	17.3	17.1	16.1	15.6	15.7	14.9	14.5	13.1	11.8	10.8	10.8	9.4	7.7	8.9	8.7	9.5	9.5	+0.8
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	17.0	16.6	15.2	13.5	12.7	12.4	13.1	13.3	13.6	12.8	12.3	12.0	10.1	9.9	8.7	8.7	7.2	6.6	6.1	6.5	6.8	6.8	+0.3
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	11.2	10.9	11.4	11.1	10.5	9.9	9.5	9.0	8.1	7.9	6.9	6.5	5.7	5.0	4.9	4.4	5.3	5.3	+0.9 s
College Students	14.4	14.2	14.8	12.0	13.8	11.4	12.4	12.8	12.4	12.9	9.6	7.7	9.7	8.5	7.1	7.4	6.3	4.9	6.9	5.5	3.7	5.7	4.3	3.5	3.1	3.2	3.4	3.0	4.6	4.5	-0.1
Young Adults	12.9	13.0	13.5	12.7	14.1	14.0	13.8	14.2	14.3	13.9	12.9	12.5	12.4	11.8	10.9	11.5	9.5	10.3	9.4	8.5	7.7	7.5	7.3	7.4	6.8	6.5	5.6	6.3	7.1	6.9	-0.2

(Table continued on next page.)

TABLE A-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Hallucinogens [2,6]																															
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	4.8	4.6‡	5.2	4.1	4.0	3.5	3.8	3.4	3.1	3.3	3.0	3.4	3.3	2.8	2.5	2.0	2.0	1.9	1.9	2.2	2.4	2.4	+0.2
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	9.7	8.9‡	8.9	7.8	6.9	6.4	5.8	6.1	6.4	5.5	6.1	6.1	6.0	5.2	5.4	5.0	4.6	4.4	4.2	3.9	4.7	4.7	+0.8
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0‡	14.7	12.0	10.6	9.7	8.8	8.3	8.4	8.7	7.4	8.6	8.3	7.5	7.6	6.3	6.4	6.7	6.7	6.6	6.9	6.9	+0.3
College Students	11.3	12.0	11.8	10.0	13.0	12.6	13.8	15.2	14.8	14.4‡	14.8	13.6	14.5	12.0	11.0	10.6	9.1	8.5	8.0	7.8	7.4	7.6	7.8	7.6	6.5	7.7	7.2	8.5	9.1	11.2	+2.1
Young Adults	15.6	15.9	15.2	15.0	16.4	16.7	16.9	17.6	18.0	18.1‡	18.4	19.6	19.5	19.3	18.1	18.0	16.9	16.1	15.7	15.0	14.1	13.1	13.1	12.8	12.4	12.7	13.6	14.9	14.8	17.3	+2.4 ss
LSD [2]																															
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	4.1	3.9	3.4	2.5	2.1	1.8	1.9	1.6	1.6	1.9	1.7	1.8	1.7	1.3	1.4	1.1	1.3	1.2	1.3	1.4	1.6	1.6	+0.2
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	8.5	7.6	6.3	5.0	3.5	2.8	2.5	2.7	3.0	2.6	3.0	3.0	2.8	2.6	2.7	2.6	3.0	3.2	3.0	2.8	3.6	3.6	+0.7 s
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	5.9	4.6	3.5	3.3	3.4	4.0	3.1	4.0	4.0	3.8	3.9	3.7	4.3	4.9	5.0	5.1	5.6	5.6	+0.5
College Students	9.6	10.6	10.6	9.2	11.5	10.8	11.7	13.1	12.7	11.8	12.2	8.6	8.7	5.6	3.7	3.5	3.3	4.3	3.3	4.0	3.7	3.1	4.4	4.5	4.8	5.1	5.3	6.9	6.5	9.0	+2.4
Young Adults	13.1	13.7	13.1	13.4	14.7	15.1	15.1	15.7	16.1	16.2	16.0	15.3	14.8	13.7	12.1	11.4	10.7	9.7	8.9	8.2	7.2	6.9	6.8	6.8	7.0	8.1	8.6	10.5	10.5	12.5	+2.0 ss
Hallucinogens other than LSD [2]																															
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	2.4	2.3‡	3.9	3.3	3.2	3.0	3.3	2.8	2.6	2.5	2.4	2.7	2.8	2.3	1.9	1.5	1.2	1.3	1.2	1.5	1.7	1.7	+0.2
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	4.7	4.8‡	6.6	6.3	5.9	5.8	5.2	5.5	5.7	4.8	5.4	5.3	5.2	4.5	4.4	4.1	3.3	3.1	2.9	2.7	3.3	3.3	+0.6
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9‡	10.4	9.2	9.0	8.7	8.1	7.8	7.7	7.8	6.8	7.7	7.3	6.6	6.4	5.1	4.8	4.7	4.8	4.5	4.3	4.3	-0.1
College Students	6.0	5.7	5.4	4.4	6.5	6.5	7.5	8.7	8.8	8.2‡	10.7	11.0	12.8	10.1	10.6	10.1	8.5	8.2	7.8	7.1	6.9	7.2	6.8	6.8	5.1	6.6	5.0	5.0	6.9	7.8	+0.8
Young Adults	8.8	8.5	7.8	7.4	8.3	8.2	8.7	9.5	9.5	9.7‡	12.0	15.2	16.0	15.4	15.5	15.5	14.7	14.0	14.2	13.4	12.9	11.9	12.0	11.6	11.2	11.1	11.6	11.9	12.4	13.8	+1.4
PCP [7]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	2.5	1.6	2.4	2.2	2.1	1.8	1.7	1.8	2.3	1.6	1.3	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MDMA (Ecstasy, Molly) [8]																															
8th Grade, original	—	—	—	—	—	3.4	3.2	2.7	2.7	4.3	5.2	4.3	3.2	2.8	2.8	2.5	2.3	2.4	2.2	3.3	2.6	2.0	1.8	1.4	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.3	1.7	1.5	1.6	1.7	1.7	+0.1
10th Grade, original	—	—	—	—	—	5.6	5.7	5.1	6.0	7.3	8.0	6.6	5.4	4.3	4.0	4.5	5.2	4.3	5.5	6.4	6.6	5.0	5.7	3.7	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	3.8	2.8	2.8	2.4	3.2	3.2	+0.8 s
12th Grade, original	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	8.3	7.5	5.4	6.5	6.5	6.2	6.5	7.3	8.0	7.2	7.1	5.6	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	5.9	4.9	4.9	4.1	3.3	3.3	
College Students																															
Original	2.0	2.9	2.3	2.1	3.1	4.3	4.7	6.8	8.4	13.1	14.7	12.7	12.9	10.2	8.3	6.9	5.4	6.2	6.5	6.2	6.8	8.7	8.1	8.2	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	8.9	8.4	5.3	7.6	7.0	6.6	-0.4
Young Adults																															
Original	3.0	3.6	3.6	3.5	4.6	5.2	5.1	7.0	7.0	11.1	12.2	13.5	14.3	15.1	14.5	14.7	13.6	14.1	13.2	13.5	12.2	12.3	12.1	12.0	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.8	13.6	12.7	13.1	13.4	14.1	14.1	0.0

(Table continued on next page.)

TABLE A-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Cocaine																															
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	4.7	4.5	4.3	3.6	3.6	3.4	3.7	3.4	3.1	3.0	2.6	2.6	2.2	1.9	1.7	1.8	1.6	1.4	1.3	1.4	1.2	1.2	-0.2
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	7.7	6.9	5.7	6.1	5.1	5.4	5.2	4.8	5.3	4.5	4.6	3.7	3.3	3.3	3.3	2.6	2.7	2.1	2.1	2.6	2.5	2.5	-0.1
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	7.7	8.1	8.0	8.5	7.8	7.2	6.0	5.5	5.2	4.9	4.5	4.6	4.0	3.7	4.2	3.9	3.8	3.8	-0.1
College Students	9.4	7.9	6.3	5.0	5.5	5.0	5.6	8.1	8.4	9.1	8.6	8.2	9.2	9.5	8.8	7.7	8.5	7.2	8.1	6.6	5.5	5.2	5.1	6.2	6.1	6.0	7.1	8.5	8.8	5.9	-2.8 s
Young Adults	22.2	21.1	18.0	16.7	16.1	15.0	13.8	13.9	13.8	13.3	13.4	13.7	14.8	14.9	14.5	15.5	15.0	15.4	14.8	14.6	13.1	13.0	13.0	12.6	13.1	12.9	14.0	14.1	14.6	14.8	+0.1
Crack [9]																															
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	3.1	3.1	3.0	2.5	2.5	2.4	2.4	2.3	2.1	2.0	1.7	1.5	1.5	1.0	1.2	1.2	1.0	0.9	0.8	0.9	0.9	0.9	0.0
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	4.0	3.7	3.1	3.6	2.7	2.6	2.5	2.2	2.3	2.0	2.1	1.8	1.6	1.4	1.5	1.0	1.1	0.8	0.8	1.0	0.9	0.9	0.0
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	3.6	3.9	3.5	3.5	3.2	2.8	2.4	2.4	1.9	2.1	1.8	1.8	1.7	1.4	1.7	1.5	1.7	1.7	+0.1
College Students	1.5	1.7	1.3	1.0	1.8	1.2	1.4	2.2	2.4	2.5	2.0	1.9	3.1	2.0	1.7	2.3	1.3	1.4	1.0	1.2	0.8	0.7	0.7	1.4	0.5	0.8	0.6	0.9	0.0	0.6	+0.6
Young Adults	4.7	5.1	4.2	4.6	4.4	4.5	4.1	4.1	4.5	4.6	4.5	4.4	4.7	4.2	4.4	4.3	3.9	4.4	3.6	3.8	3.1	2.8	2.8	2.5	2.1	2.3	2.3	2.2	1.1	2.0	+1.0
Cocaine other than Crack [10]																															
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	3.8	3.5	3.3	2.8	2.7	2.6	2.9	2.7	2.6	2.4	2.1	2.1	1.8	1.6	1.4	1.4	1.3	1.1	1.0	1.2	1.0	1.0	-0.2
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	6.8	6.0	5.0	5.2	4.5	4.8	4.6	4.3	4.8	4.0	4.1	3.4	3.0	3.0	2.9	2.2	2.3	1.9	1.9	2.4	2.3	2.3	-0.1
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	6.7	7.3	7.1	7.9	6.8	6.5	5.3	5.1	4.9	4.4	4.2	4.1	3.4	3.3	3.5	3.3	3.2	3.2	-0.1
College Students	9.0	7.6	6.3	4.6	5.2	4.6	5.0	7.4	7.8	8.1	8.3	8.6	8.5	9.3	8.1	6.2	8.0	7.1	7.9	6.7	5.4	5.1	5.2	6.2	6.4	6.5	6.1	6.7	6.1	5.3	-0.8
Young Adults	21.0	20.0	16.5	15.3	14.6	14.0	12.6	12.9	12.8	12.3	12.4	13.0	13.8	14.2	13.4	14.8	14.3	14.5	14.2	13.8	12.6	12.8	12.6	12.2	12.5	12.9	13.9	13.3	11.5	11.1	-0.4
Heroin [11,12]																															
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.4	1.3	1.3	1.2	0.8	1.0	0.9	0.5	0.5	0.7	0.6	0.7	0.7	+0.1
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	1.5	1.5	1.5	1.4	1.5	1.2	1.5	1.3	1.2	1.1	1.0	0.9	0.7	0.6	0.4	0.4	0.4	0.4	+0.1
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	1.0	1.0	0.8	0.7	0.7	0.8	0.6	0.6	-0.2
College Students	0.5	0.5	0.6	0.1	0.6	0.7	0.9	1.7	0.9	1.7	1.2	1.0	1.0	0.9	0.5	0.7	0.5	0.7	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.5	0.1	0.1	0.3	0.4	+0.1
Young Adults	1.0	1.0	0.9	0.9	1.2	1.4	1.4	1.5	1.6	1.8	1.9	1.7	1.8	1.8	1.9	2.0	1.7	2.0	1.9	2.0	1.8	1.7	1.7	1.5	1.6	1.7	1.6	1.6	1.3	1.4	+0.1
With a Needle [12]																															
8th Grade	—	—	—	—	1.5	1.6	1.3	1.4	1.6	1.1	1.2	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.6	0.6	0.8	0.3	0.3	0.4	0.4	0.5	0.5	+0.1
10th Grade	—	—	—	—	1.0	1.1	1.1	1.2	1.3	1.0	0.8	1.0	0.9	0.8	0.8	0.9	0.9	0.7	0.9	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.3	0.2	0.3	0.3	+0.1
12th Grade	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.9	0.8	0.7	0.7	0.6	1.1	0.9	0.7	0.7	0.8	0.6	0.5	0.4	0.5	0.4	0.4	-0.1
College Students	—	—	—	—	0.4	0.1	0.2	0.5	0.8	0.7	0.2	0.3	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1	0.3	0.2	0.1	0.0	0.3	0.0	0.0	0.2	0.3	0.5	+0.2
Young Adults	—	—	—	—	0.3	0.3	0.3	0.3	0.5	0.4	0.5	0.4	0.4	0.4	0.7	0.5	0.5	0.5	0.7	0.8	0.7	0.7	0.9	0.6	0.8	0.8	0.8	0.6	0.7	0.6	-0.1
Without a Needle [12]																															
8th Grade	—	—	—	—	1.5	1.6	1.4	1.5	1.4	1.3	1.1	1.0	1.1	1.0	0.9	0.9	0.7	0.9	0.8	0.7	0.7	0.5	0.5	0.4	0.3	0.4	0.5	0.3	0.4	0.4	0.0
10th Grade	—	—	—	—	1.1	1.7	1.7	1.7	1.6	1.7	1.3	1.3	1.0	1.1	1.1	1.0	1.1	0.8	1.0	0.9	0.8	0.8	0.7	0.5	0.4	0.3	0.3	0.2	0.3	0.3	+0.1
12th Grade	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	1.8	1.4	1.3	1.1	1.4	1.1	0.9	1.4	1.3	0.8	0.9	0.7	0.7	0.6	0.4	0.6	0.4	0.4	-0.1
College Students	—	—	—	—	0.5	1.0	1.2	2.1	1.0	2.5	1.3	1.2	1.1	1.0	0.3	0.8	0.4	0.7	0.4	0.4	0.4	0.5	0.8	0.1	0.4	0.2	0.1	0.2	0.3	0.0	-0.3
Young Adults	—	—	—	—	0.9	1.5	1.5	1.6	1.8	2.0	2.0	1.7	2.0	2.0	1.9	2.5	1.9	2.3	2.2	2.0	1.8	1.8	1.8	1.4	2.0	1.6	1.6	1.5	1.4	1.5	+0.2

(Table continued on next page.)

TABLE A-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Narcotics other than Heroin [13,14]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9‡	13.5	13.2	13.5	12.8	13.4	13.1	13.2	13.2	13.0	13.0	12.2	11.1	9.5	8.4	7.8	6.8	6.0	5.3	5.3	-0.8
College Students	7.3	7.3	6.2	5.1	7.2	5.7	8.2	8.7	8.7	8.9	11.0‡	12.2	14.2	13.8	14.4	14.6	14.1	12.4	14.0	12.2	12.4	10.3	10.8	9.9	6.6	7.4	6.8	6.6	5.8	4.1	-1.7
Young Adults	9.3	8.7	8.0	8.0	9.4	8.8	9.4	9.2	9.4	10.1	11.3‡	12.8	16.2	16.7	18.0	18.8	18.7	19.7	19.1	19.6	18.7	18.5	18.2	17.6	16.5	15.4	14.9	13.9	12.6	10.9	-1.7 ss
Amphetamines [13,15]																															
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	10.7	9.9	10.2	8.7	8.4	7.5	7.4	7.3	6.5	6.8	6.0	5.7	5.2	4.5‡	6.9	6.7	6.8	5.7	5.7	5.9	6.8	6.8	+0.9
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	15.7	15.7	16.0	14.9	13.1	11.9	11.1	11.2	11.1	9.0	10.3	10.6	9.0	8.9‡	11.2	10.6	9.7	8.8	8.2	8.6	8.2	8.2	-0.4
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	14.4	15.0	13.1	12.4	11.4	10.5	9.9	11.1	12.2	12.0‡	13.8	12.1	10.8	10.0	9.2	8.6	7.7	7.7	-1.0
College Students	13.0	10.5	10.1	9.2	10.7	9.5	10.6	10.6	11.9	12.3	12.4	11.9	12.3	12.7	12.3	10.7	11.2	9.1	11.8	12.1	13.4	14.4‡	16.1	15.0	13.9	13.6	12.6	13.2	13.5	10.6	-2.9 s
Young Adults	22.9	21.2	19.4	17.9	18.2	16.7	15.8	15.0	14.6	15.0	14.9	14.7	15.0	15.3	15.0	15.5	15.1	14.7	14.9	16.3	16.4	17.5	18.5	19.5	19.3	19.6	19.2	19.6	20.1	19.7	-0.4
Methamphetamine [16,17]																															
8th Grade	—	—	—	—	—	—	—	—	4.5	4.2	4.4	3.5	3.9	2.5	3.1	2.7	1.8	2.3	1.6	1.8	1.3	1.3	1.4	1.0	0.8	0.6	0.7	0.7	0.9	0.9	+0.2
10th Grade	—	—	—	—	—	—	—	—	7.3	6.9	6.4	6.1	5.2	5.3	4.1	3.2	2.8	2.4	2.8	2.5	2.1	1.8	1.6	1.4	1.3	0.7	0.9	0.8	0.7	0.7	-0.1
12th Grade	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	6.2	6.2	4.5	4.4	3.0	2.8	2.4	2.3	2.1	1.7	1.5	1.9	1.0	1.2	1.1	0.7	0.8	0.8	+0.1
College Students	—	—	—	—	—	—	—	—	7.1	5.1	5.3	5.0	5.8	5.2	4.1	2.9	1.9	1.9	1.0	1.1	0.6	0.3	0.9	0.7	0.8	0.6	0.6	1.0	1.1	0.2	-1.0
Young Adults	—	—	—	—	—	—	—	—	9.2	9.1	8.9	9.4	9.0	9.0	8.8	7.3	7.1	6.8	5.6	5.3	3.9	4.2	3.4	3.3	2.9	2.6	3.0	3.2	2.4	2.4	0.0
Crystal Methamphetamine (Ice) [17]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	3.9	4.0	4.0	3.4	3.4	2.8	2.1	1.8	2.1	1.7	2.0	1.3	1.2	1.4	1.5	1.1	1.3	1.3	+0.1
College Students	1.3	0.6	1.6	1.3	1.0	0.8	1.6	2.2	2.8	1.3	2.3	2.0	2.9	2.2	2.4	1.7	1.3	1.1	0.7	0.8	0.2	0.6	0.0	0.3	0.3	0.6	0.4	0.8	—	—	—
Young Adults	2.6	2.1	2.6	2.4	2.2	3.1	2.5	3.1	3.3	3.5	3.9	4.1	4.5	4.8	4.6	4.7	4.0	3.7	3.4	3.0	3.1	3.1	3.1	2.5	2.7	2.0	2.2	1.8	1.8	—	—
Sedatives (Barbiturates) [13,18]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	8.8‡	9.9	10.5	10.2	9.3	8.5	8.2	7.5	7.0	6.9	7.5	6.8	5.9	5.2	4.5	4.2	4.2	4.2	0.0
College Students	3.5	3.8	3.5	3.2	4.0	4.6	5.2	5.7	6.7	6.9	6.0	5.9	5.7	7.2	8.5	6.3	5.9	6.4	6.0	5.3	3.6	3.5‡	5.4	5.9	4.4	3.3	3.9	3.3	3.7	2.8	-1.0
Young Adults	8.4	7.9	6.7	6.6	7.5	7.2	6.9	7.1	7.3	7.8	7.7	7.8	8.3	9.1	10.2	9.7	9.9	10.7	9.8	9.0	8.0	7.4	9.6	9.7	8.9	7.7	7.3	8.3	7.8	7.3	-0.5

(Table continued on next page.)

TABLE A-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Tranquilizers [2,13]																															
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	4.4	4.4‡	5.0	4.3	4.4	4.0	4.1	4.3	3.9	3.9	3.9	4.4	3.4	3.0	2.9	2.9	3.0	3.0	3.4	3.5	4.0	4.0	+0.5
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	7.9	8.0‡	9.2	8.8	7.8	7.3	7.1	7.2	7.4	6.8	7.0	7.3	6.8	6.3	5.5	5.8	5.8	6.1	6.0	6.0	5.7	5.7	-0.3
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9‡	10.3	11.4	10.2	10.6	9.9	10.3	9.5	8.9	9.3	8.5	8.7	8.5	7.7	7.4	6.9	7.6	7.5	6.6	6.1	6.1	-0.5
College Students	6.8	6.9	6.3	4.4	5.4	5.3	6.9	7.7	8.2	8.8‡	9.7	10.7	11.0	10.6	11.9	10.0	9.1	8.6	9.2	8.1	7.1	6.4	7.8	6.9	7.8	6.5	6.7	7.4	7.4	4.9	-2.5 s
Young Adults	12.6	12.0	11.0	10.3	10.8	10.3	9.4	10.1	9.8	10.8‡	11.8	13.4	13.5	14.3	14.8	15.2	14.6	16.1	14.7	15.3	14.1	13.9	14.2	13.6	13.8	13.1	13.4	12.6	12.1	11.7	-0.4
Any Prescription Drug [15,20]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.0	23.9	22.2	21.5	20.9	21.6	21.7	21.2‡	22.2	19.9	18.3	18.0	16.5	15.5	14.6	14.6	-0.9
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol [21]																															
8th Grade	—	—	—	—	—	1.5	1.1	1.4	1.3	1.0	1.1	0.8	1.0	1.0	1.1	1.0	1.0	0.7	0.7	0.9	2.0	1.0	0.7	0.6	0.8	0.9	0.6	0.7	0.6	0.6	0.0
10th Grade	—	—	—	—	—	1.5	1.7	2.0	1.8	1.3	1.5	1.3	1.0	1.2	1.0	0.8	1.3	0.9	0.7	1.4	1.2	0.8	1.1	1.0	0.5	1.0	0.7	0.5	0.9	0.9	+0.4
12th Grade	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [22]																															
Any Use																															
8th Grade	70.1	69.3‡	55.7	55.8	54.5	55.3	53.8	52.5	52.1	51.7	50.5	47.0	45.6	43.9	41.0	40.5	38.9	38.9	36.6	35.8	33.1	29.5	27.8	26.8	26.1	22.8	23.1	23.5	24.5	24.5	+1.0
10th Grade	83.8	82.3‡	71.6	71.1	70.5	71.8	72.0	69.8	70.6	71.4	70.1	66.9	66.0	64.2	63.2	61.5	61.7	58.3	59.1	58.2	56.0	54.0	52.1	49.3	47.1	43.4	42.2	43.0	43.1	43.1	+0.1
12th Grade	88.0	87.5‡	80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	76.6	76.8	75.1	72.7	72.2	71.9	72.3	71.0	70.0	69.4	68.2	66.0	64.0	61.2	61.5	58.5	58.5	58.5	0.0
College Students	93.6	91.8	89.3	88.2	88.5	88.4	87.3	88.5	88.0	86.6	86.1	86.0	86.2	84.6	86.6	84.7	83.1	85.3	82.6	82.3	80.5	81.0	78.0	79.4	81.4	81.3	79.1	77.4	79.2	79.2	0.0
Young Adults	94.3	93.7	92.1	91.5	91.9	91.7	91.1	91.1	90.9	91.2	90.3	90.6	89.7	89.9	89.7	89.5	88.7	89.2	88.6	88.5	88.1	87.2	87.2	87.3	87.1	87.5	86.3	86.1	85.9	86.5	+0.6
Been Drunk [23]																															
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	24.8	25.1	23.4	21.3	20.3	19.9	19.5	19.5	17.9	18.0	17.4	16.3	14.8	12.8	12.2	10.8	10.9	8.6	9.2	9.2	10.1	10.1	+1.0
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	48.9	49.3	48.2	44.0	42.4	42.3	42.1	41.4	41.2	37.2	38.6	36.9	35.9	34.6	33.5	30.2	28.6	26.0	25.1	26.2	25.5	25.5	-0.7
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	58.1	60.3	57.5	56.4	55.1	54.7	56.5	54.1	51.0	54.2	52.3	49.8	46.7	46.3	45.3	42.9	40.8	40.8	-2.1
College Students	79.6	76.8	76.4	74.4	76.6	76.2	77.0	76.8	75.1	74.7	76.1	75.1	74.9	73.4	72.9	73.1	71.6	72.5	69.1	70.5	67.9	70.0	66.5	68.8	68.6	66.7	64.8	66.8	65.5	65.1	-0.4
Young Adults	84.1	81.9	82.4	81.1	83.0	81.7	82.6	80.8	82.3	81.7	82.3	81.8	81.9	80.6	80.8	81.5	81.2	81.4	79.7	80.3	80.1	80.4	79.1	79.8	78.3	77.6	76.3	77.8	76.6	76.8	+0.2

(Table continued on next page.)

TABLE A-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Flavored Alcoholic Beverages [1,15]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	37.9	35.5	35.5	34.0	32.8	29.4	30.0	27.0	23.5	21.9	19.2	19.3	16.3	16.0	18.0	15.1	15.1	-3.0 s
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	58.6	58.8	58.1	55.7	53.5	51.4	51.3	48.4	46.7	44.9	42.3	38.7	33.3	34.8	35.9	33.2	33.2	-2.7
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	71.0	73.6	69.9	68.4	65.5	67.4	62.6	62.4	60.5	58.9	57.5	55.6	53.6	51.2	50.4	44.7	44.7	-5.7 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	79.0	84.5	80.9	80.6	78.6	78.1	77.4	76.7	76.6	67.5	72.7	74.8	76.1	72.4	71.0	72.2	90.0	+17.8 sss
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	83.9	84.2	84.4	83.9	83.2	84.2	82.4	83.3	82.5	81.6	81.5	82.6	81.5	80.4	80.6	82.5	88.5	+6.0 ss
Cigarettes																															
Any Use																															
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	36.6	31.4	28.4	27.9	25.9	24.6	22.1	20.5	20.1	20.0	18.4	15.5	14.8	13.5	13.3	9.8	9.4	9.1	10.0	10.0	+1.0
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	52.8	47.4	43.0	40.7	38.9	36.1	34.6	31.7	32.7	33.0	30.4	27.7	25.7	22.6	19.9	17.5	15.9	16.0	14.2	14.2	-1.7
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0	47.1	46.2	44.7	43.6	42.2	40.0	39.5	38.1	34.4	31.1	28.3	26.6	23.8	22.3	22.3	-1.5
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco [24]																															
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	11.3	11.0	10.1	10.2	9.1	9.8	9.6	9.9	9.7	8.1	7.9	8.0	8.6	6.9	6.2	6.4	7.1	7.1	+0.8
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	14.6	13.8	14.5	15.0	15.1	12.2	15.2	16.8	15.6	15.4	14.0	13.6	12.3	10.2	9.1	10.0	9.2	9.2	-0.8
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5	15.2	15.1	15.6	16.3	17.6	16.9	17.4	17.2	15.1	13.2	14.2	11.0	10.1	9.8	9.8	-0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping [36,37]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.7	17.5‡	18.5	21.5	24.3	24.3	+2.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.8	29.0‡	30.9	36.9	41.0	41.0	+4.1 s
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.5	33.8‡	35.8	42.5	45.6	45.6	+3.0
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.0	26.8‡	36.0	39.9	49.4	49.3	-0.1
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.1	26.1‡	31.7	36.3	42.3	43.2	+0.9
Vaping Nicotine [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.6	13.5	20.3	20.3	+6.9 sss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.4	28.6	36.3	36.3	+7.7 sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.0	34.0	40.8	40.8	+6.8 ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5	32.4	41.9	47.3	+5.4 s
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	26.4	34.8	39.6	+4.8 sss

(Table continued on next page.)

TABLE A-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Vaping Marijuana [30]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	5.5	9.0	9.0	+3.5 sss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.8	14.2	21.8	21.8	+7.6 sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.9	15.6	23.7	23.7	+8.1 sss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.4	23.8	29.4	34.6	+5.3 s
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15.8	21.3	27.4	31.0	+3.5 ss
Vaping Just Flavoring [30]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.0	19.4	18.9	18.9	-0.5
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.5	31.7	28.3	28.3	-3.4 s
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.7	34.1	29.0	29.0	-5.0 ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.7	27.1	28.7	32.8	+4.1
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.1	20.7	20.0	26.1	6.1 sss
Steroids [25,26]																															
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	2.7	3.0	2.8	2.5	2.5	1.9	1.7	1.6	1.5	1.4	1.3	1.1	1.2	1.2	1.1	1.0	1.0	0.9	1.1	1.1	1.5	1.5	+0.4 s
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	2.7	3.5	3.5	3.5	3.0	2.4	2.0	1.8	1.8	1.4	1.3	1.6	1.4	1.3	1.3	1.4	1.2	1.3	1.1	1.2	1.6	1.6	+0.4 s
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	3.5	3.4	2.6	2.7	2.2	2.2	2.2	2.0	1.8	1.8	2.1	1.9	2.3	1.6	1.6	1.6	1.6	1.6	0.0
College Students	1.4	1.7	1.9	0.5	0.8	0.6	1.6	0.9	1.3	0.6	1.5	1.2	1.2	1.6	1.0	1.9	0.6	1.6	1.3	0.7	1.1	0.4	0.8	0.9	0.6	0.8	1.2	0.3	—	—	—
Young Adults	1.5	1.9	1.8	1.2	1.6	1.6	1.3	1.5	2.0	1.4	1.3	1.9	1.9	1.8	1.6	1.7	1.9	1.9	2.0	1.7	1.3	1.8	1.3	1.9	1.8	1.4	1.3	1.3	—	—	—
Previously surveyed drugs that have been dropped																															
Nitrites [5]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	1.6	1.3	1.1	1.2	1.2	0.6	1.1	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [13,19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	1.0	1.3	1.3	1.2	1.0	0.8	0.7	0.4	0.6	0.8	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table A-4

TABLE A-2
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Any Illicit Drug [1]																															
8th Grade	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	16.1	15.2	15.5	14.8	13.2	14.1	14.5	16.0	14.7	13.4‡	15.2	14.6	14.8	12.0	12.9	13.4	14.8	14.8	+1.5
10th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	32.0	31.1	29.8	28.7	28.1	26.9	29.4	30.2	31.1	30.1‡	32.1	29.9	27.9	26.8	27.8	29.9	31.0	31.0	+1.1
12th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	39.3	38.8	38.4	36.5	35.9	36.6	36.5	38.3	40.0	39.7‡	40.1	38.7	38.6	38.3	39.9	38.8	38.0	38.0	-0.8
College Students	29.2	30.6	30.6	31.4	33.5	34.2	34.1	37.8	36.9	36.1	37.9	37.0	36.5	36.2	36.6	33.9	35.0	35.2	36.0	35.0	36.3	37.3‡	40.5	38.6	41.4	42.8	42.7	45.4	46.5	45.6	-0.9
Young Adults	25.8	26.4	26.3	26.5	27.5	27.4	27.4	27.3	27.2	27.6	29.1	30.6	31.0	31.8	31.6	31.1	30.8	32.9	32.5	32.1	33.3	32.6‡	34.7	36.6	37.4	38.5	40.5	42.6	44.1	45.4	+1.3
Any Illicit Drug other than Marijuana [1,2]																															
8th Grade	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2‡	10.8	8.8	8.8	7.9	8.1	7.7	7.0	7.4	7.0	7.1	6.4	5.5‡	6.3	6.4	6.3	5.4	5.8	6.1	6.5	6.5	+0.4
10th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7‡	17.9	15.7	13.8	13.5	12.9	12.7	13.1	11.3	12.2	12.1	11.2	10.8‡	11.2	11.2	10.5	9.8	9.4	9.6	9.1	9.1	-0.4
12th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4‡	21.6	20.9	19.8	20.5	19.7	19.2	18.5	18.3	17.0	17.3	17.6	17.0‡	17.8	15.9	15.2	14.3	13.3	12.4	11.5	11.5	-1.0
College Students	13.2	13.1	12.5	12.2	15.9	12.8	15.8	14.0	15.4	15.6‡	16.4	16.6	17.9	18.6	18.5	18.1	17.3	15.3	16.9	17.1	16.8	17.1‡	19.3	20.8	18.5	19.7	18.4	18.2	16.8	16.2	-0.5
Young Adults	13.6	13.0	11.8	12.3	12.8	12.4	13.0	12.1	12.3	12.9‡	13.9	15.5	17.0	17.6	18.1	17.9	17.2	18.5	17.4	17.9	17.0	16.7‡	17.7	21.0	18.9	19.4	19.9	19.3	19.1	19.1	+0.1
Marijuana/Hashish																															
8th Grade	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	12.8	11.8	12.2	11.7	10.3	10.9	11.8	13.7	12.5	11.4	12.7	11.7	11.8	9.4	10.1	10.5	11.8	11.8	+1.3
10th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	28.2	27.5	26.6	25.2	24.6	23.9	26.7	27.5	28.8	28.0	29.8	27.3	25.4	23.9	25.5	27.5	28.8	28.8	+1.4
12th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	34.9	34.3	33.6	31.5	31.7	32.4	32.8	34.8	36.4	36.4	36.4	35.1	34.9	35.6	37.1	35.9	35.7	35.7	-0.2
College Students	26.5	27.7	27.9	29.3	31.2	33.1	31.6	35.9	35.2	34.0	35.6	34.7	33.7	33.3	33.3	30.2	31.8	32.3	32.8	32.7	33.2	34.9	35.5	34.4	37.9	39.3	38.3	42.6	43.0	43.9	+0.9
Young Adults	22.9	23.5	23.6	23.8	24.3	25.0	24.6	24.7	24.5	24.9	26.0	27.4	27.0	27.0	26.7	26.5	26.7	27.6	28.3	27.5	29.4	28.6	30.6	30.4	32.1	33.8	36.3	38.3	39.9	42.0	+2.0 s
Synthetic Marijuana [16,17]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.4	4.0	3.3	3.1	2.7	2.0	1.6	2.7	2.7	+1.1 ss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	7.4	5.4	4.3	3.3	2.7	2.9	2.6	2.6	-0.3
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.3	7.9	5.8	5.2	3.5	3.7	3.5	3.3	3.3	-0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.5	5.3	2.3	0.9	1.5	1.3	0.5	1.6	1.8	0.5	-1.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	5.0	3.0	1.3	1.3	0.9	0.8	1.3	1.1	1.2	+0.1

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Inhalants [3,4]																															
8th Grade	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	8.7	9.6	9.5	9.1	8.3	8.9	8.1	8.1	7.0	6.2	5.2	5.3	4.6	3.8	4.7	4.6	4.7	4.7	+0.1
10th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	5.4	5.9	6.0	6.5	6.6	5.9	6.1	5.7	4.5	4.1	3.5	3.3	2.9	2.4	2.3	2.4	2.8	2.8	+0.4
12th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	3.9	4.2	5.0	4.5	3.7	3.8	3.4	3.6	3.2	2.9	2.5	1.9	1.9	1.7	1.5	1.6	1.9	1.9	+0.3
College Students	3.5	3.1	3.8	3.0	3.9	3.6	4.1	3.0	3.2	2.9	2.8	2.0	1.8	2.7	1.8	1.5	1.5	1.1	1.2	1.7	0.9	1.5	0.5	1.3	0.6	0.2	1.7	1.3	1.3	1.2	-0.1
Young Adults	1.5	1.5	1.6	1.6	2.0	1.7	1.9	1.7	1.7	1.6	1.4	1.5	1.2	1.5	1.3	1.2	0.8	1.3	0.8	1.2	0.8	1.0	0.5	1.0	0.8	0.8	0.7	0.8	1.3	1.2	-0.1
Hallucinogens [2,6]																															
8th Grade	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8‡	3.4	2.6	2.6	2.2	2.4	2.1	1.9	2.1	1.9	2.2	2.2	1.6	1.6	1.3	1.3	1.2	1.1	1.4	1.3	1.3	-0.1
10th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1‡	6.2	4.7	4.1	4.1	4.0	4.1	4.4	3.9	4.1	4.2	4.1	3.5	3.4	3.3	3.1	2.9	2.8	2.7	3.1	3.1	+0.4
12th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1‡	9.1	6.6	5.9	6.2	5.5	4.9	5.4	5.9	4.7	5.5	5.2	4.8	4.5	4.0	4.2	4.3	4.4	4.3	4.6	4.6	+0.3
College Students	6.3	6.8	6.0	6.2	8.2	6.9	7.7	7.2	7.8	6.7‡	7.5	6.3	7.4	5.9	5.0	5.6	4.9	5.1	4.7	4.9	4.1	4.5	4.5	4.0	4.3	4.5	4.1	5.1	5.3	8.6	+3.3 ss
Young Adults	3.3	3.9	3.5	3.7	4.6	4.5	4.8	4.2	4.4	4.3‡	4.4	4.3	4.6	4.2	4.1	3.7	3.4	3.7	3.7	3.9	3.4	3.4	3.7	3.9	4.0	4.6	4.3	5.3	5.1	7.6	+2.5 sss
LSD [2]																															
8th Grade	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	1.3	1.1	1.2	0.9	1.1	1.3	1.1	1.2	1.1	0.8	1.0	0.7	0.9	0.8	0.9	0.9	0.9	0.9	0.0
10th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	1.7	1.6	1.5	1.7	1.9	1.8	1.9	1.9	1.8	1.7	1.7	1.9	2.0	2.1	2.1	2.0	2.3	2.3	+0.3
12th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	1.9	2.2	1.8	1.7	2.1	2.7	1.9	2.6	2.7	2.4	2.2	2.5	2.9	3.0	3.3	3.2	3.6	3.6	+0.4
College Students	5.1	5.7	5.1	5.2	6.9	5.2	5.0	4.4	5.4	4.3	4.0	2.1	1.4	1.2	0.7	1.4	1.3	2.6	2.0	2.1	2.0	1.9	2.6	2.2	3.0	3.1	2.8	4.1	3.7	5.8	+2.1 s
Young Adults	2.7	3.3	2.9	3.0	3.8	3.6	3.5	2.8	3.2	2.9	2.7	1.7	1.0	0.8	0.8	1.1	1.0	1.3	1.4	1.3	1.6	1.4	1.8	2.0	2.4	3.0	2.9	3.7	3.5	4.7	+1.2 ss
Hallucinogens other than LSD [2]																															
8th Grade	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4‡	2.4	2.1	2.1	1.9	2.0	1.8	1.6	1.6	1.5	1.8	1.8	1.3	1.2	1.0	0.8	0.8	0.7	0.9	0.9	0.9	0.0
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1‡	4.3	4.0	3.6	3.7	3.5	3.7	3.8	3.3	3.5	3.5	3.5	3.0	2.7	2.6	1.9	2.0	1.8	1.7	2.1	2.1	+0.4
12th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4‡	5.9	5.4	5.4	5.6	5.0	4.6	4.8	5.0	4.2	4.8	4.3	4.0	3.7	3.0	2.9	2.7	2.9	2.7	2.7	2.7	0.0
College Students	3.1	2.6	2.7	2.8	4.0	4.1	4.9	4.4	4.5	4.4‡	5.5	5.8	7.1	5.6	5.0	5.4	4.7	4.4	4.1	4.4	3.4	3.9	3.7	3.2	3.0	3.4	2.5	2.4	3.3	5.8	+2.5 s
Young Adults	1.3	1.5	1.5	1.6	2.0	2.2	2.6	2.4	2.4	2.7‡	2.8	3.6	4.3	4.0	3.9	3.4	3.2	3.2	3.1	3.4	2.9	2.8	3.1	2.9	2.9	3.1	2.8	3.3	3.2	5.2	+2.0 sss
PCP [7]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	1.3	0.7	1.3	0.7	0.9	1.1	1.0	1.0	1.3	0.9	0.7	0.8	1.4	1.3	1.0	1.1	1.1	1.1	0.0
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	
MDMA (Ecstasy, Molly) [8]																																
8th Grade, original	—	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	2.1	1.7	1.7	1.4	1.5	1.7	1.3	2.4	1.7	1.1	1.1	0.9	—	—	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.4	1.0	0.9	1.1	1.1	1.1	+0.1	
10th Grade, original	—	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	3.0	2.4	2.6	2.8	3.5	2.9	3.7	4.7	4.5	3.0	3.6	2.3	—	—	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.8	2.4	1.8	1.7	1.4	1.7	1.7	+0.3	
12th Grade, original	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0	4.1	4.5	4.3	4.3	4.5	5.3	3.8	4.0	3.6	—	—	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	3.6	2.7	2.6	2.2	2.2	2.2	0.0	
College Students																																
Original	0.9	2.0	0.8	0.5	2.4	2.8	2.4	3.9	5.5	9.1	9.2	6.8	4.4	2.2	2.9	2.6	2.2	3.7	3.1	4.3	4.2	5.8	5.3	5.0	—	—	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	4.2	4.7	2.5	4.3	3.3	3.7	+0.4	
Young Adults																																
Original	0.7	0.8	0.6	0.5	1.2	1.3	1.8	2.2	2.7	5.4	6.0	5.6	4.0	3.1	2.9	2.9	2.3	3.1	2.9	3.1	3.4	3.8	3.8	4.2	—	—	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.8	4.2	4.8	3.5	4.0	3.6	4.5	+0.9	
Salvia [16,17]																																
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.6	1.4	1.2	0.6	0.7	0.9	0.4	0.6	0.8	0.8	+0.1	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	3.9	2.5	2.3	1.8	1.2	0.9	0.9	0.7	0.9	0.9	+0.2	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.5	5.9	4.4	3.4	1.8	1.9	1.8	1.5	0.9	0.7	0.7	-0.2	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.8	3.5	3.1	1.5	1.0	1.1	0.4	0.7	0.3	0.9	0.3	0.3	0.0	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.2	3.0	2.3	1.3	0.8	1.0	0.5	0.7	0.5	0.6	0.5	0.7	+0.1	
Cocaine																																
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	2.2	2.0	2.2	2.0	2.0	1.8	1.6	1.6	1.4	1.2	1.0	1.0	0.9	0.8	0.8	0.8	0.7	0.7	-0.1	
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	3.3	3.7	3.5	3.2	3.4	3.0	2.7	2.2	1.9	2.0	1.9	1.5	1.8	1.3	1.4	1.5	1.5	1.5	-0.1	
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	4.8	5.3	5.1	5.7	5.2	4.4	3.4	2.9	2.9	2.7	2.6	2.6	2.5	2.3	2.7	2.3	2.2	2.2	-0.1	
College Students	3.6	3.0	2.7	2.0	3.6	2.9	3.4	4.6	4.6	4.8	4.7	4.8	5.4	6.6	5.7	5.1	5.4	4.4	4.2	3.5	3.3	3.1	2.7	4.4	4.3	4.6	5.3	6.0	5.6	3.8	-1.9 s	
Young Adults	6.0	5.5	4.4	4.3	4.3	4.3	4.7	4.7	5.0	4.7	5.1	5.6	6.3	6.5	6.5	6.3	5.8	5.8	5.3	4.6	4.5	4.0	3.8	4.9	5.4	5.7	6.2	6.7	6.4	6.8	+0.4	
Crack [9]																																
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	1.6	1.3	1.4	1.3	1.3	1.1	1.1	1.0	0.9	0.6	0.6	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.0	
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	1.6	1.7	1.7	1.3	1.3	1.3	1.2	1.0	0.9	0.8	0.8	0.5	0.7	0.4	0.6	0.6	0.6	0.6	0.0	
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	2.2	2.3	1.9	2.1	1.9	1.6	1.3	1.4	1.0	1.2	1.1	1.1	1.1	0.8	1.0	0.9	1.0	1.0	+0.1	
College Students	0.5	0.4	0.6	0.5	1.1	0.6	0.4	1.0	0.9	0.9	0.9	0.4	1.3	1.3	0.8	1.0	0.6	0.5	0.3	0.4	0.3	0.3	0.3	0.8	0.2	0.4	0.3	0.7	0.0	0.0	0.0 ###	
Young Adults	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.3	1.1	1.2	1.0	1.0	1.2	1.2	1.0	0.9	0.9	0.7	0.5	0.6	0.5	0.3	0.4	0.4	0.6	0.6	0.5	0.3	0.7	+0.4	

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Cocaine other than Crack [10]																															
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	1.6	1.6	1.7	1.6	1.5	1.4	1.3	1.3	1.1	1.0	0.8	0.8	0.8	0.6	0.6	0.7	0.6	0.6	-0.1
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	2.8	3.3	3.0	2.9	3.1	2.6	2.3	1.9	1.7	1.8	1.6	1.3	1.5	1.1	1.2	1.4	1.4	1.4	0.0
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	4.2	4.7	4.5	5.2	4.5	4.0	3.0	2.6	2.6	2.4	2.4	2.4	2.1	2.0	2.3	2.0	1.9	1.9	-0.1
College Students	3.2	2.4	2.5	1.8	3.3	2.3	3.0	4.2	4.2	4.1	4.1	5.0	5.1	6.3	5.0	3.8	5.3	4.2	4.2	4.0	3.0	3.0	2.8	4.1	4.2	4.7	4.4	4.6	3.5	2.7	-0.8
Young Adults	5.4	4.9	3.7	3.6	3.7	3.9	4.2	4.3	4.5	4.2	4.6	5.5	5.9	6.0	6.0	5.7	5.4	5.4	5.0	4.6	4.1	3.9	3.7	4.7	5.0	5.8	5.8	5.9	5.3	4.7	-0.5
Heroin [11,12]																															
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	0.9	1.0	0.8	0.8	0.8	0.9	0.7	0.8	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.0
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	0.7	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.6	0.6	0.5	0.5	0.3	0.2	0.2	0.3	0.3	+0.1
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.7	0.7	0.9	0.8	0.6	0.6	0.6	0.5	0.3	0.4	0.4	0.4	0.4	0.0
College Students	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.6	0.2	0.5	0.4	0.1	0.2	0.4	0.3	0.3	0.2	0.3	0.4	0.2	0.1	0.1	0.3	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Young Adults	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.2	0.3	0.3	0.5	0.3	0.3	0.5	0.6	0.4	0.4	0.5	0.6	0.4	0.5	0.4	0.4	0.3	0.2	0.3	+0.1
With a Needle [12]																															
8th Grade	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.5	0.6	0.5	0.4	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.0
10th Grade	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.4	0.2	0.3	0.2	0.1	0.2	0.2	+0.1
12th Grade	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.7	0.6	0.4	0.4	0.5	0.3	0.3	0.2	0.3	0.3	0.3	-0.0
College Students	—	—	—	—	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.3	0.3	0.0	0.0	0.1	0.0	0.2	0.2	0.1	0.0	0.1	0.0	0.2	0.1	0.0	0.1	+0.1
Young Adults	—	—	—	—	0.1	0.2	0.1	0.2	0.1	0.0	0.2	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.0	0.0	0.1	+0.1
Without a Needle [12]																															
8th Grade	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.0
10th Grade	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.2	+0.1
12th Grade	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8	0.6	1.0	0.5	0.6	0.8	0.7	0.4	0.4	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.0
College Students	—	—	—	—	0.0	0.8	0.4	0.9	0.3	0.8	0.6	0.2	0.1	0.6	0.2	0.3	0.2	0.3	0.1	0.3	0.2	0.1	0.5	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.0
Young Adults	—	—	—	—	0.2	0.3	0.4	0.5	0.5	0.3	0.7	0.3	0.3	0.3	0.4	0.5	0.2	0.4	0.5	0.4	0.2	0.4	0.6	0.3	0.5	0.4	0.3	0.1	0.0	0.0	0.0
Narcotics other than Heroin [13,14]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7‡	9.4	9.3	9.5	9.0	9.0	9.2	9.1	9.2	8.7	8.7	7.9	7.1	6.1	5.4	4.8	4.2	3.4	2.7	2.7	-0.7 ss
College Students	2.7	2.7	2.5	2.4	3.8	3.1	4.2	4.2	4.3	4.5	5.7‡	7.4	8.7	8.2	8.4	8.8	7.7	6.5	7.6	7.2	6.2	5.4	5.4	4.8	3.3	3.8	3.1	2.7	1.5	1.3	-0.2
Young Adults	2.2	2.2	1.9	2.2	2.7	2.7	3.1	3.0	3.3	3.6	4.5‡	5.7	7.9	8.4	8.5	8.9	8.3	8.8	8.4	8.7	7.7	7.1	6.9	6.3	5.3	5.2	4.2	3.6	2.9	2.6	-0.3

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
OxyContin [13,16,27,28]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	1.3	1.7	1.7	1.8	2.6	1.8	2.1	2.0	2.1	1.8	1.6	2.0	1.0	0.8	0.9	0.8	0.8	1.2	1.2	+0.5
10th Grade	—	—	—	—	—	—	—	—	—	—	—	3.0	3.6	3.5	3.2	3.8	3.9	3.6	5.1	4.6	3.9	3.0	3.4	3.0	2.6	2.1	2.2	2.2	2.0	2.0	-0.1
12th Grade	—	—	—	—	—	—	—	—	—	—	—	4.0	4.5	5.0	5.5	4.3	5.2	4.7	4.9	5.1	4.9	4.3	3.6	3.3	3.7	3.4	2.7	2.3	1.7	1.7	-0.6
College Students	—	—	—	—	—	—	—	—	—	—	—	1.5	2.2	2.5	2.1	3.0	2.8	3.6	5.0	2.3	2.4	1.2	2.3	1.3	1.5	1.9	1.7	1.6	2.5	1.5	-1.0
Young Adults	—	—	—	—	—	—	—	—	—	—	—	1.7	2.3	2.8	2.9	3.0	2.6	3.6	4.6	3.2	2.7	2.1	2.6	2.6	2.5	2.2	2.0	1.9	1.9	2.2	+0.3
Vicodin [13,16,27,28]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	2.5	2.8	2.5	2.6	3.0	2.7	2.9	2.5	2.7	2.1	1.3	1.4	1.0	0.9	0.8	0.7	0.6	0.9	0.9	+0.3
10th Grade	—	—	—	—	—	—	—	—	—	—	—	6.9	7.2	6.2	5.9	7.0	7.2	6.7	8.1	7.7	5.9	4.4	4.6	3.4	2.5	1.7	1.5	1.1	1.1	1.1	-0.1
12th Grade	—	—	—	—	—	—	—	—	—	—	—	9.6	10.5	9.3	9.5	9.7	9.6	9.7	9.7	8.0	8.1	7.5	5.3	4.8	4.4	2.9	2.0	1.7	1.1	1.1	-0.7 s
College Students	—	—	—	—	—	—	—	—	—	—	—	6.9	7.5	7.4	9.6	7.6	6.7	6.7	8.4	4.9	5.8	3.8	4.4	2.8	1.6	1.3	1.1	1.5	1.5	1.2	-0.2
Young Adults	—	—	—	—	—	—	—	—	—	—	—	8.0	8.3	8.6	9.1	8.6	8.7	9.1	9.2	8.1	6.9	6.3	6.0	5.2	3.8	2.8	2.8	2.5	1.8	1.8	0.0
Amphetamines [13,15]																															
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	5.5	4.9	4.9	4.7	4.2	4.5	4.1	3.9	3.5	2.9‡	4.2	4.3	4.1	3.5	3.5	3.7	4.1	4.1	+0.4
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	9.0	8.5	7.8	7.9	8.0	6.4	7.1	7.6	6.6	6.5‡	7.9	7.6	6.8	6.1	5.6	5.7	5.2	5.2	-0.4
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	9.9	10.0	8.6	8.1	7.5	6.8	6.6	7.4	8.2	7.9‡	9.2	8.1	7.7	6.7	5.9	5.5	4.5	4.5	-1.0 s
College Students	3.9	3.6	4.2	4.2	5.4	4.2	5.7	5.1	5.8	6.6	7.2	7.0	7.1	7.0	6.7	6.0	6.9	5.7	7.5	9.0	9.3	11.1‡	9.6	10.1	9.7	9.8	8.6	8.3	8.1	6.5	-1.6
Young Adults	3.8	3.6	3.4	3.8	3.9	3.8	4.1	3.9	4.1	4.4	4.7	5.3	5.2	5.6	4.7	5.2	5.0	4.9	5.5	6.5	6.6	7.2‡	7.2	7.6	7.4	6.9	7.5	7.5	6.8	6.6	-0.2
Ritalin [13,16,17,28]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	2.9	2.8	2.6	2.5	2.4	2.6	2.1	1.6	1.8	1.5	1.3	0.7	1.1	0.9	0.6	0.8	0.4	0.5	1.0	1.0	+0.4
10th Grade	—	—	—	—	—	—	—	—	—	—	4.8	4.8	4.1	3.4	3.4	3.6	2.8	2.9	3.6	2.7	2.6	1.9	1.8	1.8	1.6	1.2	0.8	0.9	0.7	0.7	-0.2
12th Grade	—	—	—	—	—	—	—	—	—	—	5.1	4.0	4.0	5.1	4.4	4.4	3.8	3.4	2.1	2.7	2.6	2.6	2.3	1.8	2.0	1.2	1.3	0.9	1.1	1.1	+0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	5.7	4.7	4.7	4.2	3.9	3.7	3.2	1.7	1.9	2.3	1.8	3.6	1.6	2.0	2.4	1.4	1.3	2.5	1.4	-1.0
Young Adults	—	—	—	—	—	—	—	—	—	—	—	2.6	2.7	2.4	2.3	2.5	2.0	2.0	1.6	1.6	1.3	1.5	1.8	1.7	1.6	1.3	1.0	1.4	1.2	1.8	+0.6
Adderall [13,16,17,28]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	2.3	1.7	1.7	1.8	1.3	1.0	1.5	1.3	1.8	2.5	2.5	+0.7
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.3	4.6	4.5	4.4	4.6	5.2	4.2	4.0	4.1	3.1	3.1	-1.0
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	6.5	6.5	7.6	7.4	6.8	7.5	6.2	5.5	4.6	3.9	3.9	-0.7
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.2	9.0	9.8	9.0	10.7	9.6	10.7	9.9	9.4	11.0	8.4	7.2	-1.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	6.4	5.9	6.8	6.4	7.4	6.9	7.0	7.9	8.7	6.8	7.6	+0.8

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change	
Methamphetamine [16,17]																																
8th Grade	—	—	—	—	—	—	—	—	3.2	2.5	2.8	2.2	2.5	1.5	1.8	1.8	1.1	1.2	1.0	1.2	0.8	1.0	1.0	0.6	0.5	0.4	0.5	0.4	0.5	0.5	0.0	
10th Grade	—	—	—	—	—	—	—	—	4.6	4.0	3.7	3.9	3.3	3.0	2.9	1.8	1.6	1.5	1.6	1.6	1.4	1.0	1.0	0.8	0.8	0.4	0.4	0.4	0.5	0.5	0.0	
12th Grade	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	3.2	3.4	2.5	2.5	1.7	1.2	1.2	1.0	1.4	1.1	0.9	1.0	0.6	0.6	0.6	0.5	0.5	0.5	-0.1	
College Students	—	—	—	—	—	—	—	—	3.3	1.6	2.4	1.2	2.6	2.9	1.7	1.2	0.4	0.5	0.3	0.4	0.2	0.0	0.4	0.1	0.5	0.0	0.4	0.4	0.0	0.0	0.0	###
Young Adults	—	—	—	—	—	—	—	—	2.7	2.1	2.4	2.5	2.4	2.5	2.2	1.8	1.4	0.9	0.9	0.7	0.6	0.9	0.7	0.7	0.7	0.6	0.6	1.0	0.5	0.8	+0.3	
Crystal Methamphetamine (Ice) [17]																																
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	2.0	2.1	2.3	1.9	1.6	1.1	0.9	0.9	1.2	0.8	1.1	0.8	0.5	0.8	0.8	0.6	0.6	0.6	+0.1	
College Students	0.1	0.2	0.7	0.8	1.1	0.3	0.8	1.0	0.5	0.5	0.6	0.8	0.9	1.1	1.4	0.6	0.7	0.1	0.1	0.5	0.1	0.6	0.0	0.0	0.0	0.0	0.4	0.0	—	—	—	
Young Adults	0.3	0.4	0.6	0.7	1.0	0.8	0.9	1.0	0.8	1.0	0.9	1.3	1.1	1.4	1.6	1.1	1.0	0.7	0.7	0.4	0.4	0.6	0.9	0.4	0.5	0.1	0.7	0.4	0.6	—	—	
Sedatives (Barbiturates) [13,18]																																
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	6.0‡	6.5	7.2	6.6	6.2	5.8	5.2	4.8	4.3	4.5	4.8	4.3	3.6	3.0	2.9	2.7	2.5	2.5	-0.2	
College Students	1.2	1.4	1.5	1.2	2.0	2.3	3.0	2.5	3.2	3.7	3.8	3.7	4.1	4.2	3.9	3.4	3.6	3.7	3.1	2.5	1.7	2.2‡	2.7	3.1	2.3	2.1	1.9	1.5	2.0	1.7	-0.2	
Young Adults	1.7	1.6	1.6	1.6	1.9	2.0	2.1	2.2	2.3	2.7	3.0	3.5	3.5	4.0	4.2	3.9	4.0	4.4	3.6	3.1	3.0	2.6	3.3	3.2	2.6	2.6	2.2	2.5	2.1	2.0	0.0	
Tranquilizers [2,13]																																
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6‡	2.8	2.6	2.7	2.5	2.8	2.6	2.4	2.4	2.6	2.8	2.0	1.8	1.8	1.7	1.7	1.7	2.0	2.0	2.4	2.4	+0.4	
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6‡	7.3	6.3	5.3	5.1	4.8	5.2	5.3	4.6	5.0	5.1	4.5	4.3	3.7	3.9	3.9	4.1	4.1	3.9	3.4	3.4	-0.4	
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7‡	6.9	7.7	6.7	7.3	6.8	6.6	6.2	6.2	6.3	5.6	5.6	5.3	4.6	4.7	4.7	4.9	4.7	3.9	3.4	3.4	-0.5	
College Students	2.4	2.9	2.4	1.8	2.9	2.8	3.8	3.9	3.8	4.2‡	5.1	6.7	6.9	6.7	6.4	5.8	5.5	5.0	5.4	4.9	4.2	3.4	4.4	3.5	4.3	4.9	3.6	3.5	3.0	2.6	-0.4	
Young Adults	3.5	3.4	2.8	2.8	3.2	3.1	3.3	3.6	3.4	4.1‡	5.0	6.7	6.4	7.0	6.8	6.5	6.8	6.7	6.5	6.3	5.8	5.1	5.4	4.9	5.2	5.0	4.7	4.2	3.7	3.4	-0.3	

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Any Prescription Drug [15,20]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	16.8	15.8	15.4	14.4	15.0	15.2	14.8‡	15.9	13.9	12.9	12.0	10.9	9.9	8.6	8.6	-1.3 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Over-the-counter Cough/Cold Medicines [16,17]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	4.0	3.6	3.8	3.2	2.7	3.0	2.9	2.0	1.6	2.6	2.1	2.8	3.2	3.2	+0.4
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	5.4	5.3	6.0	5.1	5.5	4.7	4.3	3.7	3.3	3.0	3.6	3.3	2.6	2.6	-0.7
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.8	5.5	5.9	6.6	5.3	5.6	5.0	4.1	4.6	4.0	3.2	3.4	2.5	2.5	-0.9
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol [21]																															
8th Grade	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	0.5	0.6	0.7	0.5	0.7	0.5	0.4	0.5	0.8	0.4	0.4	0.3	0.3	0.5	0.4	0.3	0.4	0.4	+0.1
10th Grade	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	0.6	0.7	0.5	0.5	0.7	0.4	0.4	0.6	0.6	0.5	0.6	0.5	0.2	0.5	0.3	0.3	0.6	0.6	+0.3
12th Grade	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9‡	1.6	1.3	1.6	1.2	1.1	1.0	1.3	1.0	1.5	1.3	1.5	0.9	0.7	1.0	1.1	0.8	0.7	0.5	0.5	-0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	0.7	0.4	0.3	0.1	0.2	0.1	0.3	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	0.3	0.5	0.1	0.1	0.2	0.3	0.2	0.1	—	—	—	—	—	—	—	—	—	—	—	—
GHB [16,29]																															
8th Grade	—	—	—	—	—	—	—	—	—	1.2	1.1	0.8	0.9	0.7	0.5	0.8	0.7	1.1	0.7	0.6	0.6	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	1.4	0.8	0.8	0.7	0.6	0.5	1.0	0.6	0.5	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	1.4	2.0	1.1	1.1	0.9	1.2	1.1	1.4	1.4	1.4	1.0	1.0	0.7	0.9	0.4	0.3	0.4	0.4	+0.1
College Students	—	—	—	—	—	—	—	—	—	—	—	0.6	0.3	0.7	0.4	*	0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.2	0.0	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	0.7	0.5	0.4	0.3	0.2	0.4	0.2	0.3	0.3	0.3	0.4	0.3	0.4	0.2	—	—	—	—	—	—
Ketamine [16,30]																															
8th Grade	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	1.1	0.9	0.6	0.9	1.0	1.2	1.0	1.0	0.8	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	2.1	2.1	2.2	1.9	1.3	1.0	1.0	0.8	1.0	1.3	1.1	1.2	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	2.1	1.9	1.6	1.4	1.3	1.5	1.7	1.6	1.7	1.5	1.4	1.5	1.4	1.2	1.2	0.7	0.7	0.7	0.0
College Students	—	—	—	—	—	—	—	—	—	—	—	1.3	1.0	1.5	0.5	0.9	0.2	0.4	0.1	0.7	0.6	0.4	0.9	0.1	0.6	0.5	0.3	0.9	0.7	0.3	-0.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	1.1	0.8	0.6	0.4	0.5	0.3	0.5	0.5	0.7	0.4	0.7	0.6	0.6	0.6	0.7	0.4	0.7	1.1	1.3	+0.2

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Alcohol [22]																															
Any Use																															
8th Grade	54.0	53.7‡	45.4	46.8	45.3	46.5	45.5	43.7	43.5	43.1	41.9	38.7	37.2	36.7	33.9	33.6	31.8	32.1	30.3	29.3	26.9	23.6	22.1	20.8	21.0	17.6	18.2	18.7	19.3	19.3	+0.7
10th Grade	72.3	70.2‡	63.4	63.9	63.5	65.0	65.2	62.7	63.7	65.3	63.5	60.0	59.3	58.2	56.7	55.8	56.3	52.5	52.8	52.1	49.8	48.5	47.1	44.0	41.9	38.3	37.7	37.8	37.7	37.7	-0.1
12th Grade	77.7	76.8‡	72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	70.1	70.6	68.6	66.5	66.4	65.5	66.2	65.2	63.5	63.5	62.0	60.2	58.2	55.6	55.7	53.3	52.1	52.1	-1.2
College Students	88.3	86.9	85.1	82.7	83.2	82.9	82.4	84.6	83.6	83.2	83.0	82.9	81.7	81.2	83.0	82.1	80.9	82.1	79.4	78.6	77.4	79.2	75.6	76.1	79.0	78.9	75.8	74.6	77.6	76.7	-0.9
Young Adults	86.3	85.8	84.8	83.6	84.1	83.9	84.1	83.9	84.4	83.8	84.3	84.7	83.4	84.3	83.9	84.4	84.3	84.3	83.9	83.3	83.8	82.7	83.1	83.0	82.4	83.5	82.0	82.4	81.9	82.2	+0.4
Been Drunk [23]																															
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	18.5	18.5	16.6	15.0	14.5	14.5	14.1	13.9	12.6	12.7	12.2	11.5	10.5	8.6	8.4	7.3	7.7	5.7	6.4	6.5	6.6	6.6	+0.1
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	40.9	41.6	39.9	35.4	34.7	35.1	34.2	34.5	34.4	30.0	31.2	29.9	28.8	28.2	27.1	24.6	23.4	20.5	20.4	20.9	20.2	20.2	-0.7
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	48.0	51.8	47.7	47.9	46.1	45.6	47.0	44.0	42.2	45.0	43.5	41.4	37.7	37.3	35.6	33.9	32.8	32.8	-1.1
College Students	69.1	67.3	65.6	63.1	62.1	64.2	66.8	67.0	65.4	64.7	68.8	66.0	64.7	67.1	64.2	66.2	64.8	66.8	61.5	63.8	60.1	61.5	57.9	60.5	61.6	60.7	58.0	59.2	58.7	58.0	-0.7
Young Adults	60.8	59.9	58.7	56.8	59.6	57.5	61.9	58.6	60.4	58.3	61.2	60.4	60.7	61.2	62.8	64.7	64.8	65.9	64.9	64.0	63.6	64.7	62.9	63.6	61.8	62.0	60.4	62.3	61.2	60.7	-0.5
Flavored Alcoholic Beverages [7,16,31]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	30.4	27.9	26.8	26.0	25.0	22.2	21.9	19.2	17.0	15.7	13.4	13.4	11.2	10.8	12.1	10.7	10.7	-1.4
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	49.7	48.5	48.8	45.9	43.4	41.5	41.0	38.3	37.8	35.6	33.2	31.4	26.1	28.3	28.8	26.8	26.8	-2.0
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	55.2	55.8	58.4	54.7	53.6	51.8	53.4	47.9	47.0	44.4	44.2	43.6	42.8	40.0	39.6	38.4	37.5	37.5	-0.9
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	63.2	67.0	63.5	62.6	65.0	66.1	60.3	63.0	58.1	57.6	64.2	64.5	68.5	60.3	58.4	64.6	80.8	+16.2 ss
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	61.5	56.8	56.8	57.2	56.9	54.8	50.5	54.6	51.4	51.6	53.5	55.2	56.4	51.6	53.9	58.6	68.0	+9.4 sss
Alcoholic Beverages mixed with Energy Drinks [16,23]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.8‡	10.9	10.2	9.5	8.4	6.5	5.6	6.0	7.3	7.3	+1.3
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5‡	19.7	16.9	14.3	12.8	10.6	9.9	9.8	8.4	8.4	-1.4
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.4‡	26.4	23.5	20.0	18.3	17.0	16.9	14.7	12.3	12.3	-2.4 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.6‡	33.8	39.1	32.8	34.1	29.4	31.3	27.4	35.6	20.7	-14.8
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.6‡	36.3	35.3	33.9	31.7	29.4	30.6	29.1	31.6	25.8	-5.9 s
Cigarettes																															
Any Use																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
College Students	35.6	37.3	38.8	37.6	39.3	41.4	43.6	44.3	44.5	41.3	39.0	38.3	35.2	36.7	36.0	30.9	30.7	30.0	29.9	28.1	25.8	23.4	23.2	22.6	20.1	18.7	16.7	15.5	16.0	17.5	+1.4
Young Adults	36.0	36.0	35.9	36.1	36.8	37.6	39.2	38.5	38.4	37.6	37.8	37.9	37.1	37.4	37.9	36.0	35.2	34.4	33.7	32.5	31.0	29.3	29.0	26.9	25.3	23.3	23.1	22.5	21.3	21.0	-0.4

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Tobacco using a Hookah [19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	18.5	18.3	21.4	22.9	19.8	13.0	10.1	7.8	5.6	5.6	-2.2 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.9	25.7	26.1	32.7	23.4	16.9	10.0	11.4	10.6	8.3	-2.2
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.1	17.1	18.8	21.0	17.5	13.7	11.4	12.3	9.3	8.8	-0.5
Small Cigars [19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	19.5	19.9	20.4	18.9	15.9	15.6	13.3	9.2	7.8	7.8	-1.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.6	20.3	19.0	24.2	19.6	17.6	14.0	15.6	8.8	10.7	+1.8
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.3	17.3	17.7	17.7	17.0	14.8	15.8	15.0	10.8	13.4	+2.5 s
Dissolvable Tobacco [16,19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	1.1	1.1	0.9	0.7	0.6	0.6	1.1	1.1	+0.5 s
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.2	1.3	1.1	0.9	0.6	1.1	0.8	0.8	-0.3
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.6	1.9	1.1	1.4	1.1	1.4	1.3	1.1	1.1	-0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0	0.3	0.2	0.5	1.1	0.3	0.7	0.0	0.0	0.8	+0.8
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.5	0.3	0.6	0.4	0.5	0.7	0.3	0.2	1.1	+0.9 s
Snus [16,19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.0	2.2	1.9	2.2	1.1	1.3	1.5	1.5	+0.2
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.2	4.5	4.0	3.0	2.6	3.1	2.3	2.3	-0.8
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	7.9	7.7	5.8	5.8	5.8	4.2	4.7	2.7	2.7	-2.1 ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	4.7	4.8	5.0	5.8	3.3	4.3	1.0	1.4	2.2	+0.8
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.6	5.1	4.8	4.4	3.7	4.3	3.5	2.9	3.9	+1.1
Any Vaping [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	17.6	20.1	20.1	+2.5
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.9	32.3	35.7	35.7	+3.4
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.8	37.3	40.6	40.6	+3.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.5	32.4	43.7	39.6	-4.1
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.1	26.0	34.0	30.8	-3.3 ss

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Vaping Nicotine [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.5	10.9	16.5	16.5	+5.6 sss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15.8	24.7	30.7	30.7	+6.1 ss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.8	29.7	35.3	35.3	+5.6 ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.0	25.6	35.3	32.6	-2.7
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	16.7	23.6	21.9	-1.7
Vaping Marijuana [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	4.4	7.0	7.0	+2.6 sss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	12.4	19.4	19.4	+7.0 sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.5	13.1	20.8	20.8	+7.7 sss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.7	20.2	25.5	24.6	-1.0
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	15.2	21.6	20.1	-1.5
Vaping Just Flavoring [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.8	15.1	14.7	14.7	-0.4
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.3	24.7	20.8	20.8	-3.9 ss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.6	25.7	20.3	20.3	-5.4 sss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.1	14.0	15.6	13.3	-2.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	8.8	9.1	8.5	-0.6
Steroids [25,26]																															
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	1.4	1.1	1.1	0.9	0.8	0.9	0.8	0.5	0.7	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.8	0.8	+0.1
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	1.7	1.5	1.3	1.2	1.1	0.9	0.8	1.0	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.8	0.8	+0.2
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	2.1	2.5	1.5	1.8	1.4	1.5	1.5	1.5	1.2	1.3	1.5	1.5	1.7	1.0	1.1	1.1	1.0	1.0	-0.1
College Students	0.6	0.2	0.9	0.2	0.4	0.2	0.7	0.2	0.9	0.1	0.6	0.5	0.3	0.6	0.5	0.8	0.6	0.1	0.7	0.3	0.2	0.3	0.8	0.5	0.3	0.0	0.6	0.0	—	—	—
Young Adults	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.6	0.4	0.3	0.5	0.6	0.4	0.4	0.3	0.6	0.4	0.6	0.7	0.2	0.5	0.4	0.6	0.4	0.3	0.3	0.5	—	—	—
Previously surveyed drugs that have been dropped																															
Nitrites [5]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	0.9	0.8	0.6	0.5	0.8	0.6	0.9	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page.)

TABLE A-2 (cont.)
Trends in Annual Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Bath Salts (Synthetic stimulants) [16,17]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0	0.5	0.4	0.9	0.5	0.9	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.9	0.9	0.7	0.8	0.4	0.5	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	0.9	0.9	1.0	0.8	0.6	0.6	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.1	0.2	0.1	0.0	0.2	0.0	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.4	0.4	0.3	0.3	0.3	0.2	—	—	—
Provigil [13,17]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.3	1.5	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.0	0.2	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.5	0.2	—	—	—	—	—	—	—	—	—	—
Methaqualone [13,19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	0.6	0.8	0.9	0.8	0.5	0.5	0.6	0.3	0.3	0.4	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bidis [16,32]																															
8th Grade	—	—	—	—	—	—	—	—	—	3.9	2.7	2.7	2.0	1.7	1.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	6.4	4.9	3.1	2.8	2.1	1.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	4.0	3.6	3.3	2.3	1.7	1.9	1.5	1.4	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kreteks [16,32]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	2.6	2.6	2.0	1.9	1.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	6.0	4.9	3.8	3.7	2.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	10.1	8.4	6.7	6.5	7.1	6.2	6.8	6.8	5.5	4.6	2.9	3.0	1.6	1.6	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table A-4.

TABLE A-3
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Any Illicit Drug [1]																															
8th Grade	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	12.2	11.9	11.7	10.4	9.7	8.4	8.5	8.1	7.4	7.6	8.1	9.5	8.5	7.7‡	8.7	8.3	8.1	6.9	7.0	7.3	8.5	8.5	+1.3
10th Grade	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	22.1	22.5	22.7	20.8	19.5	18.3	17.3	16.8	16.9	15.8	17.8	18.5	19.2	18.6‡	19.2	18.5	16.5	15.9	17.2	18.3	19.8	19.8	+1.6
12th Grade	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	24.1	23.4	23.1	21.5	21.9	22.3	23.3	23.8	25.2	25.2‡	25.2	23.7	23.6	24.4	24.9	24.0	23.7	23.7	-0.2
College Students	15.2	16.1	15.1	16.0	19.1	17.6	19.2	19.7	21.6	21.5	21.9	21.5	21.4	21.2	19.5	19.2	19.3	18.9	20.7	19.2	21.4	22.3‡	22.8	22.7	23.4	24.4	23.6	27.0	29.7	25.2	-4.5 s
Young Adults	14.6	14.2	14.0	14.5	15.0	14.9	15.2	14.6	15.4	15.9	16.6	17.7	18.6	17.8	18.1	17.6	18.0	18.8	19.1	18.2	19.6	19.0‡	20.9	21.4	22.0	23.2	24.6	26.5	28.5	28.3	-0.2
Any Illicit Drug other than Marijuana [1,2]																															
8th Grade	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	5.5	5.6‡	5.5	4.7	4.7	4.1	4.1	3.8	3.6	3.8	3.5	3.5	3.4	2.6‡	3.6	3.3	3.1	2.7	2.7	3.0	3.4	3.4	+0.5
10th Grade	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	8.6	8.5‡	8.7	8.1	6.9	6.9	6.4	6.3	6.9	5.3	5.7	5.8	5.4	5.0‡	4.9	5.6	4.9	4.4	4.5	4.2	4.2	4.2	0.0
12th Grade	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4‡	11.0	11.3	10.4	10.8	10.3	9.8	9.5	9.3	8.6	8.6	8.9	8.4‡	8.2	7.7	7.6	6.9	6.3	6.0	5.2	5.2	-0.8
College Students	4.3	4.6	5.4	4.6	6.3	4.5	6.8	6.1	6.4	6.9‡	7.5	7.8	8.2	9.1	8.2	8.2	8.1	7.3	8.4	8.1	8.2	7.8‡	8.8	10.0	9.2	8.4	7.0	7.9	7.6	6.0	-1.6
Young Adults	5.3	5.1	4.5	4.9	5.3	4.5	5.2	5.0	5.4	5.5‡	6.3	7.1	7.9	7.9	7.9	7.8	8.2	8.6	8.4	8.2	8.0	7.5‡	7.9	9.8	8.2	8.9	8.8	8.4	7.9	7.8	-0.1
Marijuana/Hashish																															
8th Grade	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	9.7	9.1	9.2	8.3	7.5	6.4	6.6	6.5	5.7	5.8	6.5	8.0	7.2	6.5	7.0	6.5	6.5	5.4	5.5	5.6	6.6	6.6	+1.0
10th Grade	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	19.4	19.7	19.8	17.8	17.0	15.9	15.2	14.2	14.2	13.8	15.9	16.7	17.6	17.0	18.0	16.6	14.8	14.0	15.7	16.7	18.4	18.4	+1.7
12th Grade	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	21.2	19.9	19.8	18.3	18.8	19.4	20.6	21.4	22.6	22.9	22.7	21.2	21.3	22.5	22.9	22.2	22.3	22.3	+0.1
College Students	14.1	14.6	14.2	15.1	18.6	17.5	17.7	18.6	20.7	20.0	20.2	19.7	19.3	18.9	17.1	16.7	16.8	17.0	18.5	17.5	19.4	20.5	20.6	20.8	21.1	22.2	21.2	24.7	26.3	24.5	-1.7
Young Adults	13.2	12.9	12.9	13.3	13.2	14.0	13.8	13.4	13.9	14.1	14.7	15.6	15.9	15.2	15.2	14.9	15.0	15.5	16.3	15.3	17.1	16.8	18.2	18.3	19.0	20.6	22.1	23.9	26.3	26.8	+0.5
Inhalants [3,4]																															
8th Grade	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	5.0	4.5	4.0	3.8	4.1	4.5	4.2	4.1	3.9	4.1	3.8	3.6	3.2	2.7	2.3	2.2	2.0	1.8	2.1	1.8	2.1	2.1	+0.3
10th Grade	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	2.6	2.6	2.4	2.4	2.2	2.4	2.2	2.3	2.5	2.1	2.2	2.0	1.7	1.4	1.3	1.1	1.2	1.0	1.1	1.0	1.1	1.1	+0.1
12th Grade	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	1.5	1.5	2.0	1.5	1.2	1.4	1.2	1.4	1.0	0.9	1.0	0.7	0.7	0.8	0.8	0.7	0.9	0.9	+0.3
College Students	0.9	1.1	1.3	0.6	1.6	0.8	0.8	0.6	1.5	0.9	0.4	0.7	0.4	0.4	0.3	0.4	0.1	0.4	0.1	0.5	0.3	0.2	0.1	0.3	0.2	0.0	0.9	0.2	0.4	0.4	-0.1
Young Adults	0.4	0.5	0.5	0.4	0.6	0.4	0.4	0.6	0.6	0.4	0.3	0.5	0.3	0.3	0.2	0.3	0.1	0.4	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.3	0.4	0.2	0.5	0.4	-0.1

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Hallucinogens [2,6]																															
8th Grade	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	1.3	1.2‡	1.6	1.2	1.2	1.0	1.1	0.9	1.0	0.9	0.9	1.0	1.0	0.6	0.8	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.0
10th Grade	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	2.9	2.3‡	2.1	1.6	1.5	1.6	1.5	1.5	1.7	1.3	1.4	1.6	1.4	1.2	1.1	1.2	0.9	0.9	1.1	0.8	1.3	1.3	+0.5 ss
12th Grade	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6‡	3.3	2.3	1.8	1.9	1.9	1.5	1.7	2.2	1.6	1.9	1.6	1.6	1.4	1.5	1.6	1.4	1.6	1.4	1.8	1.8	+0.4
College Students	1.2	2.3	2.5	2.1	3.3	1.9	2.1	2.1	2.0	1.4‡	1.8	1.2	1.8	1.3	1.2	0.9	1.3	1.7	1.0	1.4	1.2	1.1	1.0	1.0	1.4	0.8	1.2	1.1	1.4	2.4	+1.0
Young Adults	0.8	1.1	0.9	1.1	1.3	0.9	1.2	1.1	1.0	1.0‡	1.0	0.8	1.1	0.8	0.7	0.7	0.8	0.8	0.7	0.9	0.8	0.6	0.9	0.8	0.9	0.8	0.8	1.3	1.5	2.4	+0.8 ss
LSD [2]																															
8th Grade	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	1.1	1.0	1.0	0.7	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.5	0.3	0.5	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.0
10th Grade	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	2.3	1.6	1.5	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.5	0.7	0.7	0.5	0.6	0.6	0.6	0.7	0.8	0.5	1.1	1.1	+0.5 sss
12th Grade	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	0.6	0.7	0.7	0.6	0.6	1.1	0.5	0.8	0.8	0.8	0.8	1.0	1.1	1.0	1.2	1.0	1.4	1.4	+0.4 s
College Students	0.8	1.8	1.6	1.8	2.5	0.9	1.1	1.5	1.2	0.9	1.0	0.2	0.2	0.2	0.1	0.3	0.3	0.8	0.3	0.7	0.5	0.4	0.4	0.5	0.7	0.4	0.8	1.0	1.1	1.1	0.0
Young Adults	0.6	0.8	0.6	0.8	1.0	0.6	0.7	0.8	0.7	0.6	0.6	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.4	0.3	0.6	0.5	0.5	0.9	0.9	1.0	+0.1
Hallucinogens other than LSD [2]																															
8th Grade	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.6	0.6‡	1.1	1.0	1.0	0.8	0.9	0.7	0.7	0.7	0.7	0.8	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.0
10th Grade	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	1.2	1.2‡	1.4	1.4	1.2	1.4	1.3	1.3	1.4	1.0	1.1	1.2	1.1	0.9	0.8	0.8	0.6	0.5	0.6	0.5	0.8	0.8	+0.3 s
12th Grade	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7‡	1.9	2.0	1.5	1.7	1.6	1.3	1.4	1.6	1.4	1.5	1.2	1.3	1.0	1.0	0.9	0.7	1.0	0.9	1.0	1.0	+0.1
College Students	0.6	0.7	1.1	0.8	1.6	1.2	1.2	0.7	1.2	0.8‡	0.8	1.1	1.7	1.2	1.1	0.7	1.1	1.3	0.8	1.2	0.8	0.7	0.8	0.7	0.9	0.5	0.6	0.4	0.8	1.5	+0.7
Young Adults	0.2	0.4	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.5‡	0.5	0.7	1.0	0.8	0.7	0.5	0.7	0.7	0.6	0.7	0.5	0.5	0.6	0.6	0.5	0.3	0.5	0.7	0.9	1.6	+0.7 ss
PCP [7]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	0.6	0.4	0.7	0.4	0.5	0.6	0.5	0.8	0.8	0.5	0.4	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MDMA (Ecstasy, Molly) [8]																															
8th Grade, original	—	—	—	—	—	1.0	1.0	0.9	0.8	1.4	1.8	1.4	0.7	0.8	0.6	0.7	0.6	0.8	0.6	1.1	0.6	0.5	0.5	0.4	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.5	0.3	0.4	0.4	0.5	0.5	+0.1
10th Grade, original	—	—	—	—	—	1.8	1.3	1.3	1.8	2.6	2.6	1.8	1.1	0.8	1.0	1.2	1.2	1.1	1.3	1.9	1.6	1.0	1.2	0.8	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	0.9	0.5	0.5	0.4	0.7	0.7	+0.2
12th Grade, original	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	1.3	1.2	1.0	1.3	1.6	1.8	1.8	1.4	2.3	0.9	1.5	1.4	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.1	0.9	0.9	0.5	0.7	0.7	+0.2
College Students																															
Original	0.2	0.4	0.3	0.2	0.7	0.7	0.8	0.8	2.1	2.5	1.5	0.7	1.0	0.7	0.8	0.6	0.4	0.6	0.5	1.0	0.7	1.4	0.8	1.4	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.7	1.0	0.5	1.3	1.1	0.8	-0.3
Young Adults																															
Original	0.1	0.2	0.2	0.1	0.3	0.3	0.5	0.5	1.0	1.5	1.4	1.2	0.7	0.6	0.6	0.7	0.5	0.6	0.6	0.8	0.7	1.0	1.0	1.2	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	0.9	1.1	0.8	1.1	0.9	1.0	+0.1

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Cocaine																															
8th Grade	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	1.3	1.2	1.2	1.1	0.9	0.9	1.0	1.0	0.9	0.8	0.8	0.6	0.8	0.5	0.5	0.5	0.5	0.3	0.4	0.3	0.3	0.3	0.0
10th Grade	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	1.8	1.8	1.3	1.6	1.3	1.7	1.5	1.5	1.3	1.2	0.9	0.9	0.7	0.8	0.8	0.6	0.8	0.4	0.5	0.6	0.6	0.6	0.0
12th Grade	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	2.1	2.3	2.3	2.5	2.0	1.9	1.3	1.3	1.1	1.1	1.1	1.0	1.1	0.9	1.2	1.1	1.0	1.0	-0.1
College Students	1.0	1.0	0.7	0.6	0.7	0.8	1.6	1.6	1.2	1.4	1.9	1.6	1.9	2.4	1.8	1.8	1.7	1.2	1.3	1.0	1.2	1.1	0.9	1.8	1.5	1.7	1.4	2.6	2.4	1.4	-1.0
Young Adults	2.0	1.8	1.3	1.3	1.5	1.3	1.6	1.6	1.7	1.4	2.0	2.1	2.4	2.0	2.0	2.2	1.9	1.9	1.8	1.4	1.5	1.3	1.4	1.7	1.6	2.1	2.3	2.5	2.2	1.9	-0.3
Crack [9]																															
8th Grade	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.0
10th Grade	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	0.8	0.9	0.7	1.0	0.7	0.8	0.7	0.7	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.0
12th Grade	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	0.9	1.0	1.0	0.9	0.9	0.8	0.6	0.7	0.5	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.7	0.7	+0.2
College Students	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.1	0.3	0.4	0.4	0.1	*	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.1	0.1	0.0	0.0	0.4	0.0	0.0	0.0
Young Adults	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.0
Cocaine other than Crack [10]																															
8th Grade	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	1.1	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.5	0.6	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.0
10th Grade	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	1.6	1.6	1.2	1.3	1.1	1.5	1.3	1.3	1.1	1.0	0.8	0.7	0.6	0.7	0.7	0.5	0.7	0.3	0.4	0.5	0.6	0.6	0.0
12th Grade	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	1.8	2.2	2.0	2.4	1.7	1.7	1.1	1.1	1.0	1.0	0.9	0.9	1.1	0.6	1.1	1.0	0.9	0.9	-0.1
College Students	1.0	0.9	0.6	0.3	0.8	0.6	1.3	1.5	1.0	0.9	1.5	1.4	1.9	2.2	1.8	1.3	1.6	1.1	1.2	1.0	1.2	1.3	0.9	1.8	1.4	1.7	1.1	1.9	1.3	0.9	-0.3
Young Adults	1.8	1.6	1.0	1.0	1.3	1.2	1.5	1.5	1.5	1.3	1.6	1.9	2.2	2.0	1.9	1.7	1.8	1.6	1.6	1.4	1.4	1.3	1.2	1.7	1.4	2.0	2.0	2.2	1.7	1.2	-0.5
Heroin [11,12]																															
8th Grade	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.2	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.1	0.0
10th Grade	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.1	0.1	0.2	0.2	+0.2 s
12th Grade	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.3	0.3	+0.1
College Students	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Young Adults	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.0

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Narcotics other than Heroin [13,14]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0‡	4.0	4.1	4.3	3.9	3.8	3.8	3.8	4.1	3.6	3.6	3.0	2.8	2.2	2.1	1.7	1.6	1.1	1.0	1.0	-0.1
College Students	0.6	1.0	0.7	0.4	1.2	0.7	1.3	1.1	1.0	1.7	1.7‡	3.2	2.3	3.0	3.1	3.1	2.2	2.3	2.7	2.3	2.1	2.2	1.5	1.2	1.3	1.1	0.7	1.0	0.4	0.5	0.0
Young Adults	0.6	0.7	0.6	0.6	0.8	0.6	0.9	0.8	1.1	1.2	1.5‡	2.2	2.8	2.8	3.3	3.1	3.3	3.5	3.3	3.3	2.8	2.6	2.6	2.1	1.8	1.9	1.2	0.9	0.7	0.9	+0.1
Amphetamines [13,15]																															
8th Grade	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	3.4	3.4	3.2	2.8	2.7	2.3	2.3	2.1	2.0	2.2	1.9	1.8	1.8	1.3‡	2.3	2.1	1.9	1.7	1.7	1.8	2.2	2.2	+0.3
10th Grade	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	5.0	5.4	5.6	5.2	4.3	4.0	3.7	3.5	4.0	2.8	3.3	3.3	3.1	2.8‡	3.3	3.7	3.1	2.7	2.5	2.4	2.4	2.4	0.0
12th Grade	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	5.0	4.6	3.9	3.7	3.7	2.9	3.0	3.3	3.7	3.3‡	4.2	3.8	3.2	3.0	2.6	2.4	2.0	2.0	-0.4
College Students	1.0	1.1	1.5	1.5	2.2	0.9	2.1	1.7	2.3	2.9	3.3	3.0	3.1	3.2	2.9	2.5	3.1	2.8	3.4	4.1	4.5	4.6‡	5.0	4.8	4.2	3.8	3.6	2.9	3.4	1.6	-1.8 ss
Young Adults	1.3	1.3	1.3	1.5	1.5	1.3	1.5	1.4	1.6	1.9	2.0	2.1	2.3	2.2	2.0	2.0	2.0	2.0	2.3	2.6	2.8	2.9‡	2.9	3.3	2.9	2.9	2.9	2.8	2.4	2.0	-0.4
Methamphetamine [16,17]																															
8th Grade	—	—	—	—	—	—	—	—	1.1	0.8	1.3	1.1	1.2	0.6	0.7	0.6	0.6	0.7	0.5	0.7	0.4	0.5	0.4	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.0
10th Grade	—	—	—	—	—	—	—	—	1.8	2.0	1.5	1.8	1.4	1.3	1.1	0.7	0.4	0.7	0.6	0.7	0.5	0.6	0.4	0.3	0.3	0.2	0.1	0.1	0.3	0.3	+0.1
12th Grade	—	—	—	—	—	—	—	—	1.7	1.9	1.5	1.7	1.7	1.4	0.9	0.9	0.6	0.6	0.5	0.5	0.6	0.5	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.0
College Students	—	—	—	—	—	—	—	—	1.2	0.2	0.5	0.2	0.6	0.2	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.4	0.0	0.0	0.0
Young Adults	—	—	—	—	—	—	—	—	0.8	0.6	1.0	1.0	0.8	0.6	0.7	0.4	0.5	0.3	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.2	0.2	0.4	0.2	0.2	0.0

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Sedatives (Barbiturates) [13,18]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	2.9‡	2.9	3.3	3.0	2.7	2.8	2.5	2.2	1.8	2.0	2.2	2.0	1.7	1.5	1.4	1.2	1.2	1.2	0.0
College Students	0.3	0.7	0.4	0.4	0.5	0.8	1.2	1.1	1.1	1.1	1.5	1.7	1.7	1.5	1.3	1.3	1.4	1.4	1.2	0.6	0.8	0.8‡	0.9	0.7	1.0	0.9	0.5	0.5	0.5	0.5	0.0
Young Adults	0.6	0.5	0.5	0.5	0.7	0.7	0.8	0.8	0.9	1.1	1.3	1.3	1.3	1.6	1.6	1.4	1.6	1.8	1.2	1.1	1.1	1.1	1.2	1.0	0.8	1.0	0.6	0.9	0.8	0.8	0.0
Tranquilizers [2,13]																															
8th Grade	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	1.1	1.4‡	1.2	1.2	1.4	1.2	1.3	1.3	1.1	1.2	1.2	1.2	1.0	0.8	0.9	0.8	0.8	0.8	0.7	0.9	1.2	1.2	+0.3 s
10th Grade	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	2.2	2.5‡	2.9	2.9	2.4	2.3	2.3	2.4	2.6	1.9	2.0	2.2	1.9	1.7	1.6	1.6	1.7	1.5	1.5	1.3	1.3	1.3	-0.1
12th Grade	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6‡	2.9	3.3	2.8	3.1	2.9	2.7	2.6	2.6	2.7	2.5	2.3	2.1	2.0	2.1	2.0	1.9	2.0	1.3	1.3	1.3	-0.1
College Students	0.6	0.6	0.4	0.4	0.5	0.7	1.2	1.3	1.1	2.0‡	1.5	3.0	2.8	2.7	2.2	2.1	1.8	1.6	2.2	1.3	1.6	1.1	1.2	1.7	1.6	1.8	0.9	1.1	0.7	0.4	-0.3
Young Adults	1.0	1.0	0.9	0.8	1.1	0.9	1.1	1.1	1.2	1.5‡	1.8	2.7	2.3	2.5	2.6	2.3	2.6	2.6	2.8	2.2	2.3	1.8	1.9	1.9	1.7	1.8	1.5	1.4	1.2	1.0	-0.2
Any Prescription Drug [15,20]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.6	8.1	7.8	7.2	7.3	6.9	7.2	7.0‡	7.1	6.4	5.9	5.4	4.9	4.2	3.6	3.6	-0.7 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol [21]																															
8th Grade	—	—	—	—	—	0.5	0.3	0.4	0.3	0.3	0.4	0.2	0.1	0.2	0.2	0.4	0.3	0.1	0.2	0.2	0.6	0.1	0.1	0.2	0.1	0.2	0.1	0.3	0.4	0.4	+0.1
10th Grade	—	—	—	—	—	0.5	0.5	0.4	0.5	0.4	0.2	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.4	0.1	0.3	0.0	0.1	0.2	0.2	+0.1
12th Grade	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol [22]																															
Any Use																															
8th Grade	25.1	26.1‡	24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	19.7	18.6	17.1	17.2	15.9	15.9	14.9	13.8	12.7	11.0	10.2	9.0	9.7	7.3	8.0	8.2	7.9	7.9	-0.2
10th Grade	42.8	39.9‡	38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	35.4	35.2	33.2	33.8	33.4	28.8	30.4	28.9	27.2	27.6	25.7	23.5	21.5	19.9	19.7	18.6	18.4	18.4	-0.2
12th Grade	54.0	51.3‡	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	47.5	48.0	47.0	45.3	44.4	43.1	43.5	41.2	40.0	41.5	39.2	37.4	35.3	33.2	33.2	30.2	29.3	29.3	-0.9
College Students	74.7	71.4	70.1	67.8	67.5	67.0	65.8	68.1	69.6	67.4	67.0	68.9	66.2	67.7	67.9	65.4	66.6	69.0	65.8	65.0	63.5	67.7	63.1	63.1	63.2	63.2	62.0	59.6	62.2	55.7	-6.4 ss
Young Adults	70.2	68.8	67.8	67.7	67.9	66.8	67.1	66.6	67.9	66.6	67.2	67.9	66.9	67.7	68.1	68.7	69.5	69.7	69.7	68.5	68.9	69.7	69.1	69.1	68.1	69.7	67.9	67.0	68.2	64.7	-3.5 sss

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Been Drunk [23]																															
8th Grade	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	6.7	6.2	6.0	6.2	5.5	5.4	5.4	5.0	4.4	3.6	3.5	2.7	3.1	1.8	2.2	2.1	2.6	2.6	+0.5
10th Grade	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	18.2	18.5	17.6	18.8	18.1	14.4	15.5	14.7	13.7	14.5	12.8	11.2	10.3	9.0	8.9	8.4	8.8	8.8	+0.3
12th Grade	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	30.9	32.5	30.2	30.0	28.7	27.6	27.4	26.8	25.0	28.1	26.0	23.5	20.6	20.4	19.1	17.5	17.5	17.5	0.0
College Students	45.0	45.0	43.8	42.8	37.9	40.3	46.4	44.3	44.6	43.9	44.7	44.4	40.4	47.4	43.1	47.6	46.8	45.3	42.4	43.6	39.9	40.1	40.2	42.6	38.4	40.8	34.8	37.8	34.8	27.6	-7.2 s
Young Adults	35.0	35.2	32.2	31.9	32.2	31.2	34.0	33.4	34.1	32.6	33.9	36.3	36.4	36.4	38.0	40.5	39.7	40.0	39.0	38.2	38.3	38.4	36.8	38.5	33.9	36.3	35.3	34.9	35.8	30.8	-5.0 sss
Flavored Alcoholic Beverages [7,16]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	14.6	12.9	13.1	12.2	10.2	9.5	9.4	8.6	7.6	6.3	5.7	5.5	4.0	4.4	4.9	4.5	4.5	-0.4
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	25.1	23.1	24.7	21.8	20.2	19.0	19.4	15.8	16.3	15.5	14.0	12.8	11.0	12.9	11.8	11.1	11.1	-0.7
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	31.1	30.5	29.3	29.1	27.4	27.4	24.1	23.1	21.8	21.0	19.9	20.8	18.3	20.2	18.1	18.5	18.5	+0.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	34.1	30.9	26.2	27.5	35.8	32.3	31.5	29.5	31.3	29.1	32.9	30.5	33.5	36.7	30.9	46.4	44.7	-1.7
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	28.4	25.9	24.1	24.8	25.1	23.3	23.1	23.2	23.3	23.8	25.8	23.2	27.5	25.1	27.0	31.6	35.9	+4.4
Cigarettes																															
Any Use																															
8th Grade	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	8.7	7.1	6.8	6.5	7.1	6.1	4.9	4.5	4.0	3.6	2.6	1.9	2.2	2.3	2.3	+0.1
10th Grade	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9	14.5	14.0	12.3	13.1	13.6	11.8	10.8	9.1	7.2	6.3	4.9	5.0	4.2	3.4	3.4	-0.9
12th Grade	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6	21.6	20.4	20.1	19.2	18.7	17.1	16.3	13.6	11.4	10.5	9.7	7.6	5.7	5.7	-1.9 sss
College Students	23.2	23.5	24.5	23.5	26.8	27.9	28.3	30.0	30.6	28.2	25.7	26.7	22.5	24.3	23.8	19.2	19.9	17.9	17.9	16.4	15.2	12.5	14.0	12.9	11.3	8.9	8.0	6.8	7.9	4.1	-3.8 sss
Young Adults	27.7	27.5	27.4	27.2	28.2	28.5	28.5	29.0	28.5	27.9	27.7	28.5	27.3	28.0	27.8	26.6	25.6	24.5	23.4	22.6	21.2	19.5	19.5	17.7	16.5	14.3	14.8	12.7	11.8	9.5	-2.3 sss
Smokeless Tobacco [24]																															
8th Grade	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	4.1	4.1	3.3	3.7	3.2	3.5	3.7	4.1	3.5	2.8	2.8	3.0	3.2	2.5	1.7	2.1	2.5	2.5	+0.4
10th Grade	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	5.3	4.9	5.6	5.7	6.1	5.0	6.5	7.5	6.6	6.4	6.4	5.3	4.9	3.5	3.8	3.9	3.2	3.2	-0.7
12th Grade	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	6.7	6.7	7.6	6.1	6.6	6.5	8.4	8.5	8.3	7.9	8.1	8.4	6.1	6.6	4.9	4.2	3.5	3.5	-0.7
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping [36,37]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.0	6.2‡	6.6	10.4	12.2	12.2	+1.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.2	11.0‡	13.1	21.7	25.0	25.0	+3.3 s
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16.3	12.5‡	16.6	26.7	30.9	30.9	+4.2 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	6.9‡	11.3	21.3	28.5	23.9	-4.6
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.7	5.8‡	11.3	16.2	22.1	19.0	-3.1 ss

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Vaping Nicotine [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.5	6.1	9.6	9.6	+3.4 sss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2	16.1	19.9	19.9	+3.8 s
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.0	20.9	25.5	25.5	+4.5 s
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	15.5	22.1	18.6	-3.5
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.2	9.9	14.0	13.7	-0.4
Vaping Marijuana [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	2.6	3.9	3.9	+1.3 ss
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.3	7.0	12.6	12.6	+5.6 sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	7.5	14.0	14.0	+6.5 sss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	10.9	13.5	12.4	-1.1
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	8.6	13.0	10.8	-2.2 ss
Vaping Just Flavoring [36]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	8.1	7.7	7.7	-0.4
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.2	13.1	10.5	10.5	-2.6 s
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.7	13.5	10.7	10.7	-2.8 ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.3	4.8	5.4	5.8	+0.3
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.9	3.7	3.1	4.0	+0.9 ~
Steroids [25,26]																															
8th Grade	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.8	0.7	0.8	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	+0.1
10th Grade	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	0.9	1.0	0.9	1.0	0.8	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	+0.1
12th Grade	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	1.3	1.6	0.9	1.1	1.0	1.0	1.0	1.1	0.7	0.9	1.0	0.9	1.0	0.7	0.8	0.8	0.7	0.7	-0.1
College Students	0.3	0.2	0.2	0.2	0.1	0.0	0.2	0.2	0.4	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.3	0.0	—	—	—
Young Adults	0.3	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.2	0.4	0.1	0.1	0.1	0.3	0.2	0.2	0.4	0.2	0.1	0.1	0.3	0.1	0.2	0.2	0.2	—	—	—

(Table continued on next page.)

TABLE A-3 (cont.)
Trends in 30-Day Prevalence of Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Previously surveyed drugs that have been dropped																															
Nitrites [5]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.6	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone [13,19]																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.2	0.3	0.2	0.2	0.3	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes following Table A-4.

TABLE A-4
Trends in 30-Day Prevalence of Daily Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
Marijuana/Hashish Daily [33]																															
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	1.4	1.3	1.3	1.2	1.0	0.8	1.0	1.0	0.8	0.9	1.0	1.2	1.3	1.1	1.1	1.0	1.1	0.7	0.8	0.7	1.3	1.3	+0.6 s
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	3.8	3.8	4.5	3.9	3.6	3.2	3.1	2.8	2.8	2.7	2.8	3.3	3.6	3.5	4.0	3.4	3.0	2.5	2.9	3.4	4.8	4.8	+1.3 s
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	6.0	5.6	5.0	5.0	5.1	5.4	5.2	6.1	6.6	6.5	6.5	5.8	6.0	6.0	5.9	5.8	6.4	6.4	+0.7
College Students	1.8	1.6	1.9	1.8	3.7	2.8	3.7	4.0	4.0	4.6	4.5	4.1	4.7	4.5	4.0	4.3	3.5	3.9	4.9	4.4	4.7	4.8	5.1	5.9	4.6	4.9	4.4	5.8	5.9	7.9	+2.0
Young Adults	2.4	2.3	2.5	2.8	3.2	3.1	3.5	3.4	3.9	3.7	4.4	4.2	4.8	4.5	4.7	4.7	4.7	5.0	5.4	5.1	5.7	5.5	5.7	6.7	6.5	7.5	7.7	7.9	9.2	9.8	+0.5
Alcohol [22,33]																															
Any Daily Use																															
8th Grade	0.5	0.6‡	1.0	1.0	0.7	1.0	0.8	0.9	1.0	0.8	0.9	0.7	0.8	0.6	0.5	0.5	0.6	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	+0.1
10th Grade	1.3	1.2‡	1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.8	1.9	1.8	1.5	1.3	1.3	1.4	1.4	1.0	1.1	1.1	0.8	1.0	0.9	0.8	0.5	0.5	0.6	0.5	0.6	0.6	+0.2
12th Grade	3.6	3.4‡	3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	3.2	2.8	3.1	3.0	3.1	2.8	2.5	2.7	2.1	2.5	2.2	1.9	1.9	1.3	1.6	1.2	1.7	1.7	+0.5 s
College Students	4.1	3.7	3.9	3.7	3.0	3.2	4.5	3.9	4.5	3.6	4.7	5.0	4.3	3.7	4.6	4.8	4.3	4.0	4.3	3.6	3.8	3.9	3.6	4.3	3.1	4.3	2.2	2.3	2.0	2.4	+0.4
Young Adults	5.1	4.8	4.7	4.2	4.0	4.3	4.9	4.0	4.8	4.1	4.4	4.5	4.8	4.4	5.3	5.2	5.5	5.2	5.6	4.9	5.2	5.8	5.2	5.4	5.2	5.6	5.2	4.6	4.2	5.3	+1.1 s
Been Drunk Daily [23,33]																															
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	+0.1
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.7	0.5	0.6	0.5	0.5	0.4	0.4	0.5	0.5	0.3	0.4	0.3	0.2	0.4	0.3	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.0
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	1.6	1.8	1.5	1.6	1.3	1.4	1.1	1.6	1.3	1.5	1.3	1.1	0.8	0.8	1.1	0.7	1.1	1.1	+0.4
College Students	0.5	0.2	0.3	0.8	0.5	0.1	1.3	0.8	1.0	0.7	0.5	0.8	1.1	0.8	0.5	0.6	0.7	0.5	0.7	0.3	1.3	0.4	0.5	0.4	0.7	0.4	0.0	0.6	0.2	0.3	+0.1
Young Adults	0.5	0.4	0.4	0.5	0.2	0.3	0.9	0.5	0.8	0.4	0.3	0.5	0.8	0.7	0.6	0.6	0.6	0.4	0.9	0.6	0.6	0.4	0.5	0.6	0.4	0.3	0.3	0.4	0.3	0.5	+0.1
5+ Drinks in a Row in Last 2 Weeks																															
8th Grade	10.9	11.3	11.3	12.1	12.3	13.3	12.3	11.5	13.1	11.7	11.0	10.3	9.8	9.4	8.4	8.7	8.3	8.1	7.8	7.2	6.4	5.1	5.1	4.1	4.6	3.4	3.7	3.7	3.8	3.8	+0.2
10th Grade	21.0	19.1	21.0	21.9	22.0	22.8	23.1	22.4	23.5	24.1	22.8	20.3	20.0	19.9	19.0	19.9	19.6	16.0	17.5	16.3	14.7	15.6	13.7	12.6	10.9	9.7	9.8	8.7	8.5	8.5	-0.2
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	27.9	29.2	27.1	25.4	25.9	24.6	25.2	23.2	21.6	23.7	22.1	19.4	17.2	15.5	16.6	13.8	14.4	14.4	+0.6
College Students	42.8	41.4	40.2	40.2	38.6	38.3	40.7	38.9	40.0	39.3	40.9	40.1	38.5	41.7	40.1	40.2	41.1	40.0	36.9	37.0	36.1	37.4	35.2	35.4	31.9	32.4	32.7	28.4	32.0	24.2	-7.8 sss
Young Adults	32.0	31.7	32.0	32.0	30.9	31.4	32.3	31.8	33.2	31.8	33.3	34.3	34.2	35.4	35.7	36.3	36.1	37.0	36.0	35.4	35.5	35.1	34.4	33.1	31.3	31.9	31.3	30.5	31.8	28.0	-3.8 sss
Cigarettes																															
Any Daily Use																															
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	4.5	4.4	4.0	4.0	3.0	3.1	2.7	2.9	2.4	1.9	1.8	1.4	1.3	0.9	0.6	0.8	0.8	0.8	-0.1
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	8.9	8.3	7.5	7.6	7.2	5.9	6.3	6.6	5.5	5.0	4.4	3.2	3.0	1.9	2.2	1.8	1.3	1.3	-0.5
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	15.8	15.6	13.6	12.2	12.3	11.4	11.2	10.7	10.3	9.3	8.5	6.7	5.5	4.8	4.2	3.6	2.4	2.4	-1.3 sss
College Students	13.8	14.1	15.2	13.2	15.8	15.9	15.2	18.0	19.3	17.8	15.0	15.9	13.8	13.8	12.4	9.2	9.3	9.2	8.0	7.6	7.3	5.2	5.6	5.2	4.2	2.6	2.0	1.9	2.5	1.4	-1.1
Young Adults	22.0	21.0	21.0	20.7	21.1	21.1	20.3	20.9	20.6	20.5	19.6	20.6	19.6	20.1	19.5	18.6	17.3	16.9	15.3	15.2	13.9	13.0	12.0	11.2	9.9	8.6	8.6	7.6	6.4	5.3	-1.2 s

(Table continued on next page.)

TABLE A-4 (cont.)
Trends in 30-Day Prevalence of Daily Use of Various Drugs for 8th, 10th, and 12th Graders, College Students, and Young Adults (Ages 19–30)

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2019–2020 change
1/2 Pack+/Day																															
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	1.8	1.7	1.7	1.5	1.1	1.2	1.0	0.9	0.7	0.6	0.7	0.5	0.4	0.3	0.2	0.3	0.2	0.2	-0.1
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	4.1	3.3	3.1	3.3	2.7	2.0	2.4	2.4	1.9	1.5	1.5	1.2	1.0	0.6	0.7	0.7	0.5	0.5	-0.2
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	8.4	8.0	6.9	5.9	5.7	5.4	5.0	4.7	4.3	4.0	3.4	2.6	2.1	1.8	1.7	1.5	0.9	0.9	-0.6 s
College Students	8.0	8.9	8.9	8.0	10.2	8.4	9.1	11.3	11.0	10.1	7.8	7.9	7.6	6.8	6.7	4.9	4.3	4.3	3.8	3.9	2.5	2.4	2.4	2.4	1.4	1.7	0.2	0.5	0.7	0.2	-0.4
Young Adults	16.8	16.3	16.1	15.7	16.0	15.4	15.0	15.1	14.8	14.4	13.9	14.2	13.7	13.3	12.8	12.2	11.4	10.6	9.5	9.6	7.8	7.6	7.0	6.8	6.0	5.2	4.6	4.1	3.5	2.8	-0.7 ~
Smokeless Tobacco Daily [24]																															
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	0.8	1.0	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.5	0.5	0.5	0.8	0.6	0.4	0.3	0.5	0.5	+0.2
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	1.8	1.6	1.9	1.7	1.6	1.4	1.9	2.5	1.7	2.0	1.9	1.8	1.6	1.0	0.6	1.0	0.9	0.9	-0.1
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	2.2	2.8	2.5	2.2	2.8	2.7	2.9	3.1	3.1	3.2	3.0	3.4	2.9	2.7	2.0	1.6	1.1	1.1	-0.5
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source. The Monitoring the Future study, the University of Michigan.

See footnotes on the next page.

Footnotes for Tables A-1 through A-4

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' ‡ ' indicates that the question changed the following year. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 2018 and 2019, survey mode comparisons are not included for the panel. See Chapter 3 for more detail.

Approximate Weighted *N*s	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
8th Graders	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
10th Graders	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
12th Graders	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
College Students	1,400	1,500	1,500	1,400	1,500	1,500	1,500	1,400	1,400	1,400	1,300	1,300	1,300	1,400	1,400
Young Adults	7,800	8,000	7,800	7,600	7,500	7,500	7,400	7,200	7,100	6,800	6,800	6,300	6,400	6,800	6,400

Approximate Weighted *N*s	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
8th Graders	16,500	16,100	15,700	15,000	15,300	16,000	14,600	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100
10th Graders	16,200	16,100	15,100	15,900	15,200	14,900	12,900	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800
12th Graders	14,200	14,500	14,000	13,700	14,400	14,100	12,600	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500
College Students	1,300	1,300	1,300	1,300	1,300	1,200	1,200	1,100	1,000	1,000	900	900	900	800	1,000
Young Adults	6,100	5,800	5,900	5,800	5,800	5,500	5,400	5,200	5,000	4,700	4,400	4,400	4,400	4,200	4,700

[1]For 12th graders, college students, and young adults only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers). Due to changes in the amphetamines questions 2013 data for any illicit drug and any illicit drug other than marijuana are based on half the *N* indicated. For any illicit drug including inhalants, 8th and 10th grades, college students, and young adults are based on one half the N indicated for 2013; 12th graders are based on one sixth of *N* indicated in 2013.

[2]In 2001 the question text was changed on half of the questionnaire forms for each age group. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. For 8th, 10th, and 12th graders only: The 2001 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed to the new wording. The data are based on all forms beginning in 2002. Data for any illicit drug other than marijuana and data for hallucinogens are also affected by these changes and have been handled in a parallel manner. Beginning in 2014 LSD and hallucinogens other than LSD based on five of six forms; *N* is five sixths of *N* indicated. Hallucinogens was also effected by this change.

[3]For 12th graders, college students, and young adults only: Data based on five of six forms in 1991–1998; *N* is five sixths of *N* indicated. Data based on three of six forms beginning in 1999; *N* is three sixths of *N* indicated.

[4]Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

[5]For 12th graders and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated. Questions about nitrite use were dropped from the young adult questionnaires in 1995 and from the 12th-grade questionnaires in 2010.

[6]Hallucinogens are unadjusted for underreporting of PCP.

[7]For 12th graders, college students, and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated. For 12th graders only: In 2011 the flavored alcoholic beverage question text was changed. Skyy Blue and Zima were removed from the list of examples. An examination of the data did not show any effect from the wording change. In 2014 the PCP triplet was dropped from one form and replaced with a single annual use question in a different form.

(Footnotes continued on next page.)

Footnotes for Tables A-1 through A-4 (cont.)

[8]For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on one third of *N* indicated in 1997–2001 due to changes in the questionnaire forms. Data based on two of four forms beginning in 2002; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms beginning in 2002; *N* is two sixths of *N* indicated. For college students and young adults only: Data based on two of six forms in 1991–2001; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2002; *N* is three sixths of *N* indicated. For all levels: In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form at each level. The 2013 and 2014 "Original wording" data reported here are for only the questionnaires using the original question wording. The 2014 and 2015 data reported here are for only the questionnaires using the "Revised wording" which includes "Molly." For 8th and 10th grades the "Original wording" data are based on two of four forms in 2013 and 2014, *N* is one half of *N* indicated; the "Revised wording" data are based on one of four forms in 2014, *N* is one third of *N* indicated and based on three of four forms beginning in 2015, *N* is five sixths of *N* indicated. For 12th grade the "Original wording" data are based on two of six forms in 2013 and 2014, *N* is two sixths of *N* indicated; the "Revised wording" data are based on one of four forms in 2014, *N* is one sixth of *N* indicated and based on three of six forms beginning in 2015, *N* is three sixths of *N* indicated. For college students and young adults the "Original wording" data are based on three of six forms in 2013 and 2014, *N* is three sixths of *N* indicated; the "Revised wording" data are based on one of six forms in 2014, *N* is one sixth of *N* indicated and based on four of six forms beginning in 2015, *N* is four sixths of *N* indicated.

[9]For college students and young adults only: Data based on five of six forms from 2002-2018; *N* is five sixths of *N* indicated. Beginning in 2019, data based on one of six forms; *N* is one sixth of *N* indicated.

[10]For 12th graders only: Data based on four of six forms from 1991-2018; *N* is four sixths of *N* indicated. For college students and young adults only: Data based on four of six forms; *N* is four sixths of *N* indicated. Beginning in 2019, data based on one of six forms; *N* is one sixth of *N* indicated.

[11]In 1995, the heroin question was changed in one of two forms for 8th and 10th graders, in three of six forms for 12th graders, and in two of six forms for college students and young adults. Separate questions were asked for use with and without injection. In 1996, the heroin question was changed in all remaining 8th- and 10th-grade forms. Data presented here represent the combined data from all forms. For 8th and 10th graders only: Beginning in 2015 data based on three of four four forms; *N* is two thirds of *N* indicated.

[12]For 8th and 10th graders only: Data based on one of two forms in 1995; *N* is one half of *N* indicated. Data based on all forms beginning in 1996. For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated.

[13]Only drug use not under a doctor's orders is included here.

[14]For 12th graders, college students, and young adults only: In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2003, the remaining forms were changed to the new wording. The data are based on all forms beginning in 2003. In 2013 the list of examples was changed on one form: MS Contin, Roxycodone, Hydrocodone (Lortab, Lorcet, Norco), Suboxone, Tylox, and Tramadol were added to the list. An examination of the data did not show any affect from the wording change.

[15]For 8th, 10th, and 12th graders: In 2009, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. In 2010 the remaining forms were changed in a like manner. In 2011 the question text was changed slightly in one form; bennies, Benzedrine and Methadrine were dropped from the list of examples. An examination of the data did not show any effect from the wording change. In 2013 the question wording was changed slightly in two of the 8th and 10th grade questionnaires and in three of the 12th grade questionnaires. The new wording in 2013 asked "On how many occasions (if any) have taken amphetamines or other prescription stimulant drugs…" In contrast, the old wording did not include the text highlighted in red. Results in 2013 indicated higher prevalence in questionnaires with the new wording as compared to the old wording; it was proportionally 61% higher in 8th grade, 34% higher in 10th grade, and 21% higher in 12th grade. 2013 data are based on the changed forms only; for 8th, 10th, and 12th graders *N* is one half of *N* indicated. In 2014 all questionnaires included the new, updated wording.

[16]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. In 2011 the flavored alcoholic beverage question text was changed. Skyy Blue and Zima were removed from the list of examples. An examination of the data did not show any effect from the wording change.

[17]For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. Provigil was dropped from the study in 2012. For college students and young adults only: Beginning in 2009 Salvia data based on one of six forms; *N* is one sixth of *N* indicated. Data based on two of six forms in 2010, 2011, and from 2017 forward; N is two sixths of *N* indicated. Data based on three of six forms from 2012-2016; *N* is three sixths of *N* indicated. For Synthetic Marijuana data based on two of six forms in 2011; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2012; *N* is three sixths of *N* indicated. For Bath Salts data based on three of six forms; *N* is three sixths of *N* indicated.

(Footnotes continued on next page.)

Footnotes for Tables A-1 through A-4 (cont.)

[18]For 12th graders only: In 2004 the question text was changed in half of the questionnaire forms. Barbiturates was changed to sedatives, including barbiturates. Goofballs, yellows, reds, blues, and rainbows were deleted from the list of examples; Phenobarbital, Tuinal, Nembutal, and Seconal were added. An examination of the data did not show any effect from the wording change. In 2005 the remaining forms were changed in a like manner. In 2013 the question text was changed in all forms: Tuinal, Nembutal, and Seconal were replaced with Ambien, Lunesta, and Sonata. In one form the list of examples was also changed: Tuinal was dropped from the list and Dalmane, Restoril, Halcion, Intermezzo, and Zolpimist were added. An examination of the data did not show any effect from the wording change. In 2013 the college student and young adult questionnaires were changed in a like manner. An examination of the data showed an affect from the wording change. For this reason 2012 and 2013 data are not comparable.

[19]For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. Methaqualone was dropped from the study in 2013. For college students and young adults only: Data based on three of six forms from 2011-2013. *N* is three sixths of *N* indicated. Beginning in 2014, data based on 2 of 6 forms. *N* is two sixths of *N* indicated.

[20]The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers… without a doctor telling you to use them.

[21]For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on three of four forms in 1997–1998; *N* is two thirds of *N* indicated. Data based on two of four forms in 1999–2001; *N* is one third of *N* indicated. Data based on one of four forms beginning in 2002; *N* is one sixth of *N* indicated. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms in 2002–2009; *N* is two sixths of *N* indicated. Data for 2001 and 2002 are not comparable due to changes in the questionnaire forms. Data based on one of six forms beginning in 2010; *N* is one sixth of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated.

[22]For 8th, 10th, and 12th graders only: In 1993, the question text was changed slightly in half of the forms to indicate that a drink meant more than just a few sips. The 1993 data are based on the changed forms only; *N* is one half of *N* indicated for these groups. In 1994 the remaining forms were changed to the new wording. The data are based on all forms beginning in 1994. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005. For college students and young adults: The revision of the question text resulted in rather little change in the reported prevalence of use. The data for all forms are used to provide the most reliable estimate of change.

[23]For all grades: In 2012 the alcoholic beverage containing caffeine (like Four Loko or Joose) question text was changed to alcoholic beverage mixed with an energy drink (like Red Bull). The data in 2011 and 2012 are not comparable due to this question change. For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. For college students and young adults only: been drunk data based on three of six forms; *N* is three sixths of *N* indicated. Alcoholic beverages mixed with energy drinks data based on two of six forms; *N* is two sixths of *N* indicated.

[24]For 8th and 10th graders only: Data based on one of two forms for 1991–1996 and on two of four forms beginning in 1997; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. For 8th, 10th, and 12th graders only: Snus and dissolvable tobacco were added to the list of examples in 2011. An examination of the data did not show any effect from the wording change. For college students and young adults only: Questions about smokeless tobacco use were dropped from the analyses in 1989.

[25]For 8th and 10th graders only: In 2006, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in half of the questionnaire forms An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed in a like manner. For 12th graders only: Data based on two of six forms in 1991–2005; *N* is two sixths of *N* indicated. In 2006 a slightly altered version of the question was added to a third form. An examination of the data did not show any effect from the wording change. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in two of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining form was changed in a like manner.

[26]For college students and young adults only: Data based on two of six forms in 1990–2009; *N* is two sixths of *N* indicated. In 2008, the question text was changed slightly.

[27]For 12th graders only: Data based on two of six forms in 2002–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated.

[28]For college students and young adults only: Data based on two of six forms through 2009; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2010; *N* is three sixths of *N* indicated.

(Footnotes continued on next page.)

Footnotes for Tables A-1 through A-4 (cont.)

[29]For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001; *N* is three sixths of *N* indicated. Data based on one of six forms beginning in 2002; *N* is one sixth of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2010; *N* is three sixths of *N* indicated. Data based on two of six forms beginning in 2012; *N* is two sixths of *N* indicated.

[30]For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001–2009; *N* is three sixths of *N* indicated. Data based on two of six forms beginning in 2010; *N* is two sixths of *N* indicated. For college students and young adults only: Data based on two of six forms; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2010; *N* is three sixths of *N* indicated.

[31]For 12th graders only: The 2003 flavored alcoholic beverage data were created by adjusting the 2004 data to reflect the observed 2003 to 2004 change in a slightly different version of the flavored alcoholic beverage question. In 2004 the original question was revised to include wine coolers among the examples—a change that had very little effect on the observed prevalence-of-use rate.

[32]For 12th graders only: Data based on two of six forms in 2000–2008; *N* is two sixths of *N* indicated. Beginning in 2009 data based on one of six forms; *N* is one sixth of *N* indicated.

[33]Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes and smokeless tobacco, for which actual daily use is measured, and for 5+ drinks, for which the prevalence of having five or more drinks in a row in the last two weeks is measured.

[34]For 8th and 10th graders only: Data based on two of four forms. *N* is one third of *N* indicated. For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated. For college students and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated.

[35]For 8th and 10th graders only: Data based on two of four forms; *N* is one third of *N* indicated. For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. For college students and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated.

[36]For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. For 12th graders only: Data based on two of six forms. *N* is two sixths of *N* indicated. For college students and young adults only: Data based on one of six forms; *N* is one sixth of *N* indicated.

[37]In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions.

Monitoring the Future website:
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