National Institute on Drug Abuse

NATIONAL SURVEY RESULTS ON DRUG USE
from
THE MONITORING THE FUTURE STUDY, 1975-1998

Volume II

College Students and Young Adults

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
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College Students and Young Adults

by

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Chapter 1

INTRODUCTION TO VOLUME II

This is the second volume in a two-volume set reporting the results of all surveys through 1998 from the Monitoring the Future study of American secondary school students, college students, and young adults. Monitoring the Future is a long-term research program conducted at the University of Michigan's Institute for Social Research under a series of research grants from the National Institute on Drug Abuse. It is comprised of an ongoing series of annual national surveys of American *high school seniors* begun in 1975—the results of which are presented in Volume I—as well as a series of annual *follow-up surveys* of representative samples of the previous participants from each high school senior class going back to the Class of 1976. In 1991, the study also began to survey eighth and tenth grade students; the results from these surveys are included in Volume I. This second volume presents the results of the 1977 through 1998 follow-up surveys of the graduating high school classes of 1976 through 1997 as these respondents have progressed through young adulthood.

In order for this volume to stand alone, some material from Volume I is repeated here. Specifically, Chapter 2 in this volume is the same as Chapter 2, Volume I, and provides an overview of the key findings presented in both volumes. Chapter 3, Study Design and Procedures, is also the same as Chapter 3, Volume I. Therefore, the reader already familiar with Volume I will want to skip over these chapters. Otherwise, the content of the two volumes does not overlap.

SURVEYS OF COLLEGE STUDENTS

The follow-up samples in Monitoring the Future provide very good coverage of the national college student population since 1980. College students tend to be a difficult population to study. They generally are not well covered in normal household surveys, which typically exclude dormitories, fraternities, and sororities from the universe covered. Further, the institution-based samples must be quite large to attain accurate national representation of college students because there is great heterogeneity in the types of student populations served in those institutions. There also may be problems getting good samples and high response rates within many institutions. The current study, which in essence draws the college sample in senior year of high school, has considerable advantages for generating a broadly representative sample of the college students to emerge from each graduating cohort, and it does so at very low cost. Further, it has "before" as well as "during" and "after" college measures, which permit the examination of change. For comparison purposes, it also has similar panel data on the high school graduates who do not attend college.

As defined here, the college student population is comprised of all full-time students, one to four years post-high school, enrolled in a two- or four-year college in March during the year of the survey. More will be said about this sample definition in Chapters 3 and 8. Results on the *prevalence* of drug use among college students in 1998 are reported in Chapter 8, and results on the *trends* in substance use among college students over the past 15 surveys are reported in Chapter 9.

SURVEYS OF YOUNG ADULTS

The young adult sample, on which we report here, includes the college students and is comprised of representative samples from each graduating class from 1984 to 1997, all surveyed in 1998. Since 18 is the modal age of high school seniors, the young adults covered here correspond to modal ages 19 through 32. Because the study design calls for annual follow-up surveys through age 32, and then less frequent surveys beginning at age 35, the classes of 1976 through 1983 were not surveyed in 1998; the two exceptions were the classes of 1976 and 1981, members of which were sent special "age 40" and "age 35" questionnaires. The results of these surveys are not included in the present volume, but will be included in future reports from the study.

In this volume we have re-weighted the respondents to correct for the effects of panel attrition on measures such as drug use; however, we are less able to adjust for the absence of high school dropouts who were not included in the original high school senior sample. Because nearly all college students have completed high school, the omission of dropouts should have almost no effect on the college student estimates, but this omission does have an effect on the estimates for entire age groups. Therefore, the reader is cautioned that the omission of the 15% to 20% of each cohort who drop out of high school will make the drug use estimates given here for the various young adult age bands somewhat low for the age group as a whole. The proportional effect may be greatest for some of the most dangerous drugs such as heroin and crack, and also for cigarettes—the use of which is highly correlated with educational aspirations and attainment.

GENERAL PURPOSES OF THE RESEARCH

The research purposes of the Monitoring the Future study are extensive and can be sketched only briefly here.[1] One major purpose is to serve a social monitoring or social indicator function, intended to characterize accurately the levels and trends in certain behaviors, attitudes, beliefs, and conditions in the population. Social indicators can have important agenda-setting functions for society, and are useful for gauging progress against national goals. Another purpose of the study is to develop knowledge which increases our understanding of why changes in these behaviors, attitudes, etc., are taking place. (In health-related disciplines, such work is usually labeled epidemiology.) These two purposes are addressed in the current series of volumes. There are a number of other purposes for the research, however, which are addressed through other types of publications and professional products. They include: helping to determine what types of young people are at greatest risk for developing various patterns of drug abuse; gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how those orientations are shifting over time; determining the immediate and more general aspects of the social environment that are associated with drug use and abuse; determining how drug use is affected by major transitions into and out of social environments (such as military service, civilian employment, college, unemployment) or social roles (marriage, pregnancy, parenthood). We also are interested in determining the life

[1]For a more complete listing and discussion of the study's many objectives, see Johnston, L.D., O'Malley, P.M., Bachman, J.G., and Schulenberg, J. (1993). *The aims, objectives, and rationale of the Monitoring the Future study*. Monitoring the Future Occasional Paper No. 34. Ann Arbor, MI: Institute for Social Research.

course of the various drug-using behaviors during this period of development; distinguishing such "age effects" from cohort and period effects in determining drug use; determining the effects of social legislation on various types of substance use; and determining the changing connotations of drug use and changing patterns of multiple drug use among youth. We believe that the differentiation of period, age, and cohort effects in substance use of various types has been a particularly important contribution of the project; its cohort-sequential research design is especially well-suited to allow such differentiation. Readers interested in publications dealing with any of these other areas, or wishing to receive a copy of a brochure listing publications from the study, should write the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248. Up-to-date information about the study, including copies of the most recent press releases, may be found on the Monitoring the Future web site at: www.isr.umich.edu/src/mtf .

Chapter 2

OVERVIEW OF KEY FINDINGS

This two-volume monograph reports the findings through 1998 of the ongoing research and reporting series entitled Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth. Over its twenty-four year existence, the study has consisted of in-school surveys of nationally representative samples of (a) high school seniors each year since 1975 and (b) eighth and tenth grade students each year since 1991. In addition, beginning with the Class of 1976, follow-up surveys have been conducted by mail on representative subsamples of the respondents from each previously participating twelfth grade class.

Volume I of this report presents findings on the prevalence and trends in drug use and related factors for secondary school students (eighth, tenth, and twelfth graders); Volume II presents the comparable results for young adult high school graduates 19-32 years old, as well as college students specifically. Trend data are presented for varying time intervals, covering up to a 23 year interval in the case of the twelfth graders. For college students, a particularly important subset of the young adult population, for which very little nationally representative data exists, we present detailed prevalence and trend results covering an eighteen year interval (since 1980).

The high school dropout segment of these populations—about 15%-20% of an age group by the end of senior year—is of necessity omitted from the coverage, though this omission should have a negligible effect on the coverage of college students. Appendix A of Volume I discusses the likely impact of omitting dropouts from the sample coverage at twelfth grade. Very few students will have left school by eighth grade, of course, and relatively few by the end of tenth grade, so the results of the school surveys at those levels should be generalizable to the great majority of the relevant age cohorts.

A number of important findings have emerged for these five national populations—eighth grade students, tenth grade students, twelfth grade students, college students, and all young adults through age 28 who are high school graduates. They have been summarized and integrated in this chapter so that the reader may quickly get an overview of the key results. Because so many populations, drugs, and prevalence intervals are discussed here, a single integrative table (Table 2-1 through 2-3) showing the 1991-1998 trends for all drugs on all five populations is included in this chapter.

TRENDS IN ILLICIT DRUG USE

- In the last several volumes in this series we have noted an increase in the use of a number of illicit drugs among the secondary students and some important reversals among them in terms of certain key attitudes and beliefs. In the volume reporting 1992 survey results, we noted the beginning of such reversals in both use and attitudes among eighth graders, the youngest respondents surveyed in this study, and also a reversal in attitudes among the

twelfth graders. Specifically, the proportions seeing great risk in using drugs began to decline as did the proportions saying they disapproved of use. As predicted earlier, those reversals indeed presaged ". . . an end to the improvements in the drug situation that the nation may be taking for granted." The use of illicit drugs rose sharply in all three grade levels after 1992, as negative attitudes and beliefs about drug use continued to erode. This pattern continued for some years. In 1997, for the first time in 6 years, illicit drug use began to decline among the eighth graders. Use of marijuana continued to rise among tenth and twelfth graders, although their use of a number of other drugs appears to have leveled off and relevant attitudes and beliefs also began to reverse in many cases. In 1998, illicit drug use continued a gradual decline among eighth graders and started to decline at tenth and twelfth grades.

- Until 1997, ***marijuana*** use rose sharply among secondary school students and their use of a number of ***other illicit drugs*** rose more gradually. The increase in marijuana use also began to show up among American college students, no doubt due in large part to "generational replacement," wherein earlier graduating high school class cohorts are replaced in the college population by more recent ones who were more drug experienced, even before they left high school. A resurgence in illicit drug use spreading *up* the age spectrum is a reversal of the way the epidemic spread several decades earlier. In the 1960s the epidemic began on the nation's college campuses, and then the behavior diffused downward in age to high school students and eventually to junior high school students.

  At present there still is rather little increase in illicit drug use in the young adult population, 19-28 years old, taken as a whole. In fact, from 1991 through 1996, the use of illicit drugs other than marijuana (taken as a class) declined among young adults at the same time as adolescent use rose. The past few years there has been a leveling among young adults, and we predict that generational replacement will begin to move the numbers up for this group, as well. In fact, that now appears to be happening among college students, who showed a significant rise in marijuana use in 1998, and their use of a couple of other classes of illicit drugs (MDMA and cocaine) has risen over the prior 2 year interval.

  These diverging trends across the different age groups show that changes during the 1990s reflect some cohort effects—lasting differences between class cohorts—rather than broad secular trends, which have characterized most of the previous years covered by the study. Typically, use has moved in parallel across most age groups.

- A parallel finding occurred for ***cigarette*** smoking, as well, in that college students showed a sharp increase in smoking, beginning in 1995, no doubt reflecting a generational replacement effect. (Smoking had been rising among

high school seniors since 1992.) This has been a more typical pattern of change for ***cigarettes***, since differences in cigarette smoking rates among class cohorts tend to remain through much or all of the life cycle and also tend to account for much of the change in use which is observed at any given age. Now, smoking among American college students shows a continuing pattern of increase, even though smoking among younger age groups has started to turn downward.

- In 1997, ***marijuana*** use, which had been rising sharply in all three grades of secondary school, leveled for eighth graders and decelerated for tenth and twelfth graders. In 1998, marijuana use declined significantly among the tenth graders, while eighth and twelfth graders' use leveled. In the 1990s, the annual use of marijuana (i.e., percentages reporting any use during the prior twelve months) nearly tripled among eighth graders (from 6% in 1991 to 17% in 1998), more than doubled among tenth graders (from 15% in 1992 to 31% in 1998), and grew by nearly 80% among twelfth graders (from 22% in 1992 to 38% in 1998). Among college students, however, the increase in marijuana use, presumably due to a "generational replacement effect," was much more gradual. Annual prevalence rose by about one-third from 27% in 1991 to 36% in 1998. Among young adults there was less change, from 24% in 1991 to 27% in 1996, with prevalence leveling thereafter.

  Daily marijuana use rose substantially among secondary school and college students between 1992 and 1997, but somewhat less so among young adults, before leveling in both groups in 1998 (Table 2-3). More than one in twenty (5.6%) twelfth graders are now current daily marijuana users. Still, this rate is far below the 10.7% peak figure reached in 1978. Daily use among eighth graders decreased significantly in 1997, for the first time in the 1990s. It had risen steadily from 0.2% in 1992 to 1.5% in 1996, before falling to 1.1% in 1997, where it remained in 1998.

  The critical variables of perceived risk and disapproval had been falling sharply for marijuana in all grades between 1992 and 1994. (The declines in perceived risk actually started at least a year earlier for eighth and tenth graders.) In virtually all cases, however, the steep downward slope in these trend lines was moderated in 1995. (This coincided with the launching of the anti-marijuana ad campaign in January 1995, by the Partnership for a Drug Free America.) Eighth graders' perceived risk of marijuana use increased significantly in 1998, while disapproval rose only slightly; and perceived risk and disapproval rose slightly or leveled for tenth and twelfth graders in 1998.

- Among seniors, the proportions using ***any illicit drug other than marijuana*** in the past year rose to 21% in 1997, from a low of 15% in 1992, which was substantially below the 34% peak rate in 1981. By way of contrast, there was very little change for young adults on this measure after 1991 (Table 2-2). All

of the younger groups showed significant increases but not as large in proportional terms as was true for marijuana. Use of any illicit drug other than marijuana began to increase in 1992 among eighth graders, in 1993 among tenth and twelfth graders, and in 1995 among college students. Use peaked in 1996 among the eighth graders, and by 1997 among the tenth graders, twelfth graders, college students and young adults. All five groups showed a slight decline in 1998, although none of the changes were significant.

- Between 1989 and 1992 we noted an increase among college students and young adults in the use of ***LSD***, a drug most popular in the late 1960s and early 1970s. In 1992, all five populations showed an increase in annual prevalence of LSD; for four subsequent years, modest increases persisted among the secondary school students. Use of LSD in all three grades leveled in 1997 and showed some (nonsignificant) decline in 1998. Use of LSD among college students and young adults peaked around 1995 and has declined significantly in both groups since then.

  Prior to the significant increase in LSD use among seniors in 1993, there was a significant 4.3 percentage point decline between 1991 and 1992 in the proportion seeing great risk associated with trying LSD. The decline in this belief continued through 1997, then halted in 1998. The proportion of seniors disapproving of LSD use also began to decline in 1992 and continued through 1996, halting in 1997.

  Because LSD was one of the earliest drugs to be popularly used in the overall American drug epidemic, there is a distinct possibility that young people—particularly the youngest cohorts, like the eighth graders—are not as concerned about the risks of use. They have had less opportunity to learn vicariously about the consequences of use by observing others around them, or to learn from intense media coverage of the issue. We were concerned that this type of "generational forgetting" of the dangers of a drug, which occurs as a result of generational replacement, could set the stage for a whole new epidemic of use. In fact, perceived harmfulness of LSD began to decline after 1991 among seniors. These measures for risk and disapproval were first introduced for eighth and tenth graders in 1993 and both measures had been dropping until 1997 when perceived risk and disapproval leveled. Now, however, these declines may be in the process of being reversed.

- The use of prescription-controlled ***amphetamines***—one of the most widely used classes of drugs taken illicitly (i.e., outside of medical regimen)—increased by about half among eighth and tenth graders between 1991 and 1996. In 1997, use declined significantly among eighth graders and leveled among tenth graders, but use continued to increase among twelfth graders. In 1998, use continued to decline in eighth and tenth grade and leveled in twelfth grade.

Annual prevalence rates for the use of amphetamines among seniors fell substantially between 1982 and 1992, from 20% to 7%; rates among college students fell over the same interval, from 21% to 4%. The increase in use of illicit amphetamines (and a decrease in disapproval) began among seniors in 1993, following a sharp drop in perceived risk a year earlier (which often serves as an early warning signal). Following a period of decline, disapproval and perceived risk associated with amphetamine use stabilized in 1997 among seniors, while use showed a leveling. In 1998, there was a sharp rise in perceived risk (up 4.3 percentage points), which we expect presages a decline in use next year. This pattern of change is consistent with our theoretical position that perceived risk can drive both disapproval and use.

College students showed a modest increase in amphetamine use during the 1990s, but the absolute prevalence rates are only about half those for tenth and twelfth graders.

- The ***inhalants*** constitute another class of abusable substances where a troublesome increase was followed by a reversal among secondary school students—this time after 1995. Inhalants are defined as fumes or gases that are inhaled to get high, including common household substances such as glues, aerosols, butane, and solvents. One class of inhalants, ***amyl and butyl nitrites***, became somewhat popular in the late 1970s, but their use has been almost eliminated. For example, their annual prevalence rate among twelfth-grade students was 6.5% in 1979 but only 1.4% in 1998.

  When the nitrites are removed from consideration it appears that all other inhalants taken together showed an upward trend in annual use until 1995. It is worth noting that, largely as a result of the findings from the Monitoring the Future survey reporting the rise in inhalant use, the Partnership for a Drug Free America launched an anti-inhalant ad campaign in mid-April of 1995. By the 1996 spring survey of eighth and tenth graders (twelfth graders are not asked about the dangers of inhalants) there was a sharp increase (of three to six percentage points, depending on the measure) in the percent who said that using inhalants carries great risk to the user. Inhalant use in all grades began to decline in 1996, and continued declining since, after a long and steady increase in the preceding years. This is all the more noteworthy because illicit drug use generally was still increasing in 1996 and (for the upper two grades) in 1997 as well.

  Some 11% of the 1998 eighth graders and 8% of the tenth graders indicated use in the prior 12 months, making inhalants the second most widely used class of illicitly used drugs for eighth graders (after marijuana) and the third most widely used (after marijuana and amphetamines) for the tenth graders. Inhalants can and do cause death, and tragically, this often occurs among youngsters in their early teens. Because the use of inhalants decreases with

age, this class of drugs shows an unusual pattern, with active use being highest among the eighth graders (11% annual prevalence in 1998) and lowest among the young adult population (annual prevalence 2% in 1998).

- ***Crack*** cocaine use spread rapidly in the early- to mid-1980s. Among high school seniors, the overall prevalence of crack leveled in 1987 at relatively low prevalence rates (3.9% annual prevalence), even though crack use still continued to spread to new communities. Annual prevalence dropped sharply in the next few years, reaching 1.5% by 1991, where it remained through 1993. Then it rose gradually to 2.4% by 1997 before leveling in 1998.

  Among eighth and tenth graders, crack use has risen gradually in the 1990s: from 0.7% in 1991 to 2.1% by 1998 among eighth graders, and from 0.9% in 1992 to 2.5% in 1998 among tenth graders. In contrast, among young adults one to ten years past high school, annual prevalence was 1.1% in 1998, virtually unchanged since 1991. Nor was there much change in the low rates of crack use among college students during the 1990s, although an (not statistically significant) increase did show up in 1998. There does not yet seem to be a turnaround in the crack situation, as we have seen for most other drugs, and perceived risk continued to decline in 1998 at all grade levels.

  Among seniors, annual crack prevalence among the college-bound is considerably lower than among those not bound for college (1.9% for college-bound vs. 4.6% for noncollege-bound, in 1998).

  We believe that the particularly intense and early media coverage of the hazards of crack cocaine likely had the effect of "capping" an epidemic early, by deterring many would-be users and by motivating many experimenters to desist use. When we first measured crack use in 1987, we found that it had the highest level of perceived risk of any of the illicit drugs. While 4.4% of seniors in 1998 report ever having tried crack, only 1.0% report use in the past month, indicating that 77% of those who tried crack did not establish a pattern of continued frequent use.

  Although crack use did not increase in 1993, perceived risk and disapproval dropped in all three grade levels, predicting the rise in use in all three grades between 1994 and 1998. Because more than a decade has now passed since the media frenzy about crack use peaked in 1986, it is possible that generational forgetting of the risks of that drug has been occurring.

- ***Cocaine***[2] in general began to decline a year earlier than crack, probably because crack was still diffusing to new parts of the country. Between 1986 and 1987 the annual prevalence rate dropped dramatically, by roughly one

[2]Unless otherwise specified, all references to "cocaine" refer to the use of cocaine in any form, including crack.

fifth in all three populations then studied—seniors, college students, and young adults. The decline occurred when young people began to view experimental and occasional use—the type of use in which they are most likely to engage—as more dangerous. This change had occurred by 1987, probably partly because the hazards of cocaine use received extensive media coverage in the preceding year, but almost surely in part because of the highly-publicized cocaine-related deaths in 1986 of sports stars Len Bias and Don Rogers. By 1992, annual prevalence of cocaine use had fallen by about two-thirds among the three populations for which long-term data are available (twelfth graders, college students, and young adults).

In 1993, cocaine use remained stable among secondary students but continued to decline among college students and young adults through 1994. From 1994 through 1996, annual use rose among eighth, tenth, and twelfth graders and college students, but remained stable among young adults. All groups except eighth graders showed some continued upward drift in overall cocaine use since 1996.

Again, the story regarding attitudes and beliefs is informative. Having risen substantially since 1986, the perceived risk of using cocaine actually showed some (nonsignificant) decline in 1992 among seniors. In 1993, perceived risk for cocaine other than crack fell sharply in all grades and disapproval began to decline in all grades, though not as sharply as perceived risk. Perceived risk has declined in all three grades in the years since. Disapproval declined between 1991 and 1995 among eighth graders, before leveling, and between 1992 though 1996 among tenth and twelfth graders. These changes foretold a subsequent leveling of use at each grade level.

Through 1989, there was no decline in perceived availability of cocaine among twelfth graders; in fact, it rose steadily from 1983 to 1989, suggesting that availability played no role in bringing about the substantial downturn in use after 1986. After 1989, however, perceived availability fell some among seniors; the decline may be explained by the greatly reduced proportions of seniors who said they have any friends who use, because friendship circles are an important part of the supply system. Since 1992 there has been rather little change in eighth and tenth grade reports of availability of powder cocaine. Among seniors, reported availability declined from 1992 to 1994, before leveling.

As with all the illicit drugs, lifetime cocaine prevalence climbs with age, reaching 27% by age 32. Unlike all of the other illicit drugs, active use of cocaine—i.e., annual prevalence or monthly prevalence—holds fairly steady after high school (and until recent years increased in use after high school) rather than declining.

- ***PCP*** use fell sharply among high school seniors between 1979 and 1982, from an annual prevalence of 7.0% to 2.2%. It reached a low point of 1.2% in 1988 and stands at 2.1% in 1998. For the young adults, the annual prevalence rate is now only 0.6% (although this is the highest rate it has reached in the 1990s).

- The annual prevalence of ***heroin*** use among twelfth graders fell by half between 1975 (1.0%) and 1979 (0.5%). It then stabilized for some fifteen years until 1994 (0.6%), before rising significantly to 1.1% in 1995. There has been little change since then (1.0% in 1998). Among young adults and college students, heroin statistics also were quite stable at low rates (about 0.1% to 0.2%) through 1994, followed by an increase in 1995.

  Eighth and tenth graders showed an increase in heroin use from 1993 through 1996. Then, eighth graders' use of heroin decreased significantly to 1.3% in 1997, where it stayed in 1998, while tenth graders' use leveled by 1998. Their annual prevalence rates are roughly double what they were in the early 1990s. Two factors that very likely contributed to the upturn in heroin use in the 1990s are: (1) a long-term decline in the perceived dangers of heroin due to "generational forgetting" (the last major heroin epidemic occurred around 1970), and (2) the fact that in recent years heroin could be used without injection, thus lowering an important psychological barrier for many potential users by making heroin seem safer and perhaps less addictive. Using some new questions on heroin use introduced in 1995, we are able to show that significant proportions of past-year users in grades eight, ten, and twelve, are indeed taking heroin by means other than injection. (See Chapter 4 for details.)

  The risk perceived to be associated with heroin fell for more than a decade after the study began, with 60% of the 1975 seniors seeing a great risk of trying heroin once or twice and only 46% of the 1986 seniors saying the same. Since the last major heroin epidemic occurred around 1970, we view this steady decline in perceived risk as a case of "generational forgetting" of the drug's dangers. Between 1986 and 1991 perceived risk rose some, from 46% to 55%, undoubtedly reflecting the newly recognized threat of HIV infection associated with heroin injection. After 1991, however, perceived risk fell again (to 51% by 1995), this time perhaps reflecting the fact that the newer heroin available on the street could be administered by methods other than injection because it was so much more pure. In 1996, perceived risk among seniors began to rise once again, and then rose sharply by 1997 and continued to rise in 1998—this time perhaps as the result of an anti-heroin campaign launched by the Partnership for a Drug Free America in June 1996, as well as the visibility of heroin-related deaths of some celebrities in the entertainment and fashion design worlds.

Questions about the degree of risk perceived to be associated with heroin use were first introduced into the questionnaires for eighth and tenth graders in 1995, and they asked specifically about use "without using a needle," because we thought this was the form of heroin use of greatest concern at that point. (Similar questions were asked of twelfth graders, as well, in one of the six questionnaire forms.) In general, perceived risk in all three grades rose in 1996 and 1997, before leveling in 1998.

- The use of ***narcotics other than heroin*** had been fairly level over most of the life of the study. Seniors had an annual prevalence rate of 4% to 6% from 1975 to 1990. In 1991, however, a significant decline (from 4.5% to 3.5%) was observed. Use stayed at this level for a few years, before increasing significantly from 3.6% in 1993 to 6.3% by 1998. Young adults in their twenties generally showed a very gradual decline from 3.1% in 1986 to 2.2% in 1993; college students likewise showed a slow decrease, from 3.8% between 1982 and 1984 to 2.5% in 1993. Over the last 4 or 5 years, however, the young adults have shown a modest increase, to 3.4% in 1998 as have the college students (4.2% in 1998). (Data are not reported for eighth and tenth graders because we believe younger students are not accurately discriminating among the drugs that should be included or excluded from this general class.)

- A long, substantial decline, which began in 1977, occurred for ***tranquilizer*** use among high school seniors. By 1992, annual prevalence reached 2.8%, down from 11% in 1977. Since 1992, use has increased significantly, reaching 5.5% in 1998. Reported tranquilizer use also exhibited some recent, modest increase among eighth graders, from 1.8% in 1991 to 3.3% in 1996, before declining to 2.6% in 1998. Among tenth graders, annual prevalence remained stable between 1991 and 1994, at around 3.3%, increased significantly to 4.6% by 1996 and then leveled. After a period of stability, college students also showed some increase between 1994 and 1998. For the young adult sample, annual prevalence increased significantly in 1998, after a long period of decline.

- The long-term gradual decline in ***barbiturate*** use, which began at least as early as 1975, when the study began, halted in 1988. Annual prevalence among seniors had fallen by more than two-thirds, from 10.7% in 1975 to 3.2% in 1988. It then hovered around 3.4% through 1991 before dropping further to 2.8% by 1992. Use then rose steadily to 5.5% in 1998—still only about half of the rate in the peak year. The 1998 annual prevalence of this class of sedative drugs is lower among young adults and college students (both 2.5%) than among seniors (5.5%). Use among college students began to rise a couple of years later than it did among twelfth graders, no doubt reflecting the impact of generational replacement. Use has increased only slightly so far among young adults. (Data are not included here for eighth and

tenth grades, because we believe the younger students have more problems with the proper classification of the relevant drugs.)

- ***Methaqualone***, another sedative drug, has shown quite a different trend pattern than barbiturates. Its use rose steadily among seniors from 1975 to 1981, when annual prevalence reached 8%. Its use then fell very sharply, declining to 0.2% by 1993, before rising significantly to 1.1% by 1996, where it has leveled. Use also fell among all young adults and among college students, who had annual prevalence rates of only 0.3% and 0.2%, respectively, by 1989—the last year they were asked about this drug. In the late 1980s, shrinking availability may well have played a role in this drop, as legal manufacture and distribution of the drug ceased. Because of its very low usage rates, only the seniors are now asked about use of this drug.

- In sum, five classes of illicitly used drugs, ***marijuana***, ***cocaine***, ***amphetamines***, ***LSD***, and ***inhalants*** have had an impact on appreciable proportions of young Americans in their late teens and twenties. In 1998, high school seniors showed annual prevalence rates of 38%, 6%, 10%, 8%, and 6%, respectively. Among college students in 1998, the comparable annual prevalence rates are 36%, 5%, 5%, 4%, and 3%; and for all high school graduates one to ten years past high school (young adults) the rates are 27%, 5%, 5%, 4%, and 2%. It is worth noting that LSD has climbed in the rankings because its use has not declined, and in some cases has increased, during a period in which use of cocaine, amphetamines, and other drugs declined appreciably. The inhalants have become more important in relative terms for similar reasons.

  Clearly, cocaine is relatively more important in the older age group and inhalants are relatively more important in the younger ones. In fact, in eighth grade inhalants are second to marijuana as the most widely used of the illicit drugs.

  Because of their importance among the younger adolescents, a new index of illicit drug use including inhalants was introduced in Table 2-1 through 2-3 in recent years. Certainly the use of inhalants reflects a form of illicit, psychoactive drug use; its inclusion makes relatively little difference in the illicit drug index prevalence rates for the older age groups, but considerable difference for the younger ones. For example, the proportion of eighth graders reporting any illicit drug used in their lifetime, exclusive of inhalants, in 1998 was 29%, whereas including inhalants raised the figure to 38%.

- The annual prevalence among twelfth graders of over-the-counter ***stay-awake pills***, which usually contain caffeine as their active ingredient, nearly doubled between 1982 and 1990, increasing from 12% to 23%. Since 1990 this statistic has fallen slightly to 19% in 1998. Earlier decreases also occurred

among the college-age young adult population (ages 19-22), where annual prevalence was 26% in 1989, but it is now down to 19% in 1998.

The ***look-alikes*** also have shown some fall-off in recent years. Among high school seniors, annual prevalence decreased slightly from 6.8% in 1995 to 5.7% in 1998; among young adults age 19-22, the corresponding figures are 6.0% and 3.2%. Over-the-counter ***diet pills*** have not shown a recent decline: among young adults age 19-22 there had been an earlier decline from 1986 to 1995, with annual prevalence going from 17% to 6.9%; by 1998, however, it had risen slightly, to 8.6%. Among high schools seniors, annual prevalence also declined from 1986 to 1995, from 15% to 10%, where it still stands in 1998. Among seniors in 1998, some 26% of the females had tried diet pills by the end of senior year, 15% used them in the past year, and 8% used them in just the past 30 days.

College-Noncollege Differences in Illicit Drug Use

- American college students (defined here as those respondents one to four years past high school who were actively enrolled full-time in a two- or four-year college) show annual usage rates for several categories of drugs which are about average for all high school graduates their age; these categories include ***any illicit drug***, ***marijuana*** specifically, ***inhalants***, ***hallucinogens other than LSD***, and ***narcotics other than heroin***. For several other categories of drugs, however, college students have rates of use that are below those of their age peers, including ***any illicit drug other than marijuana***, ***hallucinogens***, ***LSD*** specifically, ***cocaine***, ***crack cocaine*** specifically, ***heroin***, ***amphetamines***, ***ice***, ***barbiturates*** and ***tranquilizers***.

  Because college-bound seniors had below average rates of use on all of these illicit drugs while they were in high school, the eventual attainment of parity on many of them reflects some closure of the gap. As results from the study published elsewhere have shown, this college effect of "catching up" is largely explainable in terms of differential rates of leaving the parental home after high school graduation, and of getting married. College students are more likely than their age peers to have left the parental home and its constraining influences and less likely to have entered marriage, with its constraining influences.

- In general, the trends since 1980 in illicit substance use among American college students have paralleled those of their age peers not in college. Most drugs showed a period of substantial decline in use some time after 1980. Further, all young adult high school graduates through age 28, as well as college students taken separately, showed trends which were highly parallel for the most part to the trends among high school seniors up until about 1992. After 1992, a number of drugs showed an increase in use among seniors (as

well as eighth and tenth graders), but not among college students and young adults. This divergence, combined with the fact that the upturn began first among the eighth graders (in 1992), suggests that cohort effects are emerging for illicit drug use. In fact, as those heavier-using cohorts of high school seniors enter the college years, we are beginning to see a lagged increase in the use of a number of drugs in college. For example, annual prevalence reached a low point among twelfth graders in 1992 for a number of drugs (e.g. ***cocaine, amphetamines, barbiturates, tranquilizers, other narcotics, and any illicit drug other than marijuana***) before rising thereafter; among college students, those same drugs reached a low two years later in 1994, and then began to rise gradually. Now, in 1998, as ***marijuana*** use is declining in the three grades of secondary school, we see a sharp increase among college students. A similar pattern is observed for ***MDMA*** (ecstasy), for annual and monthly ***alcohol*** use (but not for binge drinking), and for ***cigarette*** use. The evidence for cohort effects resulting from generational replacement is impressive and consistent with our earlier predictions.

Male-Female Differences in Illicit Drug Use

- Regarding gender differences in three older populations (seniors, college students, and young adults), males are more likely to use *most illicit drugs*, and the differences tend to be largest at the higher frequency levels. ***Daily marijuana use*** among high school seniors in 1998, for example, is reported by 7.7% of males vs. 3.2% of females; among all adults (19-32 years) by 5.2% of males vs. 2.1% of females; and among college students, specifically, by 6.3% of males vs. 2.5% of females. The only consistent exception to the rule that males are more frequent users of illicit drugs than females occurs for ***amphetamine*** use in high school, where females usually are at the same level as males or slightly higher.

- In the eighth and tenth grade samples there are fewer gender differences in the use of drugs—perhaps because girls tend to date and emulate older boys, who are in age groups considerably more likely to use drugs. There is little male-female difference in eighth and tenth grades in the use of ***cocaine*** and ***crack***. ***Amphetamine*** use is slightly higher among females.

TRENDS IN ALCOHOL USE

- Several findings about ***alcohol*** use in these age groups are noteworthy. First, despite the fact that it is illegal for virtually all secondary school students and most college students to purchase alcoholic beverages, experience with alcohol is almost universal among them. That is, alcohol has been tried by 53% of eighth graders, 70% of tenth graders, 81% of twelfth graders, and 89% of college students; and active use is widespread. Most important,

perhaps, is the widespread occurrence of ***occasions of heavy drinking***—measured by the percent reporting five or more drinks in a row at least once in the prior two-week period. Among eighth graders this statistic stands at 14%, among tenth graders at 24%, among twelfth graders at 32%, and among college students at 39%. After the early twenties this behavior recedes somewhat, reflected by the 32% found in the entire young adult sample.

- Alcohol use did not increase as use of other illicit drugs decreased among seniors from the late 1970s to the early 1990s, although it was common to hear such a "displacement hypothesis" asserted. This study demonstrates that the opposite seems to be true. After 1980, when illicit drug use was declining, the monthly prevalence of alcohol use among seniors also declined gradually but substantially, from 72% in 1980 to 51% in 1993. ***Daily use*** declined from a peak of 6.9% in 1979 to 2.5% in 1993; and the prevalence of drinking ***five or more drinks in a row*** (binge drinking) during the prior two-week interval fell from 41% in 1983 to 28% in 1993—nearly a one-third decline. When illicit drug use rose again in the 1990s, there was evidence that alcohol use (particularly binge drinking) was rising some as well—albeit not nearly as sharply as did marijuana use. In the late 1990s, as illicit drug use leveled in secondary schools and began a gradual decline, similar trends are observed for alcohol.

College-Noncollege Differences in Alcohol Use

- The data from college students show a quite different pattern in relation to alcohol use than twelfth graders or noncollege respondents of the same age. (See Figure 9-13 in Volume II). From 1980 to 1993, college students showed less drop-off in monthly prevalence of ***alcohol*** use (82% to 70%) than did high school seniors (72% to 49%), and slightly less decline in daily prevalence (6.5% to 3.9%) compared to a decline from 6.0% to 2.5% among high school seniors. ***Occasions of heavy drinking*** also declined less among college students from 1980 to 1993, from 44% to 40%, compared to a decline from 41% to 28% among high school seniors. Among noncollege-age peers, the decline was from 41% to 34%. Thus, because both their noncollege-age peers and high school students were showing greater declines, the college students stood out as having maintained a high rate of binge or party drinking. Between 1993 and 1998, the college students declined by one percentage point, to 39% in 1998, while the noncollege-age peers increased by one percentage point, to 35%; high school seniors increased by four percentage points, to 32%. As a result, college students still stand out as having a relatively high rate of binge or party drinking.

  Because the college-bound seniors in high school are consistently less likely to report occasions of heavy drinking than the noncollege-bound, the higher

rates of such drinking in college indicate that they "catch up to and pass" their peers in binge drinking after high school graduation.

- Since 1980, college students have generally had ***daily drinking*** rates that were slightly lower than their age peers, suggesting that they were more likely to confine their drinking to weekends, when they tend to drink a lot. College men have much higher rates of daily drinking than college women (5.8% vs. 2.7% in 1998). This gender difference is also reflected in the noncollege group (8.7% versus 2.9%, respectively).

- The rate of daily drinking fell considerably among the noncollege group, from 8.3% in 1980 to 3.2% in 1994, but is now back to 5.5%. Daily drinking by the college group went from 6.5% to 3.0% in 1995, and stands at 3.9% in 1998.

- In 1998, college males had a slightly higher binge drinking rate (52%) than noncollege males the same age (47%).

Male-Female Differences in Alcohol Use

- There is a substantial gender difference among high school seniors in the prevalence of ***occasions of heavy drinking*** (24% for females vs. 39% for males in 1998); this difference generally had been diminishing very gradually since the study began. (In 1975 there was a 23 percentage point difference between them, vs. a 15 point difference in 1998.)

- As was just discussed, there also are substantial gender differences in alcohol use among college students, and young adults generally, with males drinking more. For example, 52% of college males report having ***five or more drinks in a row*** over the previous two weeks vs. 31% of college females. There has not been a great deal of change in this gender difference since 1980.

TRENDS IN CIGARETTE SMOKING

- A number of important findings about ***cigarette smoking*** among American adolescents and young adults have emerged from the study. Despite the demonstrated health risks associated with smoking, sizeable and, in recent years, growing proportions of young people continued to establish regular cigarette habits during late adolescence. In fact, since the study began in 1975, cigarettes have consistently comprised the class of abusable substance most frequently used on a daily basis by high school students.

- Among eighth and tenth graders, the current smoking rate increased by about half between 1991 (when their use was first measured) and 1996; and among twelfth graders, the current smoking rate rose by nearly one-third between

1992 (their recent low point) and 1997. Fortunately, there has been some decline in current smoking since 1996 in the case of eighth and tenth graders, and since 1997 in the case of twelfth graders (nonsignificant for twelfth graders). In 1998, 19% of eighth graders, 28% of tenth graders, and 35% of twelfth graders reported smoking one or more cigarettes in the prior 30 days. Thus, at present over a third of American young people are current smokers by the time they complete high school; and, of course, other research consistently shows that smoking rates are substantially higher among those who drop out before graduating. ***Daily smoking*** rates also increased by about half among eighth graders (from a low of 7.0% in 1992 to 10.4% in 1996) and tenth graders (from a low of 12.3% in 1992 to 18.3% in 1996), while daily smoking among twelfth graders increased by 43% (from a low of 17.2% in 1992 to 24.6% in 1997). In 1997, we saw the first evidence of a change in the situation, as smoking rates declined among eighth graders and leveled among tenth graders. There was a significant decline in tenth and twelfth graders' daily smoking rates by 1998.

- For seniors, the upturn in the 1990s follows a substantial decline in smoking during a much earlier period, from 1977 to 1981; a leveling for nearly a decade (through 1990); and a slight decline in 1991 and 1992. The 1998 decline in daily smoking rates is the first decline in use by seniors since 1992.

- The dangers perceived to be associated with pack-a-day smoking differ greatly by grade level and seem to be unrealistically low at all grade levels. Currently, only about two-thirds of the seniors (71%) report that pack-a-day smokers run a great risk of harming themselves physically, or in other ways: more importantly, only about half (54%) of the eighth graders say the same. All three grades showed a dip in perceived risk between 1993 and 1995, but a slightly larger and offsetting increase between 1995 and 1998. Disapproval of cigarette smoking had been in decline longer: from 1991 through 1996 among eighth and tenth graders, and from 1992 to 1996 among twelfth graders. Since then there has been an increase in disapproval in all three grades, though it is not yet large enough to fully offset the declines. Undoubtedly the heavy media coverage of the tobacco issue (the proposed settlement with the State Attorneys General, the Congressional debate, the eventual state settlements, etc.) had an important influence on these attitudes. However, that coverage diminished considerably in 1998, which may mean that this change in youth attitudes about smoking will end.

Age and Cohort-Related Differences in Cigarette Smoking

- Initiation of smoking most often occurs in grades 6 through 9 (i.e., at modal ages 11-12 to 14-15), with rather little further initiation after high school, although a number of light smokers make the transition to heavy smoking in the first two years after high school. Analyses presented in this volume and

elsewhere have shown that cigarette smoking shows a clear "cohort effect." That is, if a class (or birth) cohort establishes an unusually high rate of smoking at an early age relative to other cohorts, it is likely to remain high throughout the life cycle relative to other birth cohorts when they are at the same age.

- As we reported in the "Other Findings from the Study" chapter in the 1986 volume in this series, some 53% of the half-pack-a-day (or more) smokers in senior year said that they had tried to quit smoking and found they could not. Of those who had been daily smokers in twelfth grade, nearly three-quarters were daily smokers 7 to 9 years later (based on the 1985 follow-up survey), despite the fact that in high school only 5% of them thought they would "definitely" be smoking 5 years hence. A more recent analysis, based on the 1995 follow-up survey, showed similar results. Nearly two-thirds (63%) of those who had been daily smokers in the twelfth grade still were daily smokers 7 to 9 years later, although only 3% of them had thought they would "definitely not" be smoking 5 years hence. Clearly, the smoking habit is established at an early age; it is difficult to break for those young people who have it; and young people greatly overrate their own ability to quit. Additional data from the eighth and tenth grade students show us that younger children are even more likely than older ones to underestimate seriously the dangers of smoking.

- The surveys of eighth and tenth graders also show that cigarettes are almost universally available to teens. Three-quarters (74%) of eighth graders and 88% of tenth graders say that cigarettes are "fairly easy" or "very easy" for them to get, if they want them. Until 1997 there had been little change in reported availability since these questions were first asked in 1992. Over the last 2 years, however, perceived availability of cigarettes decreased significantly for eighth and tenth graders, quite likely reflecting the impact of new regulations and related enforcement efforts aimed at reducing the sale of cigarettes to children.

College-Noncollege Differences in Cigarette Smoking

- A striking difference in smoking rates has long existed between college-bound and noncollege-bound high school seniors. For example, in 1998 smoking half-pack or more per day is two and one-half times as prevalent among the noncollege-bound seniors (24% vs. 9%). Among respondents one to four years past high school, those not in college show the same dramatically higher rate of smoking compared to that found among those who are in college, with half-pack-a-day smoking standing at 23% and 11%, respectively.

- In the first half of the 1990s, daily smoking rose among college students and their same-age peers, although the increases were not as steep for either group

as they were among high school seniors. But in 1998, while smoking was declining among high school students, daily and half-pack-a-day smoking increased significantly for college students (by 2.8 and 2.3 percentage points, respectively), no doubt reflecting the cohort effect from earlier, heavier-smoking classes of high school seniors moving into the older age groups.

Male-Female Differences in Cigarette Smoking

- In the 1970s, among high school seniors, females caught up to, and passed, males in their rates of ***current smoking***. Both genders then showed a decline in use followed by a long, fairly level period, with use by females consistently higher, but with the gender difference diminishing. In the early 1990s there was another crossover—rates rose among males and declined among females. Both genders showed increasing use between 1992 and 1997; in 1998 both genders have shown a slight decline in use.

  Among college students, females had slightly higher probabilities of being daily smokers, from 1980 through 1994—although this long-standing gender difference was not true among their age peers not in college. However, there was a crossover in 1995, and since 1995 smoking rates among college males have tended to be slightly higher than among females.

RACIAL/ETHNIC COMPARISONS

The three largest ethnic groupings—whites, African Americans, and Hispanics taken as a group—are examined here. (Sample size limitations simply do not allow finer subgroup breakdowns unless many years are combined.) A number of interesting findings emerge in these comparisons, and the reader is referred to Chapters 4 and 5 of Volume I for a full discussion of them.

- African American seniors have consistently shown lower usage rates on most drugs, licit and illicit, than white seniors; this also is true at the lower grade levels where little dropping out of school has occurred. In some cases, the differences are quite large.

- African American students have a much lower prevalence of ***daily cigarette smoking*** than white students (7% vs. 28% in senior year, in 1998) because their smoking rate continued to decline after 1983, while the rate for white students stabilized for some years. (Smoking rates had been rising among white seniors after 1992 and among African American seniors after 1994, but by 1998 there was evidence of a leveling or reversal in both groups in the lower grades.)

- In twelfth grade, ***binge drinking*** is much less likely to be reported by African American students (12%) than by white students (36%), or Hispanic students (28%).

- In twelfth grade, of the three racial/ethnic groups, whites have the highest rates of use on a number of drugs, including ***marijuana, inhalants, hallucinogens, LSD*** specifically, ***heroin, barbiturates, amphetamines, tranquilizers, narcotics other than heroin***, ***alcohol***, ***cigarettes***, and ***smokeless tobacco***.

- However, in senior year, Hispanics have the highest usage rate for a number of the most dangerous drugs: ***cocaine, crack,*** and ***other cocaine*** use. Further, in eighth grade, Hispanics have the highest rates not only on these drugs, but on many of the others, as well. For example, in eighth grade, the annual prevalence of ***marijuana*** for Hispanics is 23%, vs. 17% for whites and 16% for African Americans; for ***binge drinking***, 20%, 14%, and 9%, respectively. In other words, Hispanics have the highest rates of use for many drugs in eighth grade, but not in twelfth, which suggests that their considerably higher dropout rate (compared to whites and African Americans) may change their relative ranking by twelfth grade.

- With regard to trends, seniors in all three racial/ethnic groups exhibited the decline in ***cocaine*** use from 1986 through 1992, although the decline was less steep among African American seniors because the earlier increase in use was not as large as that among white and Hispanic students.

- For virtually ***all of the illicit drugs***, the three groups have tended to trend in parallel. Because white seniors had achieved the highest level of use on a number of drugs—including ***amphetamines, barbiturates,*** and ***tranquilizers***—they also had the largest declines; African Americans have had the lowest rates, and therefore, the smallest declines.

- The important racial/ethnic differences in ***cigarette smoking*** noted earlier among seniors have emerged during the life of the study. The three groups were fairly similar in their smoking rates during the late 1970s and all three mirrored the general decline in smoking from 1977 through 1981. From 1981 through 1992, however, smoking rates declined very little, if at all, for whites and Hispanics, but the rates for African Americans continued to decline steadily. As a result, by 1992 the daily smoking rate for African Americans was one-fifth that for whites. Subsequently all three ethnic groups of twelfth graders exhibited an increase in smoking.

DRUG USE IN EIGHTH GRADE

It may be useful to focus specifically on the youngest age group in the study—the eighth graders, most of whom are 13 or 14 years old—because the exceptional levels of both licit and illicit drug use that they already have attained helps illustrate the urgent need for the nation to continue to address the problems of substance abuse among its young.

- By eighth grade 53% of youngsters report having tried ***alcohol*** (more than just a few sips) and a quarter (25%) say they have already been drunk at least once.

- Nearly half of the eighth graders (46%) have tried ***cigarettes***, and 19%, or nearly one in five, say they have smoked in the prior month. Shocking to most adults is the fact that only 54% of eighth graders recognize that there is great risk associated with being a pack-a-day smoker.

- ***Smokeless tobacco*** has been tried by 23% of male eighth graders, is used currently by 8% of them, and is used daily by 1.8%. (Rates are far lower among females than among males.)

- Among eighth graders, one in five (21%) have used ***inhalants***, and one in twenty (5%) said they have used in the past month. This is the only class of drugs for which use is substantially higher in eighth grade than in tenth or twelfth grade.

- ***Marijuana*** has been tried by more than one in every five eighth graders (22%), and has been used in the prior month by one in every ten (10%).

- A surprisingly large number of eighth-grade students say they have tried prescription-type ***amphetamines*** (11%); 3.3% say they have used them in the prior 30 days.

- Relatively few eighth graders say they have tried most of the other illicit drugs yet. (This is consistent with the retrospective reports from seniors.) But the proportions having at least some experience with them still is not inconsequential when one considers the fact that a 3.3% prevalence rate, for example, on average represents one child in every 30-student classroom: ***tranquilizers*** (4.6%), ***LSD*** (4.1%), ***other hallucinogens*** (2.5%), ***crack*** (3.2%), ***other cocaine*** (3.7%), ***heroin*** (2.3%), and ***steroids*** (2.3% overall, and 2.9% among males.)

- Overall, 17% of all eighth graders in 1998—one in every six— have tried ***some illicit drug other than marijuana*** (excluding inhalants).

- The very large numbers who have already begun use of the so-called "gateway drugs" (***tobacco***, ***alcohol***, ***inhalants***, and ***marijuana***) suggests that a substantial number of eighth grade students are already at risk of proceeding further to such drugs as LSD, cocaine, amphetamines, and heroin.

SUMMARY AND CONCLUSIONS

We can summarize the findings on trends as follows: over more than a decade—from the late 1970s to the early 1990s—there were very appreciable declines of use of a number of ***illicit drugs*** among twelfth-grade students, and even larger declines in their use among American college students and young adults. These substantial improvements—which seem largely explainable in terms of changes in attitudes, beliefs about the risks of drug use, and peer norms against drug use—have some extremely important policy implications. One is that these various substance-using behaviors among American young people are malleable—they can be changed. It has been done before. The second is that demand-side factors appear to have been pivotal in bringing about those changes. The availability of marijuana, as reported by high school seniors, has held fairly steady throughout the life of the study. (Moreover, both abstainers and quitters rank availability and price very low on their list of reasons for not using.) And, in fact, the perceived availability of cocaine actually was rising during the beginning of the sharp decline in cocaine and crack use.

However, improvements are not inevitable and, when they occur, should not be taken for granted; because relapse is always possible. Just such a "relapse" in the longer-term epidemic occurred in the 1990s.

In 1992, eighth graders exhibited a significant increase in annual use of ***marijuana, cocaine, LSD***, and ***hallucinogens other than LSD***, as well as an increase in ***inhalant*** use. (In fact, all five populations showed some increase in ***LSD*** use, continuing a longer-term trend for college students and young adults.) Further, the attitudes and beliefs of seniors regarding drug use began to soften.

In 1993, use of a number of drugs began to rise among tenth and twelfth graders, as well, fulfilling our earlier predictions that we had based on their eroding beliefs about the dangers of drugs and their attitudes about drug use. Increases occurred in a number of the so-called "gateway drugs"—***marijuana***, ***cigarettes***, and ***inhalants***—which we argued boded ill for the use of later drugs in the usual sequence of drug-use involvement. Indeed, the proportion of students reporting the use of ***any illicit drug other than marijuana*** rose steadily after 1991 among eighth and tenth graders and after 1992 among twelfth graders. (This proportion increased by more than half among eighth graders with annual prevalence rising from 8.4% in 1991 to 13.1% in 1996.) The softening attitudes about ***crack*** and other forms of ***cocaine*** also provided a basis for concern—the use of both has increased fairly steadily through 1998.

Over the years, this study has demonstrated that changes in perceived risk and disapproval have been important causes of change in the use of a number of drugs. These beliefs and attitudes surely are influenced by the amount and nature of the public attention being paid to the drug issue at the time young people are growing up. A substantial decline in attention to this issue in the early 1990s very

likely helps to explain why the increases in perceived risk and disapproval among students ceased and began to backslide. News coverage of the drug issue plummeted between 1989 and 1993 (although it made a considerable comeback as the problem worsened again) and the *pro bono* placement by the media of the ads from the Partnership for a Drug Free America also fell considerably.

Also, the deterioration in the drug abuse situation began among our youngest cohorts—perhaps because they had not had the same opportunities for vicarious learning from the adverse drug experiences of people around them and people they learn about through the media. Clearly there was a danger that, as the drug epidemic subsided, newer cohorts would have far less opportunity to learn through informal means about the dangers of drugs—that what we have called a "generational forgetting" of those risks would occur through a process of generational replacement of older, more drug-experienced cohorts with newer, more naive ones. This suggests that the nation must redouble its efforts to be sure that such naive cohorts learn these lessons through more formal means—from schools, parents, and focused messages in the media, for example—and that this more formalized prevention effort will need to be institutionalized so that it will endure for the long term. Clearly, for the foreseeable future, American young people will be aware of the psychoactive potential of a host of drugs and will have access to them. That means that each new generation of young people must learn the reasons that they should *not* use drugs. Otherwise their natural curiosity and desires for new experiences will lead a great many of them to use.

The following facts help to put into perspective the magnitude and variety of substance use problems which remain among American young people at the present time:

- By the end of eighth grade, nearly four in every ten (38%) of American eighth grade students have tried an ***illicit drug*** (if inhalants are included as an illicit drug), by twelfth grade, more than half (56%) have done so.

- By their late twenties, two-thirds (67%) of today's American young adults have tried an ***illicit drug***, including 39% who have tried some ***illicit drug other than*** (usually in addition to) ***marijuana***. (These figures do not include inhalants.)

- Almost one out of four young Americans has tried ***cocaine*** (23% in 1998) by the age of 30, and 9% have tried it by their senior year of high school (approximately age eighteen). More than one in every twenty-five (4.4%) has tried the particularly dangerous form of cocaine called ***crack***. In the young adult sample 3.8% have tried crack, including 6.1% by age 29-30.

- Over one in every twenty (5.6%) high school seniors in 1998 smoked ***marijuana daily***. Among young adults aged 19 to 28, the percentage is slightly less (3.7%). Among seniors in 1998, nearly one in five (18.0%) had been daily marijuana smokers at some time in their lives for at least a month, and among young adults the comparable figure is 12.6%.

- About a third of all seniors (32%) had consumed ***five or more drinks in a row*** at least once in the two weeks prior to the survey, and such behavior tends to increase among young adults one to four years past high school. The prevalence of such behavior among male college students reaches 52%.

- Over one-third (35%) of seniors in 1998 were current ***cigarette*** smokers and 22% already were current daily smokers. In addition, we know from studying previous cohorts that many young adults increase their rates of smoking within a year or so after they leave high school.

- Despite the very substantial improvement in the situation in this country, between 1979 and 1991, it is still true that this nation's secondary school students and young adults show a level of involvement with illicit drugs that is as great as has been documented in any other industrialized nation in the world.[3] Even by longer-term historical standards in this country, these rates remain extremely high. Heavy drinking also remains widespread and troublesome; and certainly the continuing initiation of a large and growing proportion of young people to cigarette smoking is a matter of the greatest public health concern.

- Finally, we note the seemingly unending capacity of pharmacological experts and amateurs to discover new substances with abuse potential that can be used to alter mood and consciousness, as well as the potential for our young people to discover the abuse potential of existing products, like Robitussin™, and to rediscover older drugs, such as ***LSD*** and ***heroin***. While as a society we have made significant progress on a number of fronts in the fight against drug abuse, we must remain vigilant against the opening of new fronts, as well as the re-emergence of trouble on older ones. The recent substantial rises in illicit drug use and in cigarette smoking, both of which began in the early 1990s, certainly suggest that as a society we have not quite gotten it right yet. Still there is some room for optimism, as the use of cigarettes and illicit drugs appear to be turning down for the first time in a long time.

- The drug problem is not an enemy which can be vanquished, as in a war. It is more a recurring and relapsing problem which must be contained to the extent possible on a long-term, ongoing basis; and, therefore, it is a problem which requires an ongoing, dynamic response from our society—one which takes into account the continuing generational replacement of our children and the generational forgetting of the dangers of drugs which can occur with that replacement.

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[3] A recently published report from an international collaborative study, modeled largely after the Monitoring the Future, suggests that in 1995 the United Kingdom had illicit drug use rates among fifteen year old students about comparable to those observed in the United States. All the other countries had substantially lower rates. See B. Hibell et al (Eds.) The 1995 ESPAD Report. (*European School Survey Project on Alcohol and Other Drugs) Use among Students in 26 European Countries*, Stockholm: The Swedish Council for Information on Alcohol and Other Drugs and the Council of Europe, 1997.

TABLE 2-1
Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

(Entries are percentages)

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Any Illicit Drug[a]									
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	-0.4
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	-2.4
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	-0.2
College Students	50.4	48.8	45.9	45.5	45.5	47.4	49.0	52.9	+3.9s
Young Adults	62.2	60.2	59.6	57.5	57.4	56.4	56.7	57.0	+0.3
Any Illicit Drug Other Than Marijuana[a]									
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	-0.8
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	-1.4
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	-0.6
College Students	25.8	26.1	24.3	22.0	24.5	22.7	24.4	24.8	+0.4
Young Adults	37.8	37.0	34.6	33.4	32.8	31.0	30.5	29.9	-0.6
Any Illicit Drug Including Inhalants[a,b]									
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	37.8	-0.3
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	49.3	-1.6
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	56.1	-0.2
College Students	52.0	50.3	49.1	47.0	47.0	49.1	50.7	55.4	+4.7s
Young Adults	63.4	61.2	61.2	58.5	59.0	58.2	58.4	58.5	+0.1
Marijuana/Hashish									
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	-0.4
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	-2.7s
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	-0.5
College Students	46.3	44.1	42.0	42.2	41.7	45.1	46.1	49.9	+3.8s
Young Adults	58.6	56.4	55.9	53.7	53.6	53.4	53.8	54.4	+0.6
Inhalants[b,c]									
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	-0.5
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	0.0
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	-0.9
College Students	14.4	14.2	14.8	12.0	13.8	11.4	12.4	12.8	+0.4
Young Adults	13.4	13.5	14.1	13.2	14.5	14.1	14.1	14.2	+0.1
Nitrites[d]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	+0.7
College Students	—	—	—	—	—	—	—	—	—
Young Adults	1.4	1.2	1.3	1.0	—	—	—	—	—

(Table continued on next page)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Hallucinogens[c]									
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	-0.5
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	-0.7
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	-1.0
College Students	11.3	12.0	11.8	10.0	13.0	12.6	13.8	15.2	+1.4
Young Adults	15.7	15.7	15.4	15.4	16.1	16.4	16.8	17.4	+0.7
LSD									
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	-0.6
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	-1.0
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	-1.0
College Students	9.6	10.6	10.6	9.2	11.5	10.8	11.7	13.1	+1.5
Young Adults	13.5	13.8	13.6	13.8	14.5	15.0	15.0	15.7	+0.7
Hallucinogens Other Than LSD									
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	-0.1
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	+0.2
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	-0.4
College Students	6.0	5.7	5.4	4.4	6.5	6.5	7.5	8.7	+1.2
Young Adults	8.4	8.0	7.6	7.4	7.8	7.9	8.5	9.4	+1.0
PCP[d]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	0.0
College Students	—	—	—	—	—	—	—	—	—
Young Adults	3.1	2.0	1.9	2.0	2.2	1.9	2.4	2.7	+0.3
MDMA (Ecstasy)[d]									
8th Grade	—	—	—	—	—	3.4	3.2	2.7	-0.5
10th Grade	—	—	—	—	—	5.6	5.7	5.1	-0.6
12th Grade	—	—	—	—	—	6.1	6.9	5.8	-1.1
College Students	2.0	2.9	2.3	2.1	3.1	4.3	4.7	6.8	+2.2
Young Adults	3.2	3.9	3.8	3.8	4.5	5.2	5.1	7.2	+2.1ss
Cocaine									
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	+0.2
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	+0.1
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	+0.6
College Students	9.4	7.9	6.3	5.0	5.5	5.0	5.6	8.1	+2.5ss
Young Adults	21.0	19.5	16.9	15.2	13.7	12.9	12.1	12.3	+0.3

(Table continued on next page)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Crack									
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	+0.5s
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	+0.3
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	+0.5
College Students	1.5	1.7	1.3	1.0	1.8	1.2	1.4	2.2	+0.7
Young Adults	4.8	5.1	4.3	4.4	3.8	3.9	3.6	3.8	+0.2
Other Cocaine[e]									
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	+0.2
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	+0.3
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	+0.2
College Students	9.0	7.6	6.3	4.6	5.2	4.6	5.0	7.4	+2.4s
Young Adults	19.8	18.4	15.1	13.9	12.4	11.9	11.3	11.5	+0.3
Heroin[f]									
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	+0.2
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	+0.2
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	-0.1
College Students	0.5	0.5	0.6	0.1	0.6	0.7	0.9	1.7	+0.8s
Young Adults	0.9	0.9	0.9	0.8	1.1	1.3	1.3	1.6	+0.2
Other Narcotics[g]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	+0.1
College Students	7.3	7.3	6.2	5.1	7.2	5.7	8.2	8.7	+0.5
Young Adults	9.3	8.9	8.1	8.2	9.0	8.3	9.2	9.1	-0.1
Amphetamines[g]									
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	-1.0
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	-1.0
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	-0.1
College Students	13.0	10.5	10.1	9.2	10.7	9.5	10.6	10.6	0.0
Young Adults	22.4	20.2	18.7	17.1	16.6	15.3	14.6	14.3	-0.3
Ice[h]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	+0.9
College Students	1.3	0.6	1.6	1.3	1.0	0.8	1.6	2.2	+0.7
Young Adults	2.9	2.2	2.7	2.5	2.1	3.1	2.5	3.4	+0.9
Barbiturates[g]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	+0.6
College Students	3.5	3.8	3.5	3.2	4.0	4.6	5.2	5.7	+0.5
Young Adults	8.2	7.4	6.5	6.4	6.7	6.6	6.5	6.9	+0.4

(Table continued on next page)

TABLE 2-1 (cont.)
Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Tranquilizers[g]									
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	-0.2
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	+0.5
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	+0.7
College Students	6.8	6.9	6.3	4.4	5.4	5.3	6.9	7.7	+0.8
Young Adults	11.8	11.3	10.5	9.9	9.7	9.3	8.6	9.6	+1.1s
Alcohol[f]									
Any use									
8th Grade	70.1	69.3	67.1	—	—	—	—	—	—
			55.7	55.8	54.5	55.3	53.8	52.5	-1.3
10th Grade	83.8	82.3	80.8	—	—	—	—	—	—
			71.6	71.1	70.5	71.8	72.0	69.8	-2.2s
12th Grade	88.0	87.5	87.0	—	—	—	—	—	—
			80.0	80.4	80.7	79.2	81.7	81.4	-0.3
College Students	93.6	91.8	89.3	88.2	88.5	88.4	87.3	88.5	+1.2
Young Adults	94.1	93.4	92.1	91.2	91.6	91.2	90.7	90.6	-0.1
Been Drunk[h]									
8th Grade	25.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	-0.4
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	-2.7s
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	-1.8
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
Cigarettes									
Any use									
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	-1.6
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	-2.5s
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	-0.1
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
Smokeless Tobacco[d]									
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	-1.8
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	-3.6ss
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	+0.9
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
Steroids[b]									
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	+0.5s
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	0.0
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	+0.3
College Students	—	—	—	—	—	—	—	—	—
Young Adults	1.7	1.9	1.5	1.3	1.5	1.5	1.4	1.4	0.0

Footnotes for Table 2-1 to Table 2-3

NOTES: Level of significance of difference between the two years: s = .05, ss = .01, sss = .001.
'—' indicates data not available. '*' indicates less than .05 percent but greater than 0 percent.
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two years is due to rounding error.
SOURCE: The Monitoring the Future Study, the University of Michigan.

Approximate Weighted Ns	1991	1992	1993	1994	1995	1996	1997	1998
8th Graders	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100
10th Graders	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000
12th Graders	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200
College Students	1,410	1,490	1,490	1,410	1,450	1,450	1,480	1,440
Young Adults	6,600	6,800	6,700	6,500	6,400	6,300	6,400	6,200

[a]For 12th graders, college students, and young adults only: Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b]For 12th graders, college students, and young adults only: Data based on five of six forms; N is five-sixths of N indicated for each group.

[c]Inhalants are unadjusted for underreporting of amyl and butyl nitrites; hallucinogens are unadjusted for underreporting of PCP.

[d]For 8th and 10th graders only: Smokeless tobacco data based on one of two forms for 1991–96 and on two of four forms beginning in 1997; N is one-half of N indicated. MDMA data based on one form in 1996; N is one-half of N indicated. Beginning in 1997, data based on one-third of N indicated due to changes in the questionnaire forms. For 12th graders only: Data based on one form; N is one-sixth of N indicated. For college students and young adults only: Data based on two forms; N is one-third of N indicated. Questions about nitrite use were dropped from the college student and young adult questionnaires in 1995. Questions about smokeless tobacco use were dropped from the college student and young adult analyses in 1989.

[e]For 12th graders, college students, and young adults only: Data based on four of six forms; N is four-sixths of N indicated for each group.

[f]In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. In 1996, the heroin question was changed in the remaining 8th and 10th grade form. Data presented here represent the combined data from all forms.

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

[h]For 12th graders, college students, and young adults only: Data based on two of six forms; N is two-sixths of N indicated for each group.

[i]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 data in the upper line for alcohol came from forms using the original wording, while the data in the lower line came from forms using the revised wording. In 1993, each line of data was based on one of two forms for the 8th and 10th graders and on three of six forms for the 12th graders. N is one-half of N indicated for these groups. Data for 1994–98 were based on all forms for all grades. 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.

[j]Daily used is defined as use on twenty or more occasions in the past thirty days except for 5+ drinks, cigarettes, and smokeless tobacco, for which actual daily use is measured.

TABLE 2-2
Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Any Illicit Drug[a]																		
8th Grade	11.8	12.9	15.1	18.5	21.4	23.6	22.1	21.0	-1.1	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	-0.8
10th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	-3.5ss	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	-1.5
12th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	-1.0	16.4	14.4	18.8	21.9	23.8	24.6	26.2	25.6	-0.6
College Students	29.2	30.6	30.6	31.4	33.5	34.2	34.1	37.8	+3.7s	16.2	16.1	15.1	16.0	19.1	17.6	19.2	19.7	+0.5
Young Adults	27.0	28.3	28.4	28.4	29.8	29.2	29.2	29.9	+0.7	15.1	14.8	14.9	15.3	15.8	15.8	16.4	16.1	-0.3
Any Illicit Drug Other Than Marijuana[a]																		
8th Grade	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	-0.8	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	-0.5
10th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	-1.6	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	-0.2
12th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	-0.5	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	0.0
College Students	13.2	13.1	12.5	12.2	15.9	12.8	15.8	14.0	-1.8	4.3	4.6	5.4	4.6	6.3	4.5	6.8	6.1	-0.7
Young Adults	14.3	14.1	13.0	13.0	13.8	13.2	13.6	13.2	-0.4	5.4	5.5	4.9	5.3	5.7	4.7	5.5	5.5	0.0
Any Illicit Drug Including Inhalants[a,b]																		
8th Grade	16.7	18.2	21.1	24.2	27.1	28.7	27.2	26.2	-1.0	8.8	10.0	12.0	14.3	16.1	17.5	16.0	14.9	-1.1
10th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	37.1	-3.2ss	13.1	12.6	15.5	20.0	21.6	24.5	24.1	22.5	-1.6
12th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	42.4	-0.9	17.8	15.5	19.3	23.0	24.8	25.5	26.9	26.6	-0.3
College Students	29.8	31.1	31.7	31.9	33.7	36.1	35.5	39.1	+3.6	15.1	16.5	15.7	16.4	19.6	18.0	19.8	21.0	+1.4
Young Adults	27.8	29.2	28.9	29.2	30.4	30.2	30.1	30.6	+0.5	15.4	15.3	15.1	16.1	16.1	16.4	16.9	16.7	-0.2
Marijuana/Hashish																		
8th Grade	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	-0.8	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	-0.5
10th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	-3.7sss	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	-1.8s
12th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	-1.0	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	-0.9
College Students	26.5	27.7	27.9	29.3	31.2	33.1	31.6	35.9	+4.3s	14.1	14.6	14.2	15.1	18.6	17.5	17.7	18.6	+1.0
Young Adults	23.8	25.2	25.1	25.5	26.5	27.0	26.8	27.4	+0.6	13.5	13.3	13.4	14.1	14.0	15.1	15.0	14.9	-0.1
Inhalants[b,c]																		
8th Grade	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	-0.7	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	-0.8s
10th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	-0.7	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	-0.1
12th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	-0.5	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	-0.2
College Students	3.5	3.1	3.8	3.0	3.9	3.6	4.1	3.0	-1.0	0.9	1.1	1.3	0.6	1.6	0.8	0.8	0.6	-0.1
Young Adults	2.0	1.9	2.1	2.1	2.4	2.2	2.3	2.1	-0.2	0.5	0.6	0.7	0.5	0.7	0.5	0.5	0.7	+0.2
Nitrites[d]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	+0.2	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	+0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.2	0.1	0.4	0.3	—	—	—	—	—	*	0.1	0.2	0.1	—	—	—	—	—

(Table continued on next page)

TABLE 2-2 (cont.)
Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Hallucinogens[c]																		
8th Grade	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	-0.3	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	-0.4
10th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	-0.7	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	-0.1
12th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	-0.8	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	-0.1
College Students	6.3	6.8	6.0	6.2	8.2	6.9	7.7	7.2	-0.5	1.2	2.3	2.5	2.1	3.3	1.9	2.1	2.1	0.0
Young Adults	4.5	5.0	4.5	4.8	5.6	5.6	5.9	5.2	-0.7	1.1	1.5	1.2	1.4	1.7	1.2	1.5	1.4	-0.1
LSD																		
8th Grade	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	-0.4	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	-0.4s
10th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	-0.8	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	-0.1
12th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	-0.8	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	+0.1
College Students	5.1	5.7	5.1	5.2	6.9	5.2	5.0	4.4	-0.6	0.8	1.8	1.6	1.8	2.5	0.9	1.1	1.5	+0.4
Young Adults	3.8	4.3	3.8	4.0	4.6	4.5	4.4	3.5	-0.9ss	0.8	1.1	0.8	1.1	1.3	0.7	0.9	1.0	0.0
Hallucinogens Other Than LSD																		
8th Grade	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	-0.2	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.0
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	+0.1	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	+0.2
12th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	0.0	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	-0.1
College Students	3.1	2.6	2.7	2.8	4.0	4.1	4.9	4.4	-0.4	0.6	0.7	1.1	0.8	1.6	1.2	1.2	0.7	-0.4
Young Adults	1.7	1.9	1.9	2.0	2.5	2.8	3.1	3.0	-0.1	0.3	0.5	0.6	0.6	0.6	0.6	0.7	0.5	-0.1
PCP[d]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	-0.2	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	+0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.3	0.3	0.2	0.3	0.3	0.2	0.5	0.6	+0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.2	+0.1
MDMA (Ecstasy)[d]																		
8th Grade	—	—	—	—	—	2.3	2.3	1.8	-0.5	—	—	—	—	—	1.0	1.0	0.9	-0.1
10th Grade	—	—	—	—	—	4.6	3.9	3.3	-0.6	—	—	—	—	—	1.8	1.3	1.3	0.0
12th Grade	—	—	—	—	—	4.6	4.0	3.6	-0.4	—	—	—	—	—	2.0	1.6	1.5	-0.1
College Students	0.9	2.0	0.8	0.5	2.4	2.8	2.4	3.9	+1.5	0.2	0.4	0.3	0.2	0.7	0.7	0.8	0.8	0.0
Young Adults	0.8	1.0	0.8	0.7	1.6	1.7	2.1	2.9	+0.8	0.1	0.3	0.3	0.2	0.4	0.3	0.6	0.8	+0.1
Cocaine																		
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	+0.3	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	+0.3
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	0.0	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	+0.1
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	+0.2	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	+0.1
College Students	3.6	3.0	2.7	2.0	3.6	2.9	3.4	4.6	+1.2	1.0	1.0	0.7	0.6	0.7	0.8	1.6	1.6	-0.1
Young Adults	6.2	5.7	4.7	4.3	4.4	4.1	4.7	4.9	+0.2	2.0	1.8	1.4	1.3	1.5	1.2	1.6	1.7	+0.1

(Table continued on next page)

TABLE 2-2 (cont.)
Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Crack																		
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	+0.4s	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	+0.2
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	+0.3	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	+0.2
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	+0.1	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	+0.1
College Students	0.5	0.4	0.6	0.5	1.1	0.6	0.4	1.0	+0.6	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	-0.1
Young Adults	1.2	1.4	1.3	1.1	1.1	1.1	1.0	1.1	+0.1	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.0
Other Cocaine[e]																		
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	+0.2	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	+0.2
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	-0.1	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	+0.2
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	-0.1	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	0.0
College Students	3.2	2.4	2.5	1.8	3.3	2.3	3.0	4.2	+1.2	1.0	0.9	0.6	0.3	0.8	0.6	1.3	1.5	+0.2
Young Adults	5.4	5.1	3.9	3.6	3.9	3.8	4.3	4.5	+0.2	1.8	1.7	1.1	1.0	1.3	1.1	1.5	1.5	0.0
Heroin[f]																		
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	0.0	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.0
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	0.0	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	+0.1
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	-0.2	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.0
College Students	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.6	+0.3	0.1	0.0	*	0.0	0.1	*	0.2	0.1	-0.1
Young Adults	0.1	0.2	0.2	0.1	0.4	0.4	0.3	0.4	+0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Other Narcotics[g]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	+0.1	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	+0.1
College Students	2.7	2.7	2.5	2.4	3.8	3.1	4.2	4.2	0.0	0.6	1.0	0.7	0.4	1.2	0.7	1.3	1.1	-0.2
Young Adults	2.5	2.5	2.2	2.5	3.0	2.9	3.3	3.4	+0.1	0.6	0.7	0.7	0.6	0.9	0.7	0.9	0.9	-0.1
Amphetamines[g]																		
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	-0.9	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	-0.5
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	-1.4s	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	0.0
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	-0.1	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	-0.2
College Students	3.9	3.6	4.2	4.2	5.4	4.2	5.7	5.1	-0.7	1.0	1.1	1.5	1.5	2.2	0.9	2.1	1.7	-0.4
Young Adults	4.3	4.1	4.0	4.5	4.6	4.2	4.6	4.5	0.0	1.5	1.5	1.5	1.7	1.7	1.5	1.7	1.7	0.0
Ice[h]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	+0.7	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	+0.4
College Students	0.1	0.2	0.7	0.8	1.1	0.3	0.8	1.0	+0.2	0.0	0.0	0.3	0.5	0.3	0.1	0.2	0.3	+0.1
Young Adults	0.3	0.4	0.8	0.9	1.2	0.9	0.9	1.1	+0.2	*	0.1	0.3	0.5	0.3	0.3	0.3	0.3	-0.1
Barbiturates[g]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	+0.4	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	+0.5s
College Students	1.2	1.4	1.5	1.2	2.0	2.3	3.0	2.5	-0.5	0.3	0.7	0.4	0.4	0.5	0.8	1.2	1.1	-0.1
Young Adults	1.8	1.6	1.9	1.8	2.1	2.2	2.4	2.5	+0.2	0.5	0.5	0.6	0.6	0.8	0.8	0.9	0.9	0.0

(Table continued on next page)

TABLE 2-2 (cont.)
Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Tranquilizers[g]																		
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	-0.3	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	0.0
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	+0.2	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	0.0
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.6	+0.8s	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	+0.6ss
College Students	2.4	2.9	2.4	1.8	2.9	2.8	3.8	3.9	+0.1	0.6	0.6	0.4	0.4	0.5	0.7	1.2	1.3	+0.1
Young Adults	3.5	3.4	3.1	2.9	3.4	3.2	3.1	3.8	+0.7s	0.9	1.0	1.0	0.8	1.1	0.7	1.1	1.2	+0.1
Alcohol[i]																		
Any use																		
8th Grade	54.0	53.7	51.6	—	—	—	—	—	—	25.1	26.1	26.2	—	—	—	—	—	—
			45.4	46.8	45.3	46.5	45.5	43.7	-1.8			24.3	25.5	24.6	26.2	24.5	23.0	-1.5
10th Grade	72.3	70.2	69.3	—	—	—	—	—	—	42.8	39.9	41.5	—	—	—	—	—	—
			63.4	63.9	63.5	66.0	65.2	62.7	-2.5s			38.2	39.2	38.8	40.4	40.1	38.8	-1.3
12th Grade	77.7	76.8	76.0	—	—	—	—	—	—	54.0	51.3	51.0	—	—	—	—	—	—
	77.7	76.8	72.7	73.0	73.7	72.5	74.8	74.3	-0.5			48.6	50.1	51.3	50.8	52.7	52.0	-0.7
College Students	88.3	86.9	85.1	82.7	83.2	82.9	82.4	84.6	+2.1	74.7	71.4	70.1	67.8	67.5	67.0	65.8	68.1	+2.3
Young Adults	86.9	86.2	85.3	83.7	84.7	84.0	84.3	84.0	-0.3	70.6	69.0	68.3	67.7	68.1	66.7	67.5	66.9	-0.6
Been Drunk[h]																		
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	-0.5	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	+0.2
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	-2.4s	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	-1.3
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	-1.2	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	-1.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes																		
Any use																		
8th Grade	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	-0.3
10th Grade	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	-2.2s
12th Grade	—	—	—	—	—	—	—	—	—	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	-1.4
College Students	35.6	37.3	38.8	37.6	39.3	41.4	43.6	44.3	+0.7	23.2	23.5	24.5	23.5	26.8	27.9	28.3	30.0	+1.7
Young Adults	37.7	37.9	37.8	38.3	38.8	40.3	41.8	41.6	-0.2	28.2	28.3	28.0	28.0	29.2	30.1	29.9	30.9	+1.1
Smokeless Tobacco[d]																		
8th Grade	—	—	—	—	—	—	—	—	—	6.9	7.0	6.6	7.7	7.1	7.1	6.5	4.8	-0.7
10th Grade	—	—	—	—	—	—	—	—	—	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	-1.4
12th Grade	—	—	—	—	—	—	—	—	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	-0.9
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids[h]																		
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	+0.2	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.0
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	0.0	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	-0.1
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	+0.3	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	+0.1
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.5	0.4	0.3	0.4	0.5	0.3	0.5	0.4	-0.1	0.2	0.1	0.0	0.1	0.2	0.2	0.2	0.2	-0.1

NOTE: See Table 2-1 for relevant footnotes.

TABLE 2-3

Trends in 30-Day Prevalence of Daily Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)

	Daily								
	1991	1992	1993	1994	1995	1996	1997	1998	'97–'98 change
Marijuana/Hashish[j]									
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	0.0
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	-0.1
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	-0.2
College Students	1.8	1.6	1.9	1.8	3.7	2.8	3.7	4.0	+0.2
Young Adults	2.3	2.3	2.4	2.8	3.3	3.3	3.8	3.7	-0.1
Alcohol[kj]									
Any use									
8th Grade	0.5	0.6	0.8	—	—	—	—	—	—
			1.0	1.0	0.7	1.0	0.8	0.9	+0.1
10th Grade	1.3	1.2	1.6	—	—	—	—	—	—
			1.8	1.7	1.7	1.6	1.7	1.9	+0.2
12th Grade	3.6	3.4	2.5	—	—	—	—	—	—
			3.4	2.9	3.5	3.7	3.9	3.9	0.0
College Students	4.1	3.7	3.9	3.7	3.0	3.2	4.5	3.9	-0.6
Young Adults	4.9	4.5	4.5	3.9	3.9	4.0	4.6	4.0	-0.7
Been Drunk[hj]									
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	+0.2ss
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.0
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	-0.5
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
5+ drinks in last 2 weeks									
8th Grade	12.9	13.4	13.5	14.5	14.5	15.6	14.5	13.7	-0.8
10th Grade	22.9	21.1	23.0	23.6	24.0	24.8	25.1	24.3	-0.8
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	+0.2
College Students	42.8	41.4	40.2	40.2	38.6	38.3	40.7	38.9	-1.7
Young Adults	34.7	34.2	34.4	33.7	32.6	33.6	34.4	34.1	-0.3
Cigarettes									
Any use									
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	-0.2
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	-2.2ss
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	-2.2s
College Students	13.8	14.1	15.2	13.2	15.8	15.9	15.2	18.0	+2.8s
Young Adults	21.7	20.9	20.8	20.7	21.2	21.8	20.6	21.9	+1.2
1/2 pack+/day									
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	+0.1
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	-0.7
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	-1.7s
College Students	8.0	8.9	8.9	8.0	10.2	8.4	9.1	11.3	+2.3s
Young Adults	16.0	15.7	15.5	15.3	15.7	15.3	14.6	15.6	+0.9
Smokeless Tobacco[d]									
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	+0.1
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	0.0
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	-1.2
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—

NOTE: See Table 2-1 for relevant footnotes

Chapter 3

STUDY DESIGN AND PROCEDURES

This chapter contains a description of the research design, sampling plans, and field procedures used in both the in-school surveys of the eighth-, tenth-, and twelfth-grade students and the follow-up surveys of young adults. Related methodological issues such as response rates, population coverage, and the validity of the measures are also discussed. We begin with a description of the design that has been used consistently over twenty-four years to survey high school seniors; then we describe the more recently instituted design for eighth and tenth graders. Finally, the designs for the *follow-up* surveys of former twelfth graders, and former eighth and tenth graders, are covered.[4,5]

RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF SENIORS

The data from high school seniors are collected during the spring of each year; data collection began with the class of 1975. Each year's data collection takes place in approximately 125 to 145 public and private high schools selected to provide an accurate representative cross-section of high school seniors throughout the coterminous United States (see Figure 3-1).

The population under study. The senior year of high school was chosen as an optimal point for monitoring the drug use and related attitudes of youth for several reasons. First, completion of high school represents the end of an important developmental stage in this society, because it demarcates both the end of universal education and, for many, the end of living in the parental home. Therefore, it is a logical point at which to take stock of the cumulated influences of these two environments on American youth. Further, completion of high school represents the jumping-off point from which young people diverge into widely differing social environments and experiences, so senior year represents a good time to take a "before" measure upon which to calculate changes that may be attributable to the many environmental and role transitions that occur in young adulthood. Finally, there were some important practical advantages to building the original system of data collections around samples of high school seniors. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable stress be laid 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 and studied economically.

The omission of dropouts. One limitation in the original study design was the exclusion of those young men and women who drop out of high school before graduation—between 15 and 20 percent of each age cohort nationally, according to U.S. Census statistics. Clearly, the omission of high

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[4]For a more detailed description of the study design, see Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1996). *Monitoring the Future project after twenty-two years: Design and procedures.* (Monitoring the Future Occasional Paper 38.) Ann Arbor, MI: Institute for Social Research.

[5]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., & Bachman, J.G. (1996). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them* (2nd ed.). Ann Arbor, MI: Institute for Social Research.

school dropouts introduces biases in the estimation of certain characteristics of the entire age group; however, for most purposes, the small proportion of dropouts sets outer limits on the bias. Further, since the bias from missing dropouts should remain just about constant from year to year, their omission should introduce little or no bias in *change* estimates. Indeed, we believe the changes observed over time for those who finish high school are likely to parallel the changes for dropouts in most instances. Appendix A to Volume I addresses the likely effects of the exclusion of dropouts on estimates of prevalence of drug use and trends in drug use among the entire age cohort; the reader is referred there for a more detailed discussion of this issue.

Sampling procedures. A multi-stage random sampling procedure is used to secure the nationwide sample of high school seniors each year. Stage 1 is the selection of particular geographic areas, Stage 2 is the selection (with probability proportionate to size) of one or more high schools in each area, and Stage 3 is the selection of seniors within each high school. Within each school, up to about 350 seniors may be included. In schools with fewer seniors, the usual procedure is to include all of them in the data collection. In larger schools, a subset of seniors is selected 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. Final weights are normalized to average 1.0 (so that the weighted number of cases equals the unweighted number of cases overall). This three-stage sampling procedure has yielded the numbers of participating schools and students over the years shown in Table 3-1.

Questionnaire administration. About ten days before the questionnaire administration date, the seniors are given flyers explaining the study. The actual questionnaire administrations are conducted by the local Institute for Social Research representatives and their assistants, following standardized procedures detailed in a project 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.

Questionnaire format. Because many questions are needed to cover all of the topic areas in the study, much of the questionnaire content intended for high school seniors is divided into six different questionnaire forms that are 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 questionnaire form consists of key, or "core," variables that are common to all forms. All demographic variables, and nearly all of the drug *use* variables included in this report, are contained in this core set of measures. Many of the questions dealing with attitudes, beliefs, and perceptions of relevant features of the social environment are in a single form only, and the data are thus based on one-fifth as many cases in 1975-1988 (approximately 3,300) and on one-sixth as many cases in 1989-1998 (approximately 2,600). All tables in this report give the sample sizes upon which the statistics are based, stated in terms of the weighted number of cases (which is roughly equivalent to the actual number of cases).

RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF LOWER GRADES

Beginning in 1991, there was an important expansion of the study to include nationally representative samples of eighth- and tenth-grade students. Surveys at these two grade levels are now also conducted on an annual basis.

In general, the procedures used for the annual in-school surveys of eighth- and tenth-grade students closely parallel those used for high school seniors, including the procedures for selecting schools and students, questionnaire administration, and questionnaire formats. A major exception is that only two different questionnaire forms were used in 1991-1996 and four forms beginning in 1997 rather than the six used with seniors. Identical forms are used for both eighth and tenth grades, and, for the most part, questionnaire content is drawn from the twelfth-grade questionnaires. Thus, key demographic variables and measures of drug use and related attitudes and beliefs are generally identical for all three grades. The forms used in both eighth and tenth grades have a common core (Parts B and C) that parallels the core used in twelfth-grade forms. Many fewer questions about lifestyles and values are included in the eighth- and tenth-grade forms, in part because we think that many of these attitudes are likely to be more fully formed by twelfth grade and, therefore, are best monitored there. For the national survey of eighth graders each year, approximately 155 schools (mostly junior high schools and middle schools) are sampled, and approximately 18,000 to 19,000 students are surveyed. For the tenth graders, approximately 130 high schools are sampled, and approximately 16,000 students are surveyed.

The research design originally called for follow-up surveys of subsamples of the eighth and tenth graders participating in the study, carried out at two-year intervals, similar to the twelfth-grade follow-up samples. In 1991-1994, this plan influenced the design of the cross-sectional studies of eighth and tenth graders in an important way. In order to "capture" many of the eighth-grade participants two years later in the normal tenth-grade cross-sectional study for that year, we selected the eighth-grade schools by drawing a sample of high schools and then selecting a sample of their "feeder schools" that contained eighth graders. This extra stage in the sampling process meant that many of the eighth-grade participants in, say, the 1991 cross-sectional survey were also participants in the 1993 cross-sectional survey of tenth graders. Thus, a fair amount of panel data were generated at no additional cost. However, having followed this design in 1993, we concluded that the saving in follow-up costs did not justify the complexities in sampling, administration, and interpretation. Therefore, beginning in 1994, we changed to a more simplified design in which eighth-grade schools were drawn independently of the tenth-grade school sample. (The two-year follow-up feature has been modified and is now being conducted only on the first three cohorts of students surveyed in the eighth and tenth grades—those surveyed in 1991, 1992, and 1993.)

Because follow-up surveys of new cohorts of eighth and tenth graders are no longer being conducted, the collection of personal identification information for follow-up purposes was no longer a necessity. For confidentiality reasons, this personal information was gathered on a tear-off sheet at the back of each questionnaire. We felt that there were some potential advantages to moving toward a fully anonymous procedure for these grade levels, including: (a) school cooperation might be easier to obtain; (b) any suppression effect the confidential mode of administration might have could be both eliminated and quantified; and (c) if there *were* any mode of administration effect, it would be

removed from the national data, which are widely used for comparison purposes in state and local surveys (nearly all of which use anonymous questionnaires), making those comparisons more valid. Therefore, for the first time in 1998, in half of the eighth- and tenth-grade schools surveyed, the questionnaires administered were made fully anonymous. Specifically the matched half-sample of schools beginning their two-year participation in Monitoring the Future in 1998 received the anonymous questionnaires, while the half-sample participating in the study for their second and final year continued to get the confidential questionnaires. A careful examination of the 1998 results, based on the two equivalent half-samples at grade 8 and at grade 10, revealed that there was no effect of this methodological change among tenth-graders, and, at most, only a very modest effect in the self-reported substance use rates among eighth-graders (with prevalence rates slightly higher in the anonymous condition). The net effect of this methodological change is to increase very slightly the observed eighth grade prevalence estimates for marijuana, alcohol, and cigarettes in 1998 from what they would have been if there was no change in questionnaire administration. For those three drugs, that means that the declines in use in 1998 may be slightly understated for the eighth-graders only. In other words, the direction of the change is the same as shown in the tables, but the actual declines may be slightly larger than those shown. For example, the annual prevalence of marijuana use among eighth-graders is shown to have fallen by 0.8 percentage points between 1997-1998; however, the half-sample of eighth-grade schools receiving exactly the same type of questionnaire that was used in 1997 showed a slightly greater decline of 1.5 percentage points.

For cigarettes, this change in method appeared to have no effect on self-reported rates of daily use or half-pack per day use, and to have had only a very small effect on 30-day prevalence. Thus, for example, the 30-day prevalence of cigarette use among eighth-graders is shown to have fallen 0.3 percentage points between 1997-1998; however, the half-sample of eighth-grade schools receiving exactly the same type of questionnaire that was used in 1997 showed a slightly greater decline of 0.6 percentage points. Finally, lifetime cigarette prevalence is shown as falling by 1.6 percentage points between 1997 and 1998, but in the half-sample of schools with a constant methodology, it fell by 2.6 percentage points.

A journal article examining the effects of mode of administration is under review as of this writing. It uses multivariate controls to assess the effects of the change on the eighth grade self-report data and generally shows even less effect than is to be found without such controls.

All tables and figures in Volume I use the data from both samples of eighth graders combined. This is also true for the tenth graders (for whom we found no methodological effect) and the twelfth graders (for whom it is assumed there is no such effect since none was found among the tenth graders).

RESEARCH DESIGN AND PROCEDURES FOR THE FOLLOW-UP SURVEYS OF SENIORS

Beginning with the graduating class of 1976, each senior class has been followed up annually on a continuing basis after high school, for seven follow-up data collections, which corresponds to their

reaching a modal age of 32.[6] From the roughly 15,000 to 17,000 seniors originally participating in a given class, a representative sample of 2,400 individuals is chosen for follow-up. In order to ensure sufficient numbers of drug users in the follow-up surveys, those seniors reporting 20 or more occasions of using marijuana or any use of any of the other illicit drugs in the previous 30 days are selected with higher probability (by a factor of 3.0) than the remaining seniors. 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 compensate for their over-representation, the actual numbers of follow-up cases are somewhat larger than the weighted numbers reported in the tables.

The 2,400 selected respondents from each class are randomly assigned to one of two matching groups of 1,200 each; one group is surveyed on even-numbered calendar years, while the other group is surveyed on odd-numbered years. This two-year cycle is intended to reduce respondent burden, thus yielding a better retention rate across the years. By alternating the two half-samples, we have data from a given graduating class every year, even though any given respondent participates only every other year.

Follow-up procedures. Using information provided by respondents on a tear-off card at the time of the senior survey (name, address, phone number, and the name and address of someone who would always know how to reach them), mail contacts are maintained for the subset of people selected for inclusion in the follow-up panels. Newsletters are sent each year, and name and address corrections are requested. The questionnaires are sent by certified mail in the spring of each year. A check for $10.00, made payable to the respondent, is attached to the front of each questionnaire.[7] Reminder letters and postcards are sent at fixed intervals thereafter; finally, those who fail to respond receive a prompting phone call from the Survey Research Center's phone interviewing facility in Ann Arbor. If requested, a second copy of the questionnaire is sent; but no questionnaire content is administered by phone.

Panel retention rates. To date, an average of about 77% of those selected for inclusion in follow-up panels have returned questionnaires in the first follow-up after high school. The retention rate declines with time, as would be expected. The 1998 panel retention from the class of 1984—the oldest of the panels, now age 32 (14 years past their first data collection in high school)—was 54%.

Corrections for panel attrition. Because, to a modest degree, attrition is associated with drug use, we have introduced corrections into the prevalence of use estimates for the follow-up panels. These raise the prevalence estimates from the uncorrected ones, but only slightly. We believe the resulting estimates to be the most accurate obtainable for the population of high school senior graduates but still low for the age group as a whole, due to the omission of dropouts and absentees from the population covered by the original panels.[8]

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[6]Further follow-ups occur (or will occur) at half-decade intervals, beginning with age 35.

[7]Note that, for the class of 1991 and all prior classes, the follow-up checks were for $5.00. The rate was raised, beginning with the class of 1992, to compensate for the effects of inflation over the life of the study. An experiment was first conducted that suggested that the increased payment was justified based on the increased panel retention it achieved.

[8]The intent of the weighting process is to correct for the effects of differential attrition on follow-up drug use estimates. Different weights are used for different substances. Cigarettes, alcohol, and marijuana each have one weight for every follow-up of each graduating class. The weights are based on the observed differences in the distribution on an index of twelfth-grade use of the relevant substance for the follow-up sample compared

Follow-up questionnaire format. The questionnaires used in the follow-up surveys are very much like those used in the senior year. They are optically scanned; they contain a core section on drug use and background and demographic factors common to all forms; and they have questions about a wide range of topics at the beginning and ending sections, many of which are unique to each questionnaire form. Many of the questions asked of seniors are retained in the follow-up questionnaires, and respondents are consistently mailed the same version of the questionnaire that they first received in senior year, so that changes over time in their behaviors, attitudes, experiences, and so forth can be measured. Questions specific to high school status and experiences are dropped in the follow-up, of course, and questions relevant to post-high school status and experiences are added. Thus, there are questions about college, military service, civilian employment, marriage, parenthood, and so on.

For the early follow-up cohorts, the numbers of cases on single-form questions are only one-fifth the size of the total follow-up sample. Beginning with the Class of 1989, a sixth form was introduced in senior year. That new questionnaire form was first sent to follow-up respondents in 1990; single-form data since then have N's one-sixth the total follow-up sample size. In the follow-up studies, single-form samples from a single cohort are too small to make reliable estimates; therefore, in most cases where they are reported, the data from several adjacent cohorts are combined.

REPRESENTATIVENESS AND VALIDITY

School participation. Schools are invited to participate in the 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 for that "slot." In 1998, either an original school or a replacement school was obtained in 99% of the sample units, or "slots." 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 "slots" filled since 1977. As shown in the table, replacement schools are obtained in the vast majority of cases.

There are two questions that are sometimes raised with respect to school participation rates: (1) are participation rates so low as to compromise the representativeness of the sample?, and (2) does variation in participation rates over time contribute to changes in estimates of drug use?

With respect to the first issue, the selection of replacement schools (which occurs in practically all instances of an original school refusal) almost entirely removes problems of bias in region, urbanicity, and the like, that might result from certain schools refusing to participate. Other potential biases could be more subtle, however. If, for example, it turned out that most schools with "drug problems" refused to participate, that would seriously bias the sample. And if any other single factor were dominant in most refusals, that also might suggest a source of serious bias. In fact, however, the

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to the distribution based on the full base-year sample. For example, the distribution on the index of marijuana use in the 1988 follow-up of approximately 1,000 respondents from the class of 1976 was compared to the original 1976 base-year distribution for the entire participating base-year class of 17,000 respondents; and weights were derived that, when applied to the base-year data for only those participating in the 1988 follow-up, would reproduce the original base-year frequency distribution. A similar procedure is used to determine a weight for all illicit drugs other than marijuana combined. In this case, however, an average weight is derived across graduating classes. Thus, the same weight is applied, for example, to all respondents in the follow-up of 1988, regardless of when they graduated from high school.

reasons given for a school refusing to participate are varied and are often a function of happenstance events specific to that particular year; only a very small proportion specifically object to the drug-related content of the survey.

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. For example, for tenth graders in 1992, between-schools variance for marijuana use was 4%-6% of the total variance (depending on the specific measure); for inhalant use, 1%-2%; for LSD, 2%-4%; for crack cocaine, 1.0%-1.5%; for alcohol use, 4%-5%; and for cigarette use, 3%-4%. (Eighth- and twelfth-grade values are similar.) To the extent that schools tend to be fairly similar in drug use, then which particular schools participate (within a selection framework that seeks national representation) has a smaller effect on estimates of drug use. The fact that the overwhelming majority of variance in drug use lies within schools implies that, at least with respect to drug use, schools are for the most part fairly similar.[9] Further, some, if not most, of the between-schools variance is due to differences related to region, urbanicity, etc.—factors that remain well controlled in the present sampling design because of the way in which replacement schools are selected.

With respect the second issue, the observed data from the series make it extremely unlikely that results have been significantly affected by changes in response rate. If changes in response rates seriously affected prevalence estimates, there would be noticeable bumps up or down in concert with the changing rates. But in fact the trend figures that result from this series of surveys are very smooth, and change in a very orderly fashion from one year to the next. This suggests very strongly that the level of school-related error in the estimates does not vary much over time. Moreover, the fact that different substances trend in very different ways further refutes any likelihood that changes in response rates are affecting prevalence estimates. We have observed, for example, marijuana use decreasing while cocaine use was stable (in the early 1980s); alcohol use declining while cigarette use was stable (in the mid- to late 1980s); marijuana use increasing while inhalant use was decreasing (from 1994 to 1997). All of these patterns are explainable in terms of psychological, social, and cultural factors (as described in this and previous volumes in this series), and cannot be explained by changes in response rates.

Of course, there could be some sort of a constant bias across the years, but even in the unlikely event that there was, 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 prevalence rates. Thus we have a high degree of confidence that school refusal rates have not seriously biased the survey results.

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[9]Among the schools that actually participated in the study, there is very little difference in substance use rates between the schools that were original selections, taken as a set, and the schools that were replacement schools. Averaged over the years 1991 through 1996, for grades 8 and 10 combined, the difference between original schools and replacement schools averaged less than one percentage point in the observed prevalence rates for monthly cigarette use, binge drinking, and annual marijuana use. (Original schools were slightly higher in cigarette and marijuana use and slightly lower in binge drinking.)

At each grade level, schools are selected in such a way that half of each year's sample comprises schools that participated the previous year, and half comprises schools that will participate the next year. (Both of these 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 errors 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 1996 *and* 1997, then based on the students in the half-sample that participated in both 1997 *and* 1998, and so on. Thus, each one-year matched half-sample trend estimate derived in this way is based on a constant set of about 65 schools (in 12th grade). 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, the results are usually highly similar, indicating that the trend estimates are little affected by turnover or shifting refusal rates in the school samples. As would be expected, the *absolute* prevalence of use estimates for a given year are not as accurate using just the half-sample.

Student participation. In 1998, completed questionnaires were obtained from 88% of all sampled students in eighth grade, 87% in tenth grade, and 82% in twelfth grade. (See Table 3-1 for response rates in earlier years.) The single most important reason that students are missed is absence from class at the time of data collection; in most cases, for reasons of cost efficiency, we do not schedule special follow-up data collections for absent students. Students with fairly high rates of absenteeism also report above-average rates of drug use; therefore, 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 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* because the necessary weighting procedures would have introduced greater sampling variance in the estimates. Appendix A in an earlier report[10] provides a discussion of this point, and Appendix A in the current Volume I illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included. Of course, some students are not absent from class but simply refuse, when asked, to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1% of the target sample for each grade.

Sampling accuracy of the estimates. Confidence intervals (95%) are provided in Tables 4-1a through 4-1d (Chapter 4, Volume I) for lifetime, annual, 30-day, and daily prevalence of use for eighth-, tenth-, and twelfth-grade students. As can be seen in Table 4-1a, confidence intervals for lifetime prevalence for seniors average about ±1.4% across a variety of drug classes. That is, if we took a large number of samples of this size from the universe of all schools containing twelfth graders in the coterminous United States, 95 times out of 100 the sample would yield a result that would be 1.4 percentage points or less divergent from the result we would get from a comparable massive survey of *all* seniors in all schools. This is a high level of sampling accuracy, and it should permit detection of fairly small changes from one year to the next. Confidence intervals for past 12 months, past 30 days, and daily use are generally smaller than those for lifetime use. In general, confidence intervals for eighth and tenth graders are very similar to those observed for twelfth graders. Some drugs are measured on only one or two forms (smokeless tobacco, PCP, nitrites, and others, as

[10]Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1984). *Drugs and American high school students: 1975-1983.* DHHS (ADM) 85-1374. Washington, D.C.: U.S. Government Printing Office.

indicated in Table 2-1 footnotes); these drugs will have larger confidence intervals due to their smaller sample sizes. Appendix C of Volume I contains information for the interested reader on how to calculate confidence intervals around other point estimates; it also provides the information needed to compare trends across time or to test the significance of differences between subgroups.

VALIDITY OF THE 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 self-report questions produce largely valid data. A more complete discussion of the contributing evidence that leads to this conclusion may be found in other publications; here we will only briefly summarize the evidence.[11]

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.[12] 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 seniors reporting some illicit drug use by senior year has reached two-thirds of all respondents in peak years and nearly 80% in some follow-up years, constituting *prima facie* evidence that the degree of under-reporting must be very limited. Fourth, the seniors' reports of use by their unnamed friends—about whom they would presumably have less reason to distort reports of use—has been highly consistent with self-reported use in the aggregate in terms of both prevalence *and* trends in prevalence, as will be discussed later in this report. Fifth, we have found self-reported drug use to relate in consistent and expected ways to a number of other attitudes, behaviors, beliefs, and social situations—in other words, there is strong evidence of "construct validity." Sixth, the missing data rates for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of explicit instructions to respondents to leave blank those drug use questions they felt they could not 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.[13] There was a higher level of recanting for the psychotherapeutic drugs, which we interpreted as suggesting that adolescents actually may overestimate their use of some of these drugs because of misunderstanding definitions which get cleared up as they get older. Finally, the

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[11]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, D.C.: 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, D.C.: U.S. 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. Rockville, MD: National Institute on Drug Abuse.

[12]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.

[13]Johnston, L.D. & O'Malley, P.M. (1997). The recanting of earlier reported drug use by young adults. In Harrison, L. (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (pp. 59-80). (NIDA Research Monograph 167, pp 59-79). Rockville, MD: National Institute on Drug Abuse.

great majority of respondents, when asked, say they would answer such questions honestly if they were users.[14]

This is not to argue that self-reported measures of drug use are valid in all cases. In the present study we have gone to great lengths to create a situation and set of procedures in which students feel that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. We think 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 under-reporting. Thus, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

One procedure we undertake to help assure the validity of our data is worth noting. We check for logical inconsistencies in the triplets of answers about the use of each drug (i.e., about lifetime, past year, and past 30-day use), and if a respondent exceeds a minimum number of inconsistencies, his or her drug use data are deleted. Similarly, we check for improbably high rates of use of multiple drugs and delete the drug data of such cases, on the assumption that the respondents are not taking the task seriously. Relatively few cases are eliminated in this way.

Consistency and the measurement of trends. One further point is worth noting in a discussion of the validity of the findings. The Monitoring the Future project is designed to be sensitive to changes from one time period to another. Accordingly, the measures and procedures have been standardized and applied consistently across each data collection. To the extent that any biases remain because of limits in school and/or student participation, 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 way from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, which means that our measurement of *trends* should be affected very little by any such biases. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

[14]For a discussion of reliability and validity of student self-report measures of drug use like those used in Monitoring the Future across varied cultural settings, see also 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.

TABLE 3-1

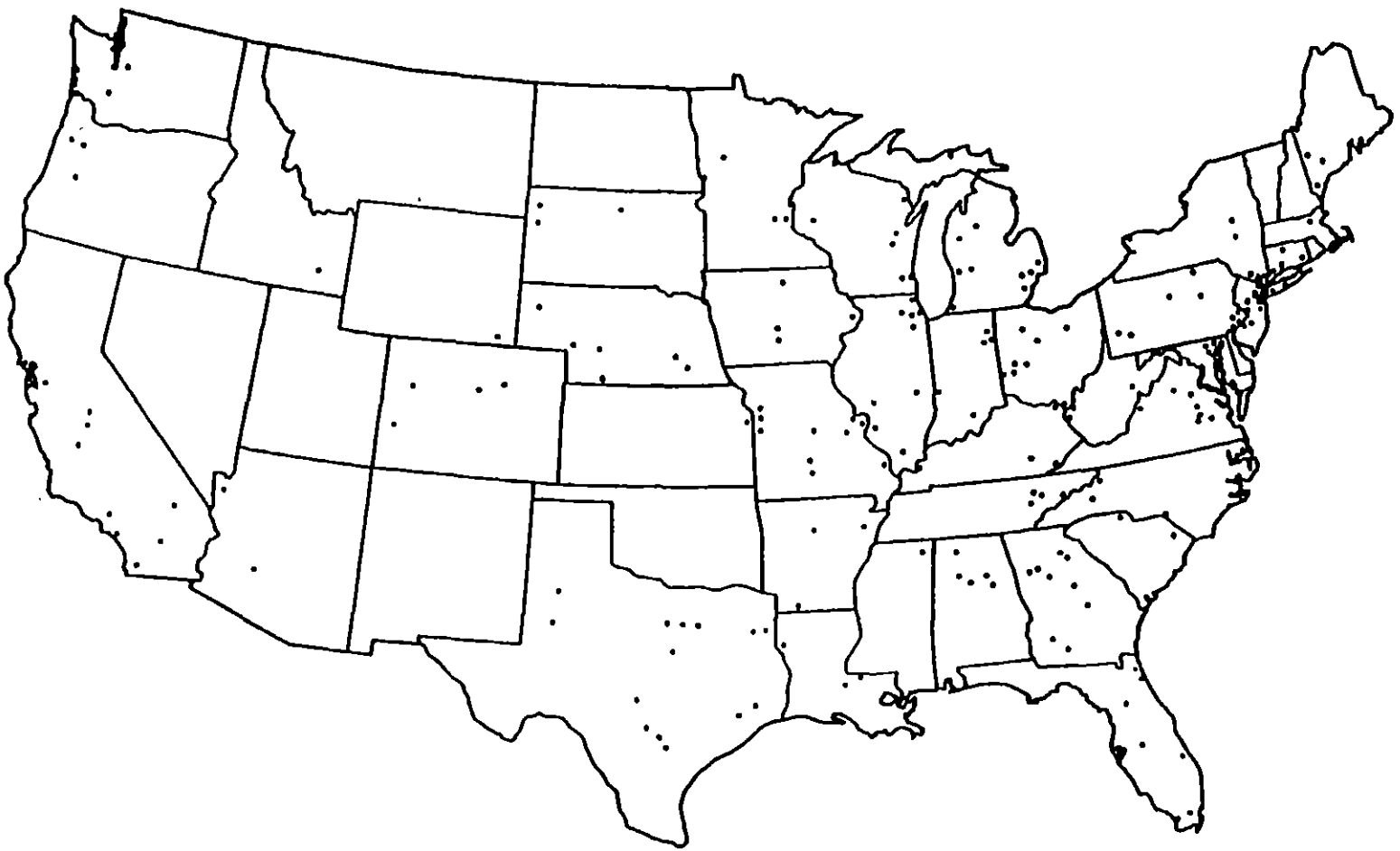
Sample Sizes and Response Rates

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Twelfth Grade																								
Number public schools	111	108	108	111	111	107	109	116	112	117	115	113	117	113	111	114	117	120	121	119	120	118	126	124
Number private schools	14	15	16	20	20	20	19	21	22	17	17	16	18	19	22	23	19	18	18	20	24	21	21	20
Total number schools	125	123	124	131	131	127	128	137	134	134	132	129	135	132	133	137	136	138	139	139	144	139	146	144
Total number students	15,791	16,678	18,436	18,924	16,662	16,524	18,267	18,348	16,947	16,499	16,502	15,713	16,843	16,795	17,142	15,676	15,483	16,251	16,763	15,929	15,876	14,824	15,963	15,780
Student response rate	78%	77%	79%	83%	82%	82%	81%	83%	84%	83%	84%	83%	84%	83%	86%	86%	83%	84%	84%	84%	84%	83%	83%	82%
Tenth Grade																								
Number public schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	107	106	111	116	117	113	113	110
Number private schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14	19	17	14	22	20	18	19
Total number schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	121	125	128	130	139	133	131	129
Total number students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,996	14,997	15,516	16,080	17,285	15,873	15,778	15,419
Student response rate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87%	88%	86%	88%	87%	87%	86%	87%
Eighth Grade																								
Number public schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	131	133	126	116	118	122	125	122
Number private schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31	26	30	34	34	30	27	27
Total number schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162	159	156	150	152	152	152	149
Total number students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,844	19,015	18,820	17,708	17,929	18,368	19,066	18,667
Student response rate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90%	90%	90%	89%	89%	91%	89%	88%

SOURCE: The Monitoring the Future Study, the University of Michigan.

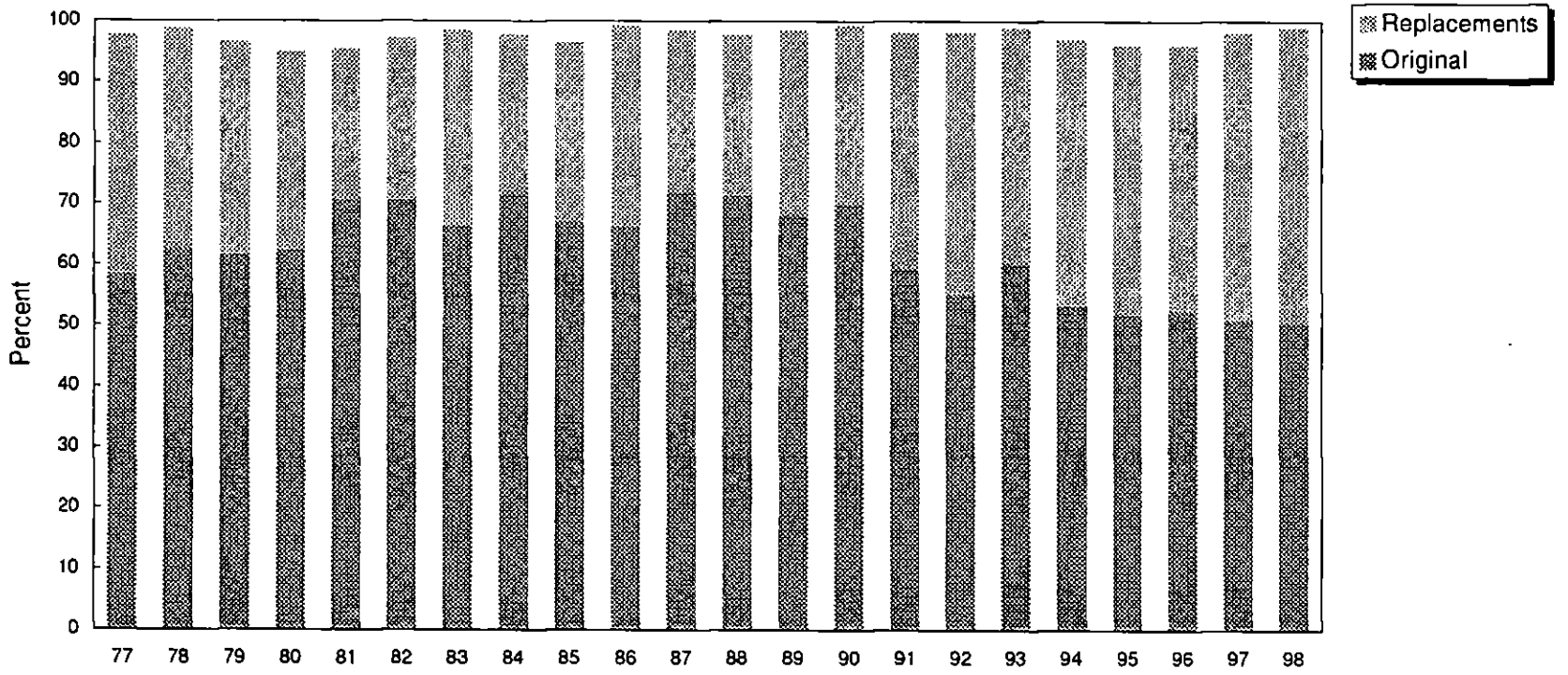
FIGURE 3-1

Counties Included in One Year's Data Collection



NOTE: Counties may contain multiple schools and up to three grade levels each.

FIGURE 3-2
School Response Rates



	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
Original	59	63	62	63	71	71	66	72	67	66	72	71	68	70	59	55	60	53	52	53	51	51
Replacements	39	36	35	32	25	26	32	26	29	33	26	26	30	29	39	43	39	44	44	43	47	48
Total	98	99	97	95	96	97	99	98	96	99	99	98	99	99	98	98	99	97	96	96	98	99

Chapter 4

PREVALENCE OF DRUG USE AMONG YOUNG ADULTS

As described in more detail in the preceding chapter, the Monitoring the Future study conducts ongoing panel studies on representative samples from each graduating class. The first such panel is based on the Class of 1976. Two matched sub-panels, of roughly 1,200 seniors each, are selected from each graduating class—one panel is surveyed every even-numbered year after graduation, the other is surveyed every odd-numbered year. Thus, in a given year, the study encompasses one of the panels from each of the last fourteen senior classes previously participating in the study. Because the study design calls for an end of biennial follow-ups of these panels after they reach approximately age 32 (i.e., seven follow-ups for each half-panel), the classes of 1976 through 1983 were not included in the standard 1998 follow-up surveys. In 1998, this meant that representative samples of the classes of 1984 through 1997 were surveyed by mail. Additional surveys are conducted at age 35 and at five-year intervals thereafter. In 1998, the Class of 1981 received the "age 35" follow-up questionnaire and the Class of 1976 received the "age 40" questionnaire; the findings from these special questionnaires will be provided in future reports.

In this section, we present the results of the 1998 follow-up survey, which should accurately characterize approximately 85% of all young adults in the class cohorts one to fourteen years beyond high school (modal ages 19 to 32). The remaining 15% or so, the high school dropout segment, was missing from the senior year surveys and, of course, is missing from all of the follow-up surveys, as well, so the results presented here are not generalizable to that part of the population.

Figures 4-1 through 4-20 contain the 1998 *prevalence* data by age, corresponding to those respondents one to fourteen years beyond high school (modal ages 19 to 32). Later figures contain the *trend* data for each age group, including seniors and graduates who are up to fourteen years past high school (modal age 32). With the exception of the twelfth graders, age groups have been paired into two-year intervals in both sets of figures in order to increase the number of cases, and thus the reliability, for each point estimate.

It is worth noting that the pattern of age-related differences in any one year can be checked against an adjacent year (i.e., last year's volume or next year's) for replicability, because two non-overlapping half-samples of follow-up respondents have been used.

A NOTE ON LIFETIME PREVALENCE ESTIMATES

In Figures 4-1 through 4-20, two different estimates of lifetime prevalence are provided. One estimate is based on the respondent's most recent statement of whether he or she ever used the drug in question (the light gray bar). The other estimate takes into account the respondent's answers regarding lifetime use gathered in *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, the respondent has either to have reported past use in the most recent data collection and/or to have reported some use in his or her lifetime on at least two earlier occasions. Because respondents in the age groups of 18 and 19-20 cannot have their responses adjusted on the basis of two earlier occasions, adjusted prevalence rates are reported only for ages 21 and older. The unadjusted estimate is most commonly presented in epidemiological studies, since it can be made based on the data from a single cross-sectional survey. An adjusted estimate of the type used here is possible only when panel data have been gathered and a respondent can be classified as having used a drug at sometime 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 as a function of age shows that there is more inconsistency as time passes. Obviously, there is more opportunity for inconsistency 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, and the upper estimate may include earlier response errors or incorrect definitions of drugs which respondents appropriately corrected in later surveys. It should be noted that a fair proportion of those giving inconsistent answers across time had earlier reported having used only once or twice in their lifetime. As we have reported elsewhere, cross-time stability of self-reported usage measures, which take into account the number of occasions of self-reported use, is still very high.[15]

It also should be noted that the divergence between the two lifetime prevalence estimates is greatest for the psychotherapeutic drugs and for the derivative index of "use of an illicit drug other than marijuana," which is heavily affected by the psychotherapeutic estimates. We believe this 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 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 undoubtedly be able to categorize them with a higher degree of certainty. Also, those who have experimented more recently, 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 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 *current* (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 primarily of importance in showing the degree to which a drug class has penetrated the general population.[16]

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[15]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.

[16]For a more detailed analysis and discussion of this issue, see Johnston, L.D. and O'Malley, P.M. (1997). The recanting of earlier-reported drug use by young adults. In L. Harrison & A. Hughes (Eds.), *Validity of Data in Longitudinal Studies*. (NIDA Research Monograph No. 97-4147.) Washington, DC: National Institute on Drug Abuse.

PREVALENCE OF DRUG USE AS A FUNCTION OF AGE

For virtually all drugs, available age comparisons show a much higher lifetime prevalence for the older age groups. In fact, the figures reach impressive levels among young adults in their early thirties.

- In 1998 the adjusted lifetime prevalence figures among 31 to 32 year olds reach 75% for ***any illicit drug***; 56% for ***any illicit drug other than marijuana***; 70% for ***marijuana***; and 32% for ***cocaine***. Put another way, among young Americans who graduated high school in 1984 and 1985—somewhat after the peak of the larger drug epidemic—only one-quarter (25%) have never tried an illegal drug.

  The 1998 survey responses, *unadjusted* for previous answers, show somewhat lower lifetime prevalence: 68% for ***any illicit drug***, 44% for ***any illicit drug other than marijuana***, 64% for ***marijuana***, and 27% for ***cocaine***.

- Despite the higher levels of lifetime use among older age groups, they generally show levels of *annual* or *current* use which are no higher than such use among today's high school seniors. In fact, for a number of drugs the levels reported by older respondents are lower, suggesting that the incidence of quitting more than offsets the incidence of initiation after high school.

  In analyses published elsewhere, we looked closely at patterns of change in drug use, and identified some post-high school experiences which contribute to declining levels of annual or current use 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 in general, ***heavy drinking*** in particular, ***marijuana*** use, and use of ***other illicit drugs***.[17]

- For the use of ***any illicit drug***, lifetime prevalence is 68% among 31 to 32 year olds vs. "only" 54% among the 1998 high school seniors. Annual prevalence, however, is highest among the seniors (41%) with progressively lower rates among the older age groups, reaching 19% among the 31 to 32 year olds (see Figure 4-1). Current (30-day) prevalence shows much the same pattern with seniors having the highest rate (26%), and the rate declining gradually for each of the older age groups, reaching 10% among the 31 to 32 year-olds.

- A similar pattern exists for ***marijuana***: a higher lifetime prevalence as a function of age, but considerably lower annual and 30-day prevalence rates during the late 20s. Current ***daily marijuana*** use shows the least variation across age (see Tables 2-1 and 4-5). Still, it falls from 5.6% among twelfth

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

graders, down to 2.3% among 27-28 year olds, then rises to 2.8% among 31-32 year olds. This curvilinear pattern suggests that a "cohort effect" may be working here, in addition to the "age effect".[18]

- Statistics on the use of ***any illicit drug other than marijuana*** (Figure 4-2) have a similar pattern. Like marijuana and the any-illicit-drug-use index, corrected lifetime rates on this index also show an appreciable rise with age level, reaching 56% among the 31 to 32 year old age group. Current use shows a decline across the age bands, ranging from 11% among seniors to 4% among 31 to 32 year olds. Annual use is lower with increased age of the respondent; in fact, most of the individual drugs that constitute this category show lower rates at higher ages for annual prevalence. Some exceptions are ***tranquilizers*** and all forms of ***cocaine***.

- Several classes of drugs show rates of current use among the older age groups proportionately much lower than among seniors. For example, annual prevalence rates for ***hallucinogens*** fall sharply from 9% among high school seniors to 1% by age 31-32 (Figure 4-8). ***Inhalants*** (Figure 4-11) also show a sharp drop off with age level in annual and 30-day use.

- For ***amphetamines***, lifetime prevalence is again much higher among the older age groups—reflecting the addition of many new users who initiate in the twenties (Figure 4-4). (There is also a considerable divergence between the corrected lifetime prevalence vs. the contemporaneously reported lifetime prevalence, as is true for most of the psychotherapeutic drugs.) However, more recent use as reflected in the annual prevalence figure is now lower among the older age groups. This has not always been true; the present pattern is the result of a sharper decline in use among older respondents than has occurred among seniors. These trends are discussed in the next chapter.

- Questions on the use of ***crystal methamphetamine*** (ice), are contained in two of the six questionnaire forms, making the estimates less reliable than those based on all six forms. Among the 19 to 32 year old respondents *combined*, 1.0% reported some use in the prior year—lower than the 3.0% reported by seniors (Figure 4-16).

- ***Barbiturates*** are similar to amphetamines in that lifetime prevalence is appreciably higher in the older ages and annual use appreciably lower; one difference is that active nonmedical use of barbiturates after high school always has been lower than such use during high school (Figure 4-12). At present, current usage rates are quite low in all age groups, therefore 30-day use varies rather little by age.

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[18]See 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.

- ***Narcotics other than heroin*** show age differences very similar to those seen for barbiturates—somewhat higher lifetime prevalence as a function of age, annual prevalence declining modestly with age, and 30-day use varying little with age (Figure 4-13).

- ***Tranquilizer*** use shows an increase with age in lifetime prevalence and some decrease with age in annual prevalence. Thirty-day prevalence is fairly flat across age (Figure 4-14).

- ***Cocaine*** generally has presented a unique case among the illicit drugs in that lifetime, annual, and current prevalence rates have all tended to be higher among the older age groups (Figure 4-5). By 1994, however, 30-day cocaine use had reached such low levels that it varied rather little by age; since then, annual and current use have been fairly similar across all age groups.

- In 1998, lifetime prevalence of ***crack*** use reached 3% to 8% (uncorrected) among those in their late 20s and early 30s, vs. 4% among seniors. This, no doubt, reflects something of a cohort effect due to the rather transient popularity of crack in the early- to mid-1980s. Current prevalence is very low at all ages. On average, the follow-up respondents one to fourteen years out of high school have an annual prevalence of 1.0% vs. 2.5% among seniors, and a 30-day prevalence of 0.3% vs. 1.0% among seniors. Clearly the follow-up respondents have a higher rate of noncontinuation than seniors, as is true for most other drugs.

  We believe that the omission of high school dropouts is likely to have a greater than average impact on the prevalence estimates for crack (as is the case with the senior data).

- In 1989, ***MDMA*** (ecstasy) was added to two of the six forms of the follow-up surveys to assess how widespread its use had become among young adults. Questions about its use were not asked of high school students until 1996, primarily because we were concerned that its alluring name might have the effect of stimulating interest. We were less concerned about such an effect after the name of the drug had become more widely known.

  Relatively few 1998 respondents report any use of MDMA (Figure 4-15). Among all 19 to 32 year olds combined, 6.8% say they have ever tried it, compared to 5.8% of high school seniors. Annual use levels are substantially lower after 22 years of age, with current (30-day use) decreasing gradually throughout the entire age range.

- In the case of ***alcohol***, all prevalence rates generally increase for the first four years after high school, through age 21 or 22 (Figure 4-19a). After that, prevalence rates vary slightly for the different age groups. Lifetime

prevalence, due in large part to a "ceiling effect," changes very little after age 21 to 22. Current (30-day) alcohol use is considerably higher at age 21-22 (69%) than among seniors (52%); it stays fairly steady through age 32 (65%). Current ***daily drinking*** varies rather little by age; it is at 3%-6% between ages 18 and 32 (Figure 4-19b).

- Among the various measures of alcohol consumption, ***occasions of heavy drinking*** in the two weeks prior to the survey show large differences among the age groups (Figure 4-19b). There is a fair difference between 18 year-olds (32%) and 21 to 22 year-olds, who have the highest prevalence of such heavy drinking (40%). Then there is a fall-off with each subsequent age group, reaching 23% by age 31 to 32. We have interpreted this curvilinear relationship as reflecting an age effect—and not a cohort effect—because it seems 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 increases heavy drinking) and marriage (which decreases it)[19].

- ***Cigarette smoking*** also shows an unusual pattern of age-related differences (Figure 4-20). On the one hand, current (30-day) smoking is about the same among those in their early 20s as among high school seniors, reflecting the fact that relatively few new people are recruited to smoking after high school. On the other hand, smoking at heavier levels—such as smoking half-a-pack daily—is somewhat higher among those in their 20s than among high school seniors, reflecting the fact that many previously moderate smokers move into a pattern of heavier consumption after high school[20]. While slightly more than a third (36%) of the current smokers in high school smoke at the rate of half-pack a day or more, almost two-thirds (64%) of the current smokers in the 31 to 32 age group do so.

- Questions about use of ***steroids*** were added in 1989 to one form only (and to an additional form in 1990), making it difficult to determine age-related differences with much accuracy. Overall, 1.7% of 19 to 32 year olds in 1998 reported having used steroids in their lifetime. Annual and 30-day use levels were very low, at 0.4% and 0.2%, respectively. The rates among seniors are considerably higher, which may reflect both age and cohort effects. (See Tables 4-2 to 4-4.)

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[19]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. See also Bachman et al., (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates.

[20]Because age is confounded with class cohort, and because we have established that cigarette smoking shows strong cohort effects (enduring differences among cohorts), one must be careful in interpreting age-related differences in a cross-sectional sample as if they were due only to age effects, i.e., changes with age consistently observable across cohorts. However, multivariate analyses conducted on panel data from multiple cohorts do show a consistent age effect of the type mentioned here (O'Malley, Bachman, & Johnston, (1988). *op. cit.*).

PREVALENCE COMPARISONS FOR SUBGROUPS OF YOUNG ADULTS

Gender Differences

Statistics on usage rates for the group of young adults one to fourteen years beyond high school (modal ages 19 to 32), are given for the total sample and separately for males and females in Tables 4-1 to 4-5. In general, most of the gender differences in drug use which pertained in high school may be found in the young adult sample as well.

- Somewhat more males than females report using ***any illicit drug*** during the prior year (31% vs. 25%). Males have higher annual prevalence rates in nearly all of the specific illicit drugs—with the highest ratios (all 1.9 or greater) pertaining for ***LSD***, ***hallucinogens***, and all forms of ***cocaine***. For example, among the 19 to 32 year olds, LSD was used by 4.3% of males vs. 2.5% of females during the prior twelve months.

- All forms of ***cocaine*** in general were used by more males than females in the past year. Annual ***cocaine*** use was reported by 6.5% of the males and 3.3% of the females, ***crack*** use by 1.5% of the males and 0.6% of the females, ***other cocaine*** use by 6.0% of the males and 3.1% of the females.

- Other large gender differences are found in ***daily marijuana*** use (5.2% for males vs. 2.1% for females in 1998), ***daily alcohol*** use (6.8% vs. 1.9%), and occasions of drinking ***five or more drinks in a row*** in the prior two weeks (44% vs. 23%). This gender difference in occasions of heavy drinking is greater among young adults than among high school seniors, where it is 39% for males vs. 24% for females.

- The use of ***amphetamines*** which is now about equivalent among males and females in high school, is also fairly similar for both genders in this post-high school period (annual prevalence 4.1% vs. 3.8% respectively).

- ***Crystal methamphetamine*** (ice) is used by small percentages of both genders, but more by males (1.3% annual prevalence) than females (0.8%).

- In the 1980s, there were few differences between males and females in rate of ***cigarette*** use. By the early 1990s however, there were slightly higher rates of use by males. Among high school seniors, past month prevalence is 36% for males, compared to 33% for females. Daily use rates are 23% and 22%, respectively, and half-pack or more use rates are 14% and 11%, respectively. The patterns are similar among the 19 to 32 year olds, with males slightly more likely to have smoked in the past month (31% vs. 28%), to have smoked daily (22% vs. 20%), and to have smoked half-a-pack or more per day (17% vs. 14%).

- ***Steroid*** use among young adults is much more prevalent among males than females, as is true for seniors. Among seniors, 2.8% of the males reported steroid use in the past year vs. 0.3% of the females. These statistics are much lower among the 19 to 32 year olds—0.4%—with males accounting for all of the steroid use.

- ***MDMA*** (ecstasy) is higher among males than females in the young adult sample (annual prevalence 2.5% vs. 1.9%, respectively).

Regional Differences

Follow-up respondents are asked in what state they currently reside. States are then grouped into the same regions used in the analysis of the high school data.[21] Tables 4-2 through 4-5 present regional differences in lifetime prevalence, annual prevalence, 30-day prevalence, and current daily prevalence, for the 19 to 32 year olds combined.

- Regional differences in use are not very large for ***marijuana***, except that the South is lower than the other regions. The South is also somewhat lower in the proportion using ***any illicit drug***.

- The Northeast shows slightly higher than average rates of monthly ***cocaine*** use, and the North Central, slightly lower. In earlier years, the regional differences were much larger, but they diminished as the overall prevalence of cocaine use dropped.

- ***Crack*** shows only slight differences based on region for either young adults or seniors in 1998, though use is typically highest in the West.

- The annual use of ***amphetamines*** is lowest in the Northeast and North Central regions and highest in the West. Twelfth graders exhibit a different pattern, with annual amphetamine use also lowest in the Northeast, but highest in the North Central.

- The use of ***crystal methamphetamine*** (ice) by 19 to 32 year olds is concentrated primarily in the Western region of the country, 2.0% annual prevalence vs. 0.4%-1.2% for all other regions. This is also the case for high school seniors.

[21]States are grouped into regions as follows: ***Northeast*** - Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania; ***North Central*** - Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; ***South*** - Deleware, 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.

- ***Hallucinogen*** use is fairly evenly distributed across all regions as is true for ***LSD***, specifically.

- For the ***remaining illicit drugs***, the annual and 30-day prevalence rates tend to be very low, at or under 3.6% and 0.8%, respectively, making regional differences small in absolute terms (see Tables 4-3 and 4-4).

- All prevalence rates for ***alcohol*** are somewhat higher in the Northeast and North Central regions than in the Southern and Western parts of the country, as generally has been true among seniors.

- As with alcohol, ***cigarette smoking*** among young adults is highest in the Northeast and North Central, as it is among seniors. It is lowest in the West.

Population Density Differences

Population density is measured by asking respondents to check which of a number of listed alternatives best describes the size and nature of the community where they lived during March of the year in which they are completing the follow-up questionnaire. The major answer alternatives are listed in Table 4-2 and the population size given to the respondent to help define each level is provided in a footnote. An examination of the 1987 and 1988 drug-use data for the two most urban strata revealed that the modest differences in prevalence rates between the suburbs and the corresponding cities were not worth the complexity of reporting them separately; accordingly, these categories have been merged. See Tables 4-3 through 4-5 for the relevant results discussed below.

- Differences in illicit drug use by population density tend to be very modest, perhaps more modest than is commonly supposed. This is not to deny that certain drug problems are more common in highly urban areas—injection drug use and addictive use of crack cocaine, for example, are likely concentrated in inner-city urban areas. Among the general population, however, use of most illicit drugs is fairly broadly distributed among all areas from rural to urban. To the extent that there are variations, almost all of the associations are positive, 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 higher, with only small variations among these three categories. The modest positive association, based on annual prevalence, is true for ***any illicit drug*** use, ***marijuana***, and ***cocaine*** (but not ***crack***).

- Among young adults, the lifetime, annual, and 30-day ***alcohol*** use measures all show a slight positive association with population density. ***Occasions of heavy drinking*** are about the same across all strata except farm/country, which has a slightly lower rate (see Table 4-5). ***Daily*** use stands between 3.7% and 4.8% for all community size strata.

- In contrast, a *negative* association with population density exists for ***daily cigarette smoking*** which is highest in the farm/country stratum and lowest in the very large cities (daily prevalence rates of 24% and 17%, respectively). The same is true for smoking at the half-pack-a-day level.

TABLE 4-1

Prevalence of Use of Various Types of Drugs, by Gender, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

Approx. Weighted N =	Males *(3500)*	Females *(4700)*	Total *(8200)*
Any Illicit Drug[a]			
Annual	31.0	24.5	27.3
Thirty-Day	18.5	11.8	14.6
Any Illicit Drug[a] Other than Marijuana			
Annual	14.9	10.0	12.1
Thirty-Day	6.6	3.8	5.0
Marijuana			
Annual	28.4	21.9	24.7
Thirty-Day	17.0	10.7	13.4
Daily	5.2	2.1	3.4
Inhalants[b,c]			
Annual	2.1	1.4	1.7
Thirty-Day	0.8	0.4	0.6
Hallucinogens[c]			
Annual	6.3	2.6	4.2
Thirty-Day	1.7	0.6	1.1
LSD			
Annual	4.3	1.7	2.8
Thirty-Day	1.2	0.4	0.8
PCP[d]			
Annual	0.1	0.8	0.5
Thirty-Day	0.0	0.3	0.2
Cocaine			
Annual	6.5	3.3	4.7
Thirty-Day	2.4	1.1	1.7
Crack			
Annual	1.5	0.6	1.0
Thirty-Day	0.4	0.2	0.3
Other Cocaine[e]			
Annual	6.0	3.1	4.3
Thirty-Day	2.3	0.9	1.5
MDMA ("Ecstasy")[f]			
Annual	2.5	1.9	2.2
Thirty-Day	0.6	0.5	0.6
Heroin			
Annual	0.5	0.3	0.4
Thirty-Day	0.1	0.1	0.1
Other Narcotics[g]			
Annual	3.7	2.5	3.0
Thirty-Day	1.2	0.6	0.8

TABLE 4-1 (cont.)

Prevalence of Use of Various Types of Drugs, by Gender, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

Approx. Weighted N =	Males *(3500)*	Females *(4700)*	Total *(8200)*
Amphetamines, Adjusted[g,h]			
Annual	4.1	3.8	3.9
Thirty-Day	1.6	1.3	1.4
Crystal Methamphetamine ("Ice")[f]			
Annual	1.3	0.8	1.0
Thirty-Day	0.2	0.2	0.2
Barbiturates[g]			
Annual	2.6	1.8	2.2
Thirty-Day	1.0	0.6	0.8
Tranquilizers[g]			
Annual	4.1	3.3	3.6
Thirty-Day	1.6	0.8	1.1
Steroids[f]			
Annual	0.8	0.0	0.4
Thirty-Day	0.4	0.0	0.2
Alcohol			
Annual	84.6	83.4	83.9
Thirty-Day	72.8	62.0	66.6
Daily	6.8	1.9	4.0
5+ drinks in a row in the last 2 weeks	43.9	22.9	31.8
Cigarettes			
Annual	39.4	37.4	38.3
Thirty-Day	30.5	27.7	28.9
Daily (Any)	21.6	20.2	20.8
Half-pack or more per day	16.8	13.6	15.0

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

'*' indicates a prevalence rate of less than 0.05% but greater than true zero.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]This drug was asked about in five of the six questionnaire forms. Total N is approximately 6800.
[c]Unadjusted for known underreporting of certain drugs. See text for details.
[d]This drug was asked about in one of the six questionnaire forms. Total N is approximately 1400.
[e]This drug was asked about in four of the six questionnaire forms. Total N is approximately 5500.
[f]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[g]Only drug use which was not under a doctor's orders is included here.
[h]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 4-2

Lifetime Prevalence of Use of Various Types of Drugs by Subgroups, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Any Illicit Drug[a]	Any Illicit Drug[a] Other than Marijuana	Marijuana	Inhalants[b,c]	Hallucinogens[b]	LSD	PCP[d]	MDMA[c]	Cocaine
Total	*8200*	59.5	32.8	56.6	14.0	17.8	15.7	2.5	6.8	15.5
Gender:										
Male	*3500*	61.3	35.3	58.9	17.5	22.1	19.5	2.4	7.8	18.6
Female	*4700*	58.2	30.9	54.8	11.3	14.6	12.9	2.6	6.1	13.2
Modal Age:										
19-20	*1300*	54.8	27.6	51.3	13.8	15.7	13.9	3.2	7.7	9.0
21-22	*1300*	57.2	29.9	54.3	15.6	18.4	16.9	3.3	8.5	11.4
23-24	*1300*	55.6	29.3	53.4	13.4	17.6	15.8	1.8	5.2	11.8
25-26	*1100*	56.5	30.6	54.6	14.4	17.8	16.6	2.7	6.5	13.4
27-28	*1200*	61.4	32.3	58.7	13.9	17.7	15.5	2.5	7.8	16.5
29-30	*1000*	66.5	39.2	62.4	13.7	18.5	15.8	1.3	6.0	22.9
31-32	*1000*	67.7	44.1	64.3	12.7	19.0	15.7	2.9	5.9	27.4
Region:										
Northeast	*1500*	62.4	33.6	60.0	15.4	19.7	16.4	3.7	6.4	17.3
Northcentral	*2300*	58.6	31.2	55.8	13.6	16.5	14.8	1.9	3.7	13.0
South	*2700*	56.5	30.5	52.8	12.7	15.4	14.1	2.5	7.8	13.7
West	*1700*	63.5	38.5	61.2	15.9	21.8	19.1	2.2	9.5	20.6
Population Density[f]:										
Farm/Country	*1000*	53.4	30.4	48.8	13.1	13.8	13.1	1.7	3.2	12.6
Small Town	*2300*	58.8	32.7	55.2	13.5	16.7	15.2	1.7	5.4	15.6
Medium City	*1800*	59.9	32.0	57.8	13.8	17.4	15.2	3.2	6.5	14.5
Large City	*1800*	60.0	33.1	57.1	14.6	19.1	16.5	3.1	6.9	15.8
Very Large City	*1300*	64.0	35.1	62.1	14.9	20.8	17.6	2.8	11.6	18.2

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

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]Unadjusted for known underreporting of certain drugs. See text for details.
[c]This drug was asked about in five of the six questionnaire forms. Total N is approximately 6800.
[d]This drug was asked about in one of the six questionnaire forms. Total N is approximately 1400.
[e]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[f]A small town is defined as having less 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 residents. Within each level of population density, suburban and urban respondents are combined.

(Table continued on next page)

TABLE 4-2 (cont.)

Lifetime Prevalence of Use of Various Types of Drugs by Subgroups, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

	Crack	Heroin	Other Narcotics[a]	Amphetamines[b]	Barbiturates[a]	"Ice"[c]	Tranquilizers[a]	Steroids[c]	Alcohol	Cigarettes
Total	4.6	1.5	9.6	16.2	7.5	3.2	10.9	1.7	91.4	NA
Gender:										
Male	5.9	2.0	11.7	17.3	8.9	4.1	11.7	3.5	91.0	NA
Female	3.6	1.2	8.0	15.5	6.4	2.6	10.3	0.2	91.6	NA
Modal Age:										
19-20	3.4	2.6	8.6	13.6	7.6	3.4	8.1	1.4	84.4	NA
21-22	3.5	1.3	9.5	13.2	6.6	3.6	9.6	1.4	91.1	NA
23-24	4.4	1.2	8.7	13.3	6.4	4.1	8.7	0.7	91.9	NA
25-26	3.3	1.2	8.5	14.6	7.0	2.8	10.2	2.1	92.4	NA
27-28	4.1	1.4	10.1	17.0	7.1	2.7	12.1	1.7	93.8	NA
29-30	6.1	1.3	10.1	19.6	8.0	0.9	12.5	2.2	93.8	NA
31-32	7.9	1.6	12.4	24.8	10.4	4.5	17.1	3.5	93.7	NA
Region:										
Northeast	4.4	1.5	10.0	13.5	7.5	1.5	11.9	0.7	93.0	NA
Northcentral	3.9	1.1	9.8	16.2	6.7	2.7	8.7	1.4	94.0	NA
South	4.0	1.9	8.5	15.9	8.5	2.9	11.8	2.2	89.8	NA
West	6.6	1.6	11.1	19.5	7.2	6.7	12.1	1.9	89.3	NA
Population Density[d]:										
Farm/Country	5.0	1.4	8.7	18.4	9.2	3.4	10.2	1.3	88.5	NA
Small Town	4.0	1.0	9.2	16.1	6.5	3.8	10.0	1.7	92.2	NA
Medium City	4.4	1.9	9.2	15.9	7.7	2.6	10.4	1.3	90.3	NA
Large City	5.1	1.6	10.0	15.6	7.7	3.0	11.4	1.8	92.7	NA
Very Large City	4.4	2.1	11.3	15.8	7.0	3.6	12.8	2.1	92.0	NA

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

'NA' indicates data not available.

[a]Only drug use which was not under a doctor's orders is included here.
[b]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.
[c]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[d]A small town is defined as having less 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 residents. Within each level of population density, suburban and urban respondents are combined.

TABLE 4-3

Annual Prevalence of Use of Various Types of Drugs by Subgroups, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Any Illicit Drug[a]	Any Illicit Drug[a] Other than Marijuana	Marijuana	Inhalants[b,c]	Hallucinogens[b]	LSD	PCP[d]	MDMA[e]	Cocaine
Total	*8200*	27.3	12.1	24.7	1.7	4.2	2.8	0.5	2.2	4.7
Gender:										
Male	*3500*	31.0	14.9	28.4	2.1	6.3	4.3	0.1	2.5	6.5
Female	*4700*	24.5	10.0	21.9	1.4	2.6	1.7	0.8	1.9	3.3
Modal Age:										
19-20	*1300*	40.6	17.3	37.2	4.1	8.1	5.9	0.7	4.0	5.3
21-22	*1300*	34.1	15.3	31.9	2.4	6.7	4.4	1.7	3.7	6.0
23-24	*1300*	27.4	12.9	25.5	1.1	5.2	3.5	0.0	2.3	5.2
25-26	*1100*	23.9	10.8	21.2	1.7	3.2	2.1	0.5	1.8	3.7
27-28	*1200*	22.0	8.9	19.9	0.9	2.0	1.0	0.0	2.3	3.9
29-30	*1000*	19.6	7.8	16.9	0.1	1.4	1.0	0.0	0.0	3.7
31-32	*1000*	19.3	9.6	15.8	0.8	0.9	0.7	0.5	0.9	4.4
Region:										
Northeast	*1500*	31.0	12.7	29.0	2.7	5.2	3.4	0.5	2.6	5.9
Northcentral	*2300*	25.7	10.1	23.5	1.5	3.0	2.0	0.4	0.9	3.8
South	*2700*	25.6	12.2	22.4	1.6	3.9	3.0	0.2	2.3	4.7
West	*1700*	29.2	14.3	26.4	1.2	5.2	3.0	0.7	3.3	5.1
Population Density[f]:										
Farm/Country	*1000*	20.3	10.8	17.1	1.7	2.9	2.3	0.6	0.7	3.2
Small Town	*2300*	26.3	11.5	23.8	1.5	3.8	2.8	0.2	1.4	4.4
Medium City	*1800*	28.8	12.1	26.7	1.5	4.2	3.0	0.5	2.3	4.9
Large City	*1800*	28.6	12.5	26.1	1.7	5.0	3.2	1.1	2.8	5.1
Very Large City	*1300*	29.8	13.0	26.9	2.4	4.1	2.2	0.0	3.7	5.1

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

"*" indicates a percentage of less than 0.05% but greater than true zero.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]Unadjusted for known underreporting of certain drugs. See text for details.
[c]This drug was asked about in five of the six questionnaire forms. Total N is approximately 6800.
[d]This drug was asked about in one of the six questionnaire forms. Total N is approximately 1400.
[e]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[f]A small town is defined as having less 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 residents. Within each level of population density, suburban and urban respondents are combined.

(Table continued on next page)

TABLE 4-3 (cont.)

Annual Prevalence of Use of Various Types of Drugs by Subgroups, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

	Crack	Heroin	Other Narcotics[a]	Amphetamines[b]	Barbiturates[a]	"Ice"[b,c]	Tranquilizers[a]	Steroids[c]	Alcohol	Cigarettes
Total	1.0	0.4	3.0	3.9	2.2	1.0	3.6	0.4	83.9	38.3
Gender:										
Male	1.5	0.5	3.7	4.1	2.6	1.3	4.1	0.8	84.6	39.4
Female	0.6	0.3	2.5	3.8	1.8	0.8	3.3	0.0	83.4	37.4
Modal Age:										
19-20	1.3	1.1	4.3	7.5	3.8	2.0	4.2	0.8	79.7	47.4
21-22	1.4	0.4	4.3	5.0	3.1	1.1	4.5	0.2	86.3	46.1
23-24	1.2	0.2	3.5	4.3	2.4	1.4	3.7	0.2	84.9	41.6
25-26	0.4	0.3	3.0	2.9	1.7	0.6	3.6	0.3	83.8	37.7
27-28	0.8	0.1	1.9	2.3	1.5	0.0	2.9	0.4	85.3	33.7
29-30	0.7	0.1	1.5	1.8	1.0	0.0	2.4	0.0	84.2	29.5
31-32	0.9	0.1	2.0	2.6	1.0	1.2	3.8	0.5	83.2	27.5
Region:										
Northeast	1.0	0.3	3.2	3.4	2.2	0.4	3.9	0.7	88.4	40.4
Northcentral	1.0	0.2	2.9	3.4	2.0	0.7	2.5	0.3	88.0	40.5
South	0.9	0.6	2.9	4.3	2.6	1.2	4.4	0.5	79.0	37.7
West	1.2	0.3	3.2	4.8	1.6	2.0	3.9	0.0	82.5	34.3
Population Density[d]:										
Farm/Country	0.9	0.3	2.8	4.5	2.7	2.0	3.4	0.0	76.1	38.5
Small Town	0.8	0.1	2.7	3.6	1.5	1.1	3.3	0.9	83.4	40.6
Medium City	1.0	0.5	3.2	4.1	2.3	1.1	3.3	0.0	84.6	38.3
Large City	1.3	0.6	3.2	4.0	2.8	0.7	3.7	0.2	85.7	35.8
Very Large City	0.9	0.4	3.1	3.7	1.6	0.4	4.3	0.5	87.3	37.3

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

'*' indicates a prevalence rate of less than 0.05% but greater than true zero.

[a]Only drug use which was not under a doctor's orders is included here.
[b]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.
[c]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[d]A small town is defined as having less 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 residents. 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, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Any Illicit Drug[a]	Any Illicit Drug[a] Other than Marijuana	Marijuana	Inhalants[b,c]	Hallucinogens[b]	LSD	PCP[d]	MDMA[e]	Cocaine
Total	*8200*	14.6	5.0	13.4	0.6	1.1	0.8	0.2	0.6	1.7
Gender:										
Male	*3500*	18.5	6.6	17.0	0.8	1.7	1.2	0.0	0.6	2.4
Female	*4700*	11.8	3.8	10.7	0.4	0.6	0.4	0.3	0.5	1.1
Modal Age:										
19-20	*1300*	22.1	8.2	20.1	1.1	2.6	1.8	0.0	1.1	2.3
21-22	*1300*	18.5	6.0	17.5	0.8	1.7	1.2	1.1	1.0	1.8
23-24	*1300*	14.3	4.8	13.8	0.5	1.2	0.8	0.0	0.7	1.6
25-26	*1100*	13.2	4.8	11.8	0.9	1.1	0.7	0.0	0.7	1.1
27-28	*1200*	11.8	3.6	10.5	0.2	0.3	0.3	0.0	0.2	1.6
29-30	*1000*	10.3	3.3	9.0	0.0	0.2	0.1	0.0	0.0	1.3
31-32	*1000*	10.0	3.6	8.7	0.3	0.1	0.1	0.0	0.1	1.8
Region:										
Northeast	*1500*	16.8	5.9	15.5	0.7	1.3	0.9	0.4	0.8	2.6
Northcentral	*2300*	13.2	3.7	12.7	0.5	0.8	0.5	0.0	0.1	1.2
South	*2700*	13.3	5.2	11.7	0.6	1.2	0.9	0.0	0.9	1.7
West	*1700*	17.2	5.9	15.6	0.5	1.2	0.7	0.0	0.2	1.6
Population Density[f]:										
Farm/Country	*1000*	11.1	4.9	9.6	1.0	1.2	1.1	0.0	0.3	1.0
Small Town	*2300*	13.5	4.9	12.2	0.4	1.0	0.6	0.0	0.2	1.9
Medium City	*1800*	15.5	5.1	14.7	0.4	1.1	0.9	0.4	0.7	1.6
Large City	*1800*	15.6	5.3	14.4	0.7	1.5	1.0	0.3	0.8	1.6
Very Large City	*1300*	16.1	4.6	14.7	0.6	0.6	0.2	0.0	0.7	1.9

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

'*' indicates a prevalence rate of less than 0.05% but greater than true zero.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]Unadjusted for known underreporting of certain drugs. See text for details.
[c]This drug was asked about in five of the six questionnaire forms. Total N is approximately 6800.
[d]This drug was asked about in one of the six questionnaire forms. Total N is approximately 1400.
[e]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[f]A small town is defined as having less 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 residents. Within each level of population density, suburban and urban respondents are combined.

(Table continued on next page)

TABLE 4-4 (cont.)

Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

	Crack	Heroin	Other Narcotics[a]	Amphetamines[b]	Barbiturates[a]	"Ice"[c]	Tranquilizers[a]	Steroids[c]	Alcohol	Cigarettes
Total	0.3	0.1	0.8	1.4	0.8	0.2	1.1	0.2	66.6	28.9
Gender:										
Male	0.4	0.1	1.2	1.6	1.0	0.2	1.6	0.4	72.8	30.5
Female	0.2	0.1	0.6	1.3	0.6	0.2	0.8	0.0	62.0	27.7
Modal Age:										
19-20	0.3	0.2	1.0	3.1	1.5	0.5	1.2	0.0	59.7	33.9
21-22	0.3	0.2	1.4	1.6	1.1	0.1	1.5	0.2	69.4	33.7
23-24	0.4	*	0.7	1.8	0.5	0.4	0.8	0.0	70.3	30.9
25-26	0.2	0.0	0.8	1.0	0.9	0.1	1.7	0.3	66.3	29.9
27-28	0.1	0.0	0.5	0.7	0.4	0.0	1.0	0.4	68.7	25.6
29-30	0.1	0.0	0.7	0.6	0.4	0.0	0.9	0.0	66.1	23.1
31-32	0.4	*	0.7	0.9	0.5	0.0	0.9	0.5	65.2	22.5
Region:										
Northeast	0.4	0.1	1.0	1.3	1.2	0.0	1.3	0.7	71.6	30.5
Northcentral	0.2	0.0	0.7	0.8	0.6	0.1	0.6	0.2	70.5	32.4
South	0.3	0.1	0.7	1.6	0.7	0.4	1.5	0.0	60.9	28.4
West	0.3	*	1.0	2.2	0.7	0.3	1.1	0.0	66.0	23.5
Population Density[d]:										
Farm/Country	0.3	0.2	0.7	1.6	1.1	0.1	1.4	0.0	56.3	30.9
Small Town	0.1	*	0.8	1.3	0.6	0.2	0.9	0.3	64.5	32.1
Medium City	0.3	0.1	0.8	1.7	0.7	0.4	1.2	0.0	67.3	27.8
Large City	0.3	0.1	0.9	1.8	1.1	0.2	1.4	0.0	69.2	26.0
Very Large City	0.3	*	0.9	0.9	0.5	0.1	0.9	0.5	73.7	27.2

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

'*' indicates a prevalence rate of less than 0.05% but greater than true zero.

[a]Only drug use which was *not under a doctor's orders* is included here.
[b]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.
[c]This drug was asked about in two of the six questionnaire forms. Total N is approximately 2700.
[d]A small town is defined as having less 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 residents. Within each level of population density, suburban and urban respondents are combined.

TABLE 4-5

Thirty-Day Prevalence of Daily Use of Various Types of Drugs by Subgroups, 1998 Among Respondents of Modal Age 19-32

(Entries are percentages)

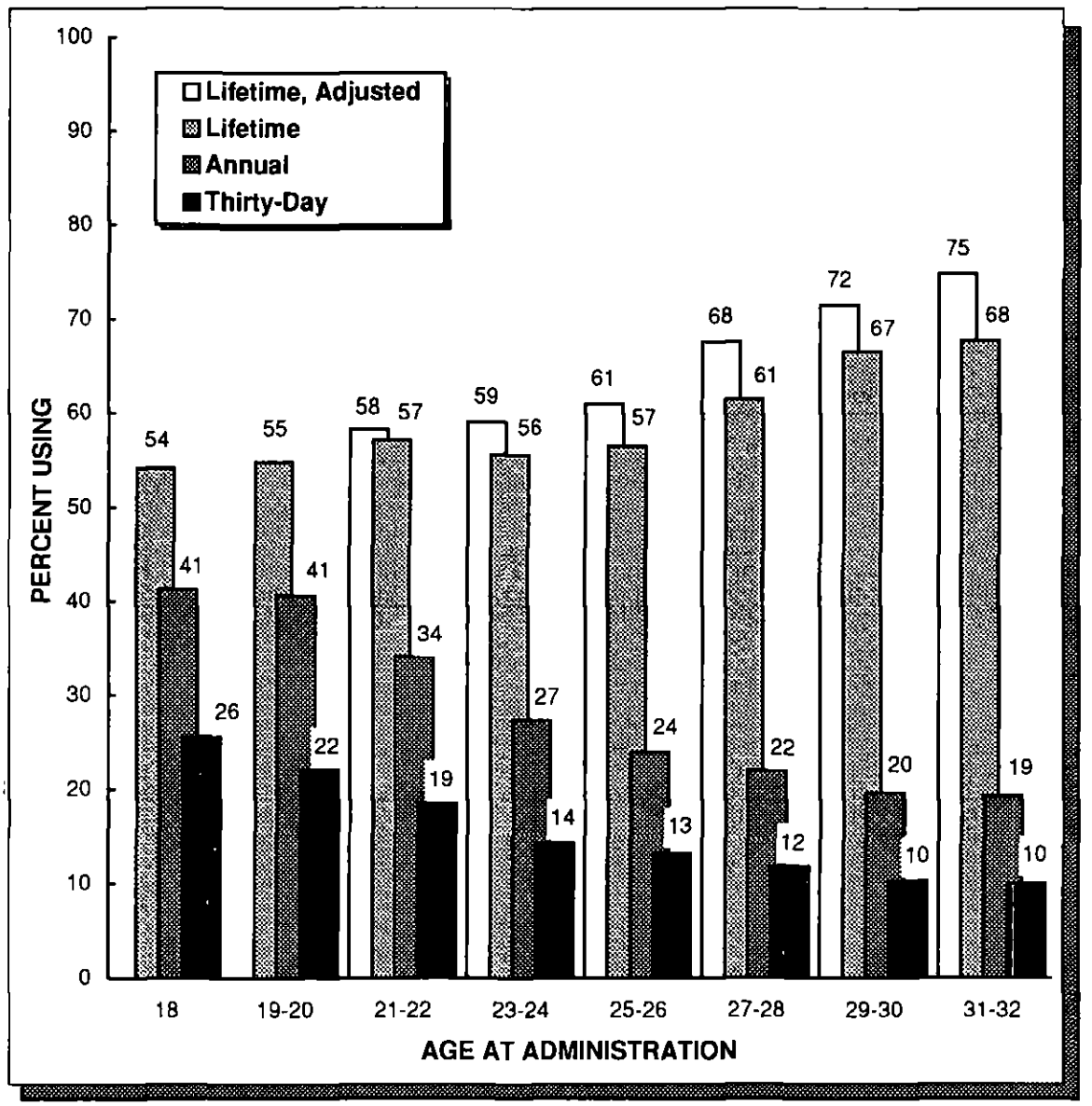
	Approx. Weighted N	Marijuana Daily	Alcohol Daily	Alcohol: 5+ drinks in a row in past 2 weeks	Cigarettes Daily	Cigarettes: Half-pack or more per day
Total	*8200*	3.4	4.0	31.8	20.8	15.0
Gender:						
Male	*3500*	5.2	6.8	43.9	21.6	16.8
Female	*4700*	2.1	1.9	22.9	20.2	13.6
Modal Age:						
19-20	*1300*	5.2	3.6	34.5	23.8	16.9
21-22	*1300*	5.2	5.7	39.7	22.8	16.2
23-24	*1300*	3.1	3.9	35.3	21.2	14.5
25-26	*1100*	2.4	3.4	31.3	21.9	15.5
27-28	*1200*	2.3	3.1	28.9	19.5	14.8
29-30	*1000*	2.4	3.4	26.6	17.2	12.2
31-32	*1000*	2.8	4.8	22.8	17.9	14.3
Region:						
Northeast	*1500*	4.2	3.7	33.9	22.7	16.8
Northcentral	*2300*	3.1	4.0	35.5	24.3	18.2
South	*2700*	2.9	4.2	28.7	19.9	14.4
West	*1700*	4.0	3.9	30.1	16.0	9.9
Population Density*:						
Farm/Country	*1000*	2.9	4.8	25.8	24.3	19.1
Small Town	*2300*	3.8	3.8	31.7	24.2	18.1
Medium City	*1800*	3.4	4.3	33.0	20.0	14.4
Large City	*1800*	3.5	3.8	32.0	18.2	12.3
Very Large City	*1300*	3.1	3.7	34.3	16.6	10.9

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

*A small town is defined as having less 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 residents. Within each level of population density, suburban and urban respondents are combined.

Figure 4-1

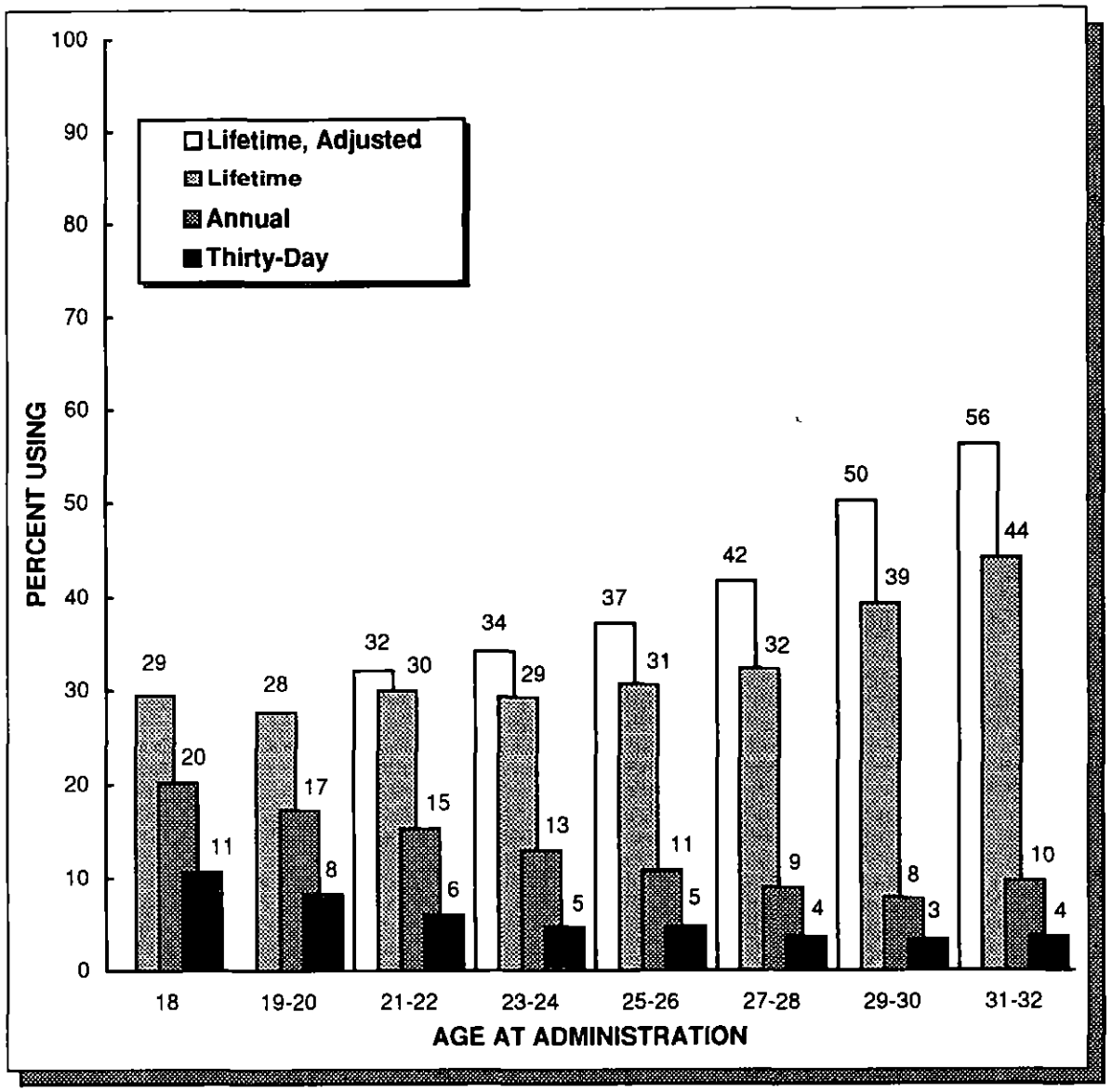
Any Illicit Drug: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-2

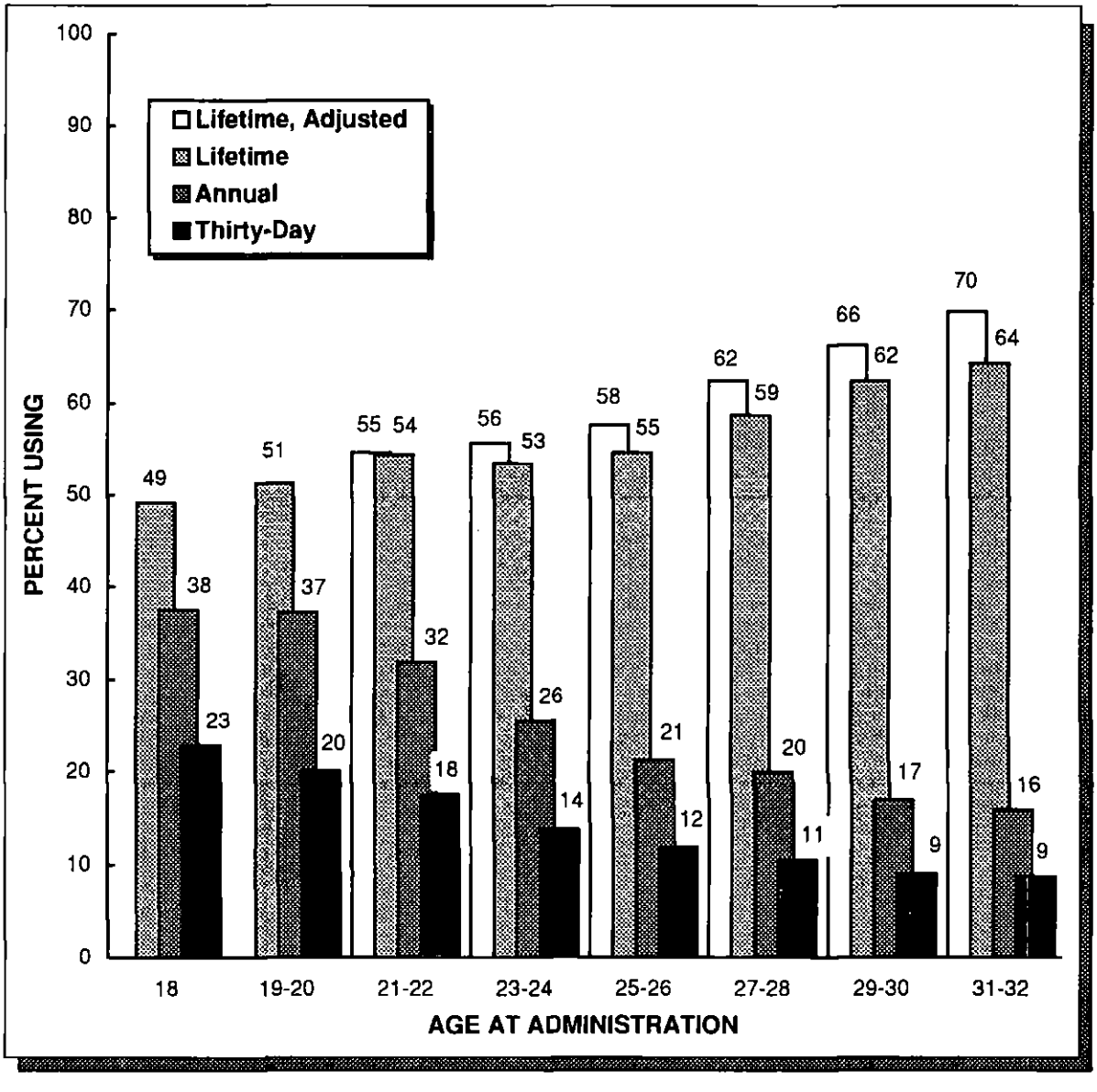
Any Illicit Drug Other than Marijuana: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-3

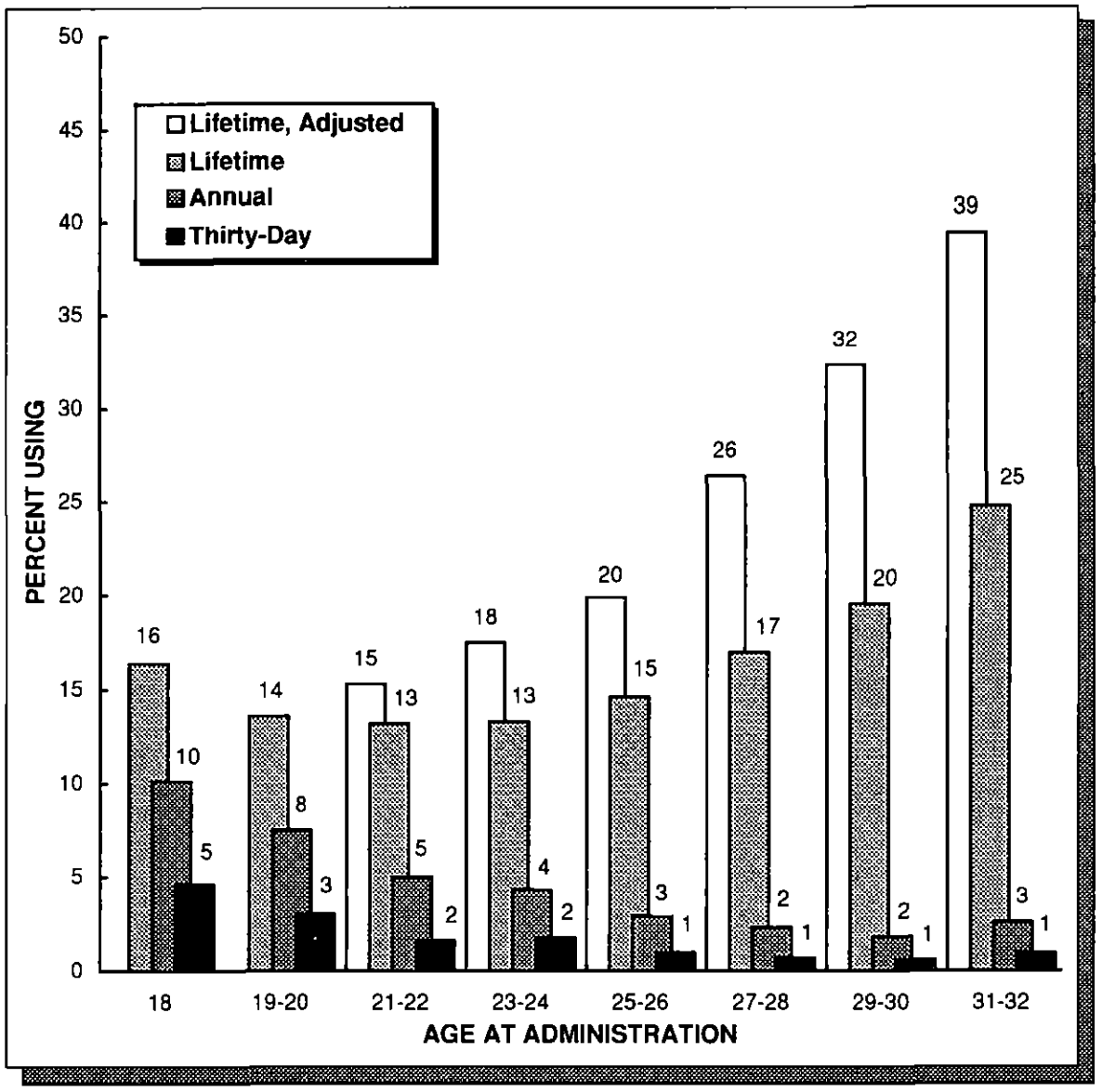
Marijuana: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-4

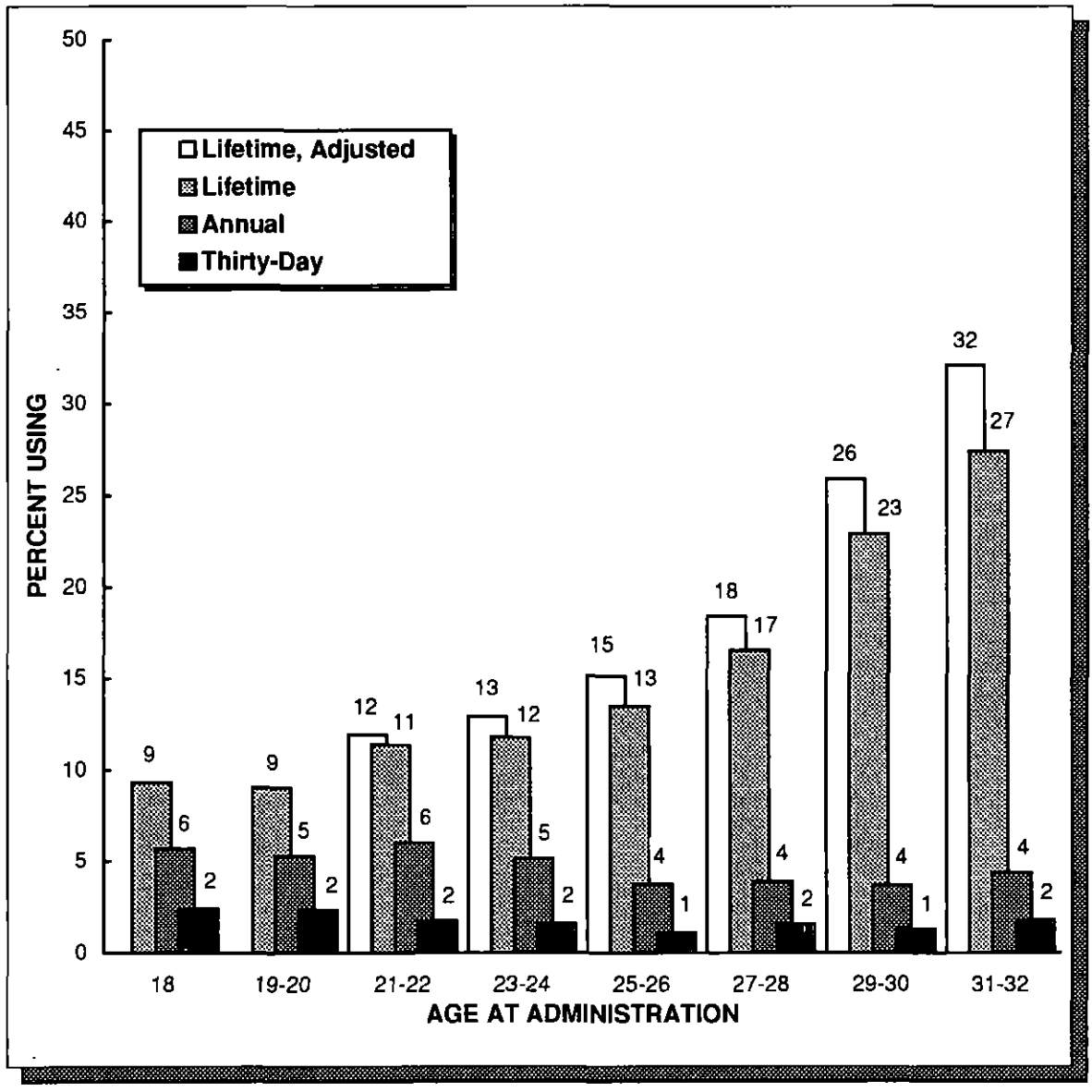
Amphetamines: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



NOTE: Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion. The divergence between the two lifetime prevalence estimates is due in part to the change in question wording initiated in 1982/1983, which clarified the instruction to omit non-prescription stimulants.

Figure 4-5

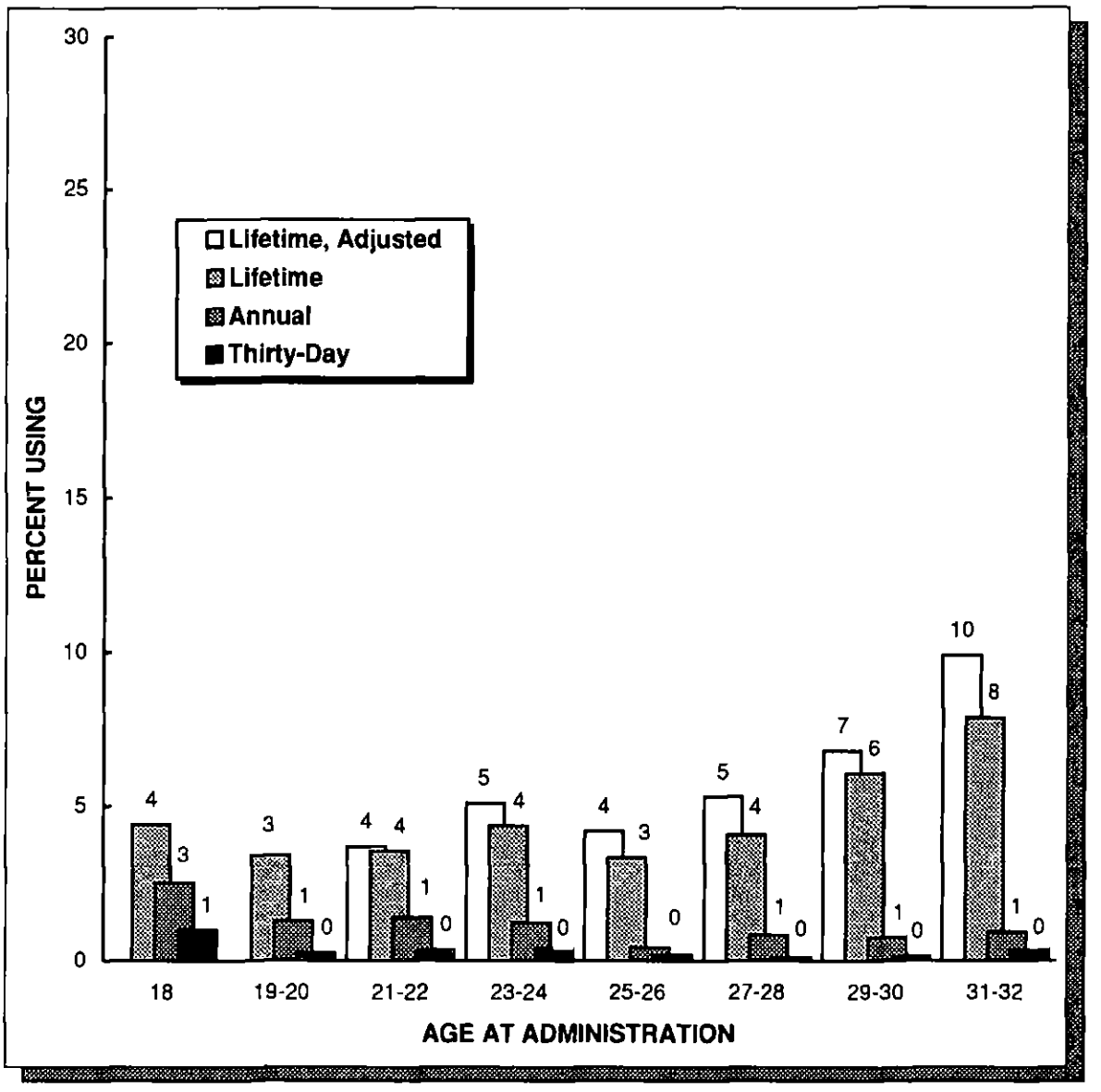
Cocaine: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-6

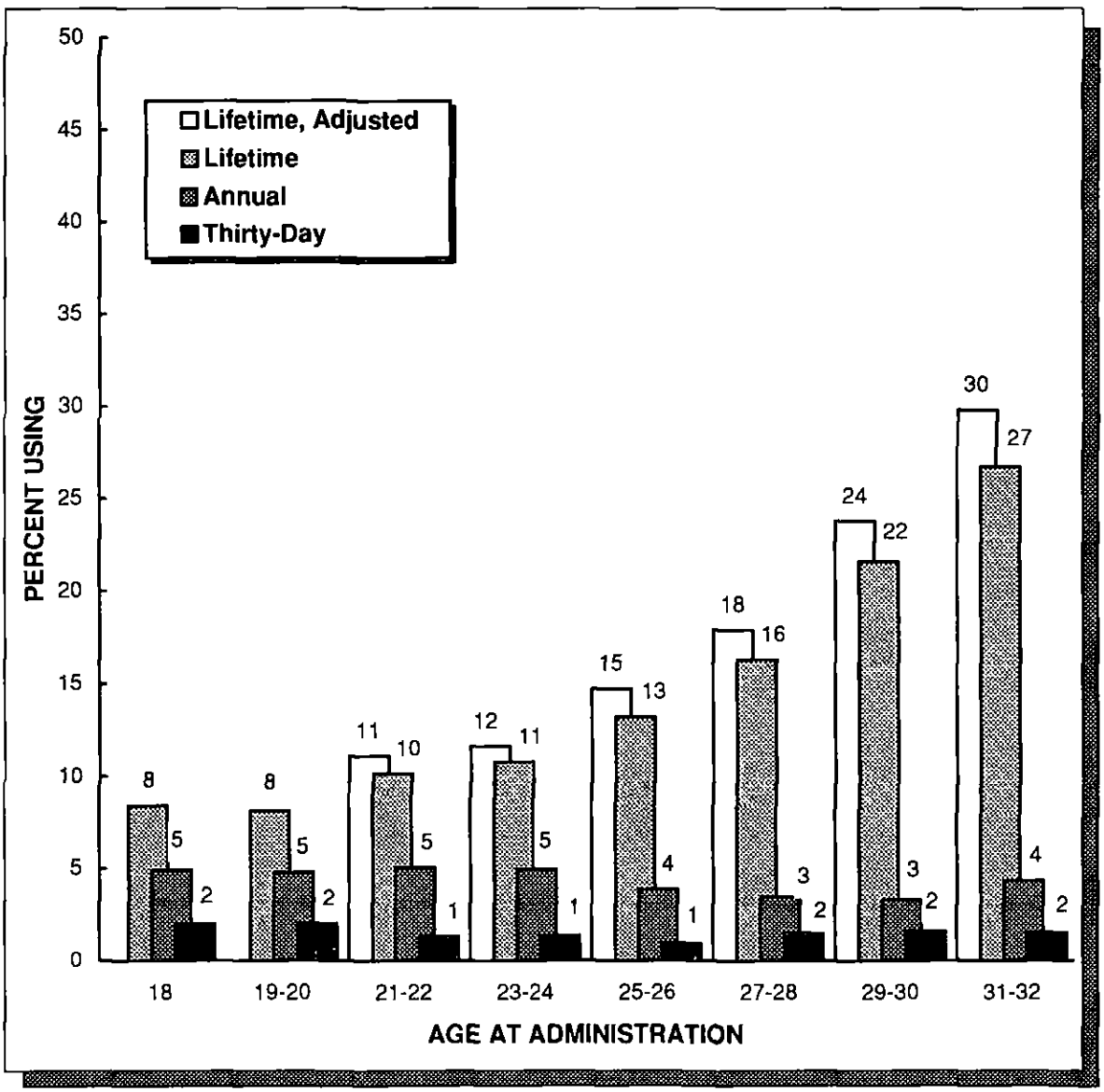
Crack Cocaine: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-7

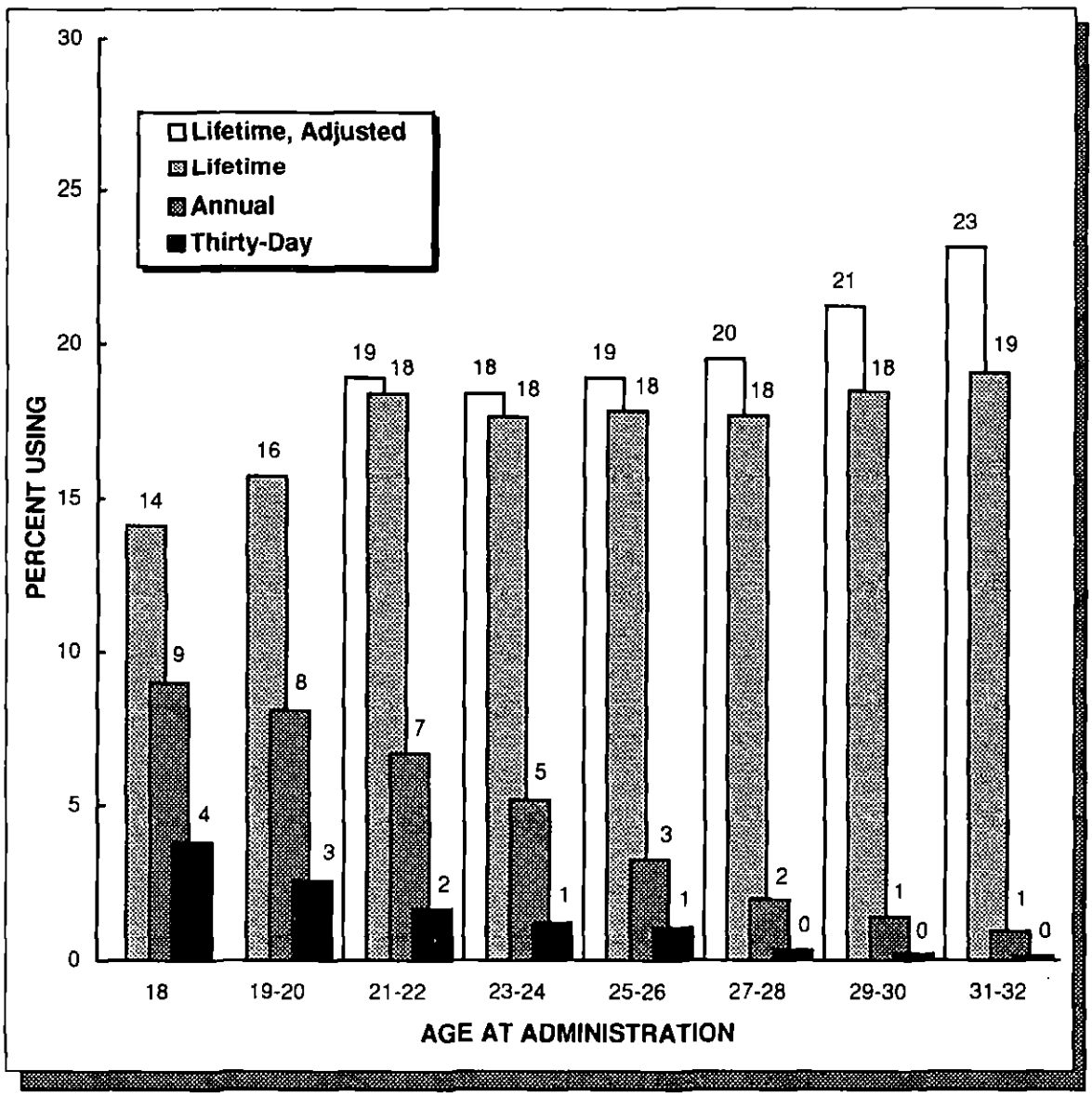
Other Cocaine: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-8

Hallucinogens*: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group

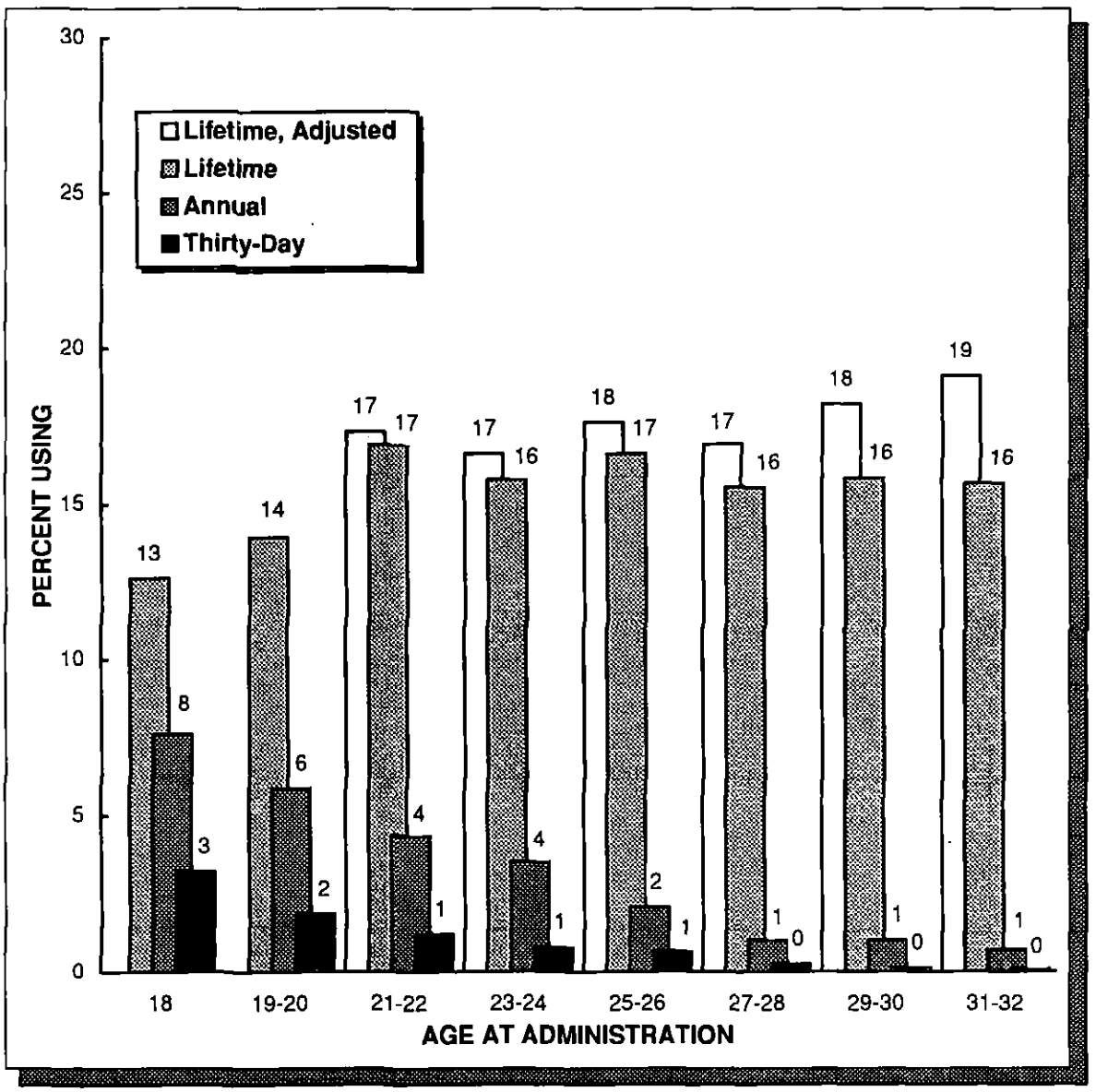


*Unadjusted for the possible underreporting of PCP.

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

Figure 4-9

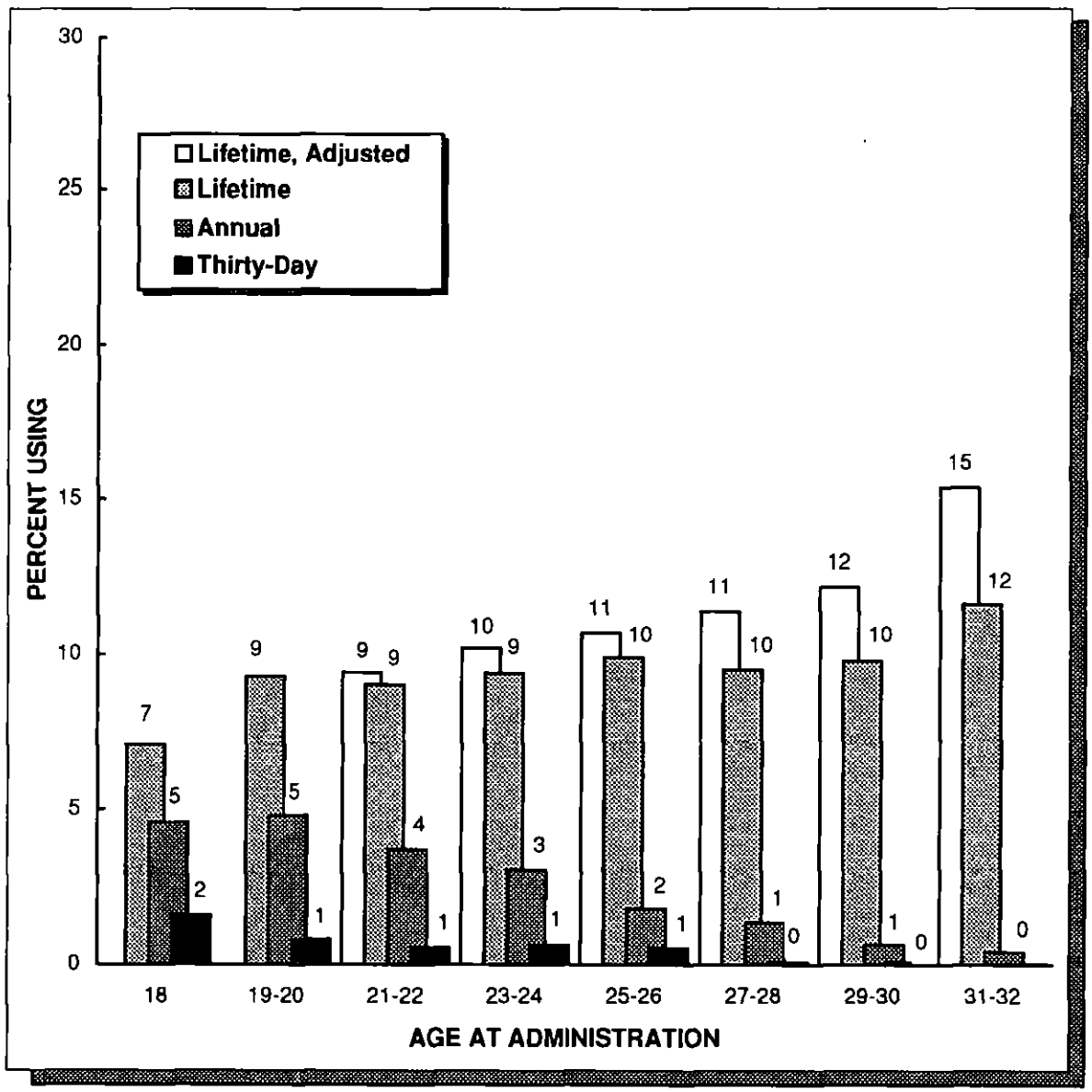
LSD: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-10

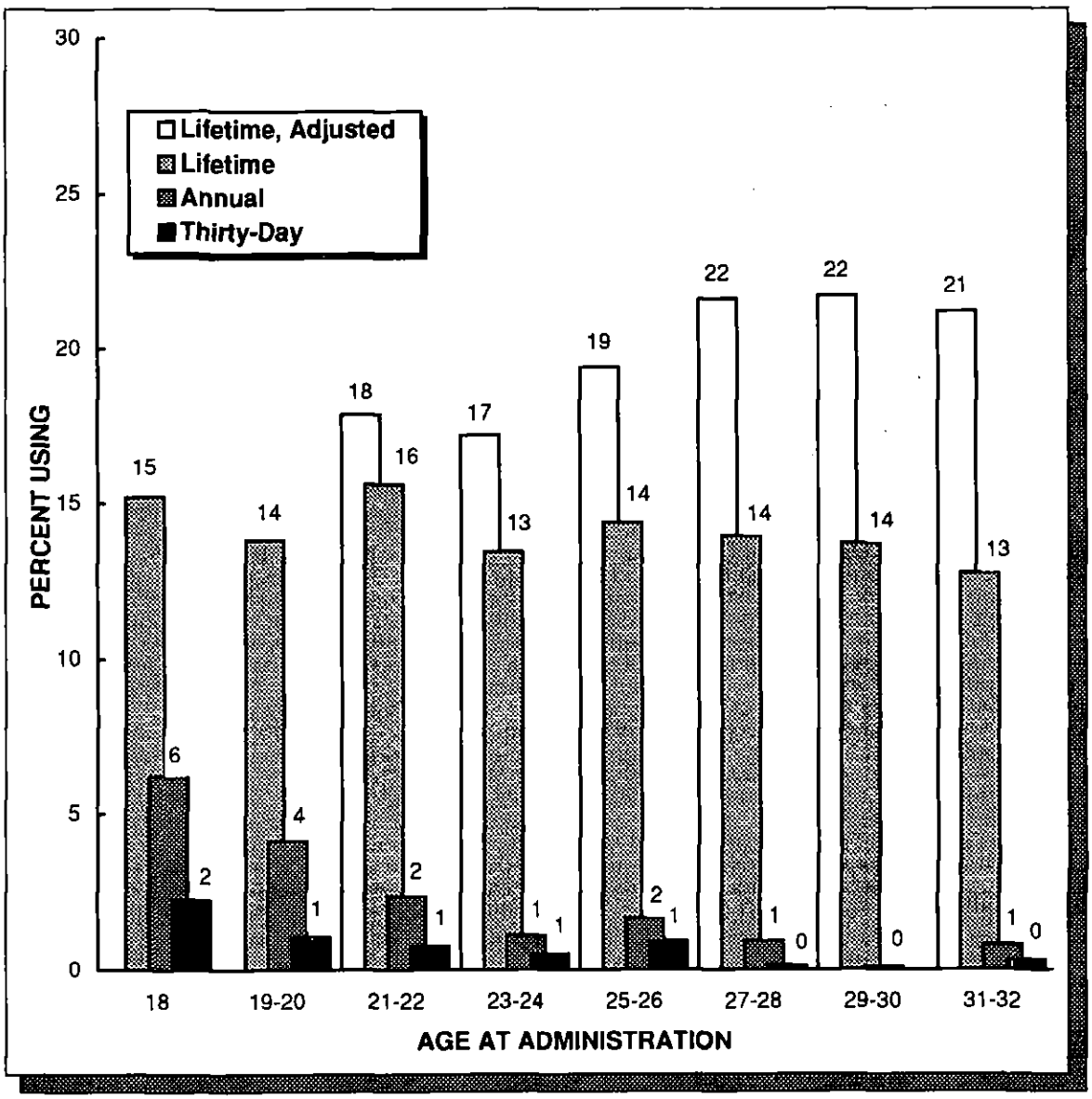
Hallucinogens Other than LSD: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-11

Inhalants*: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group

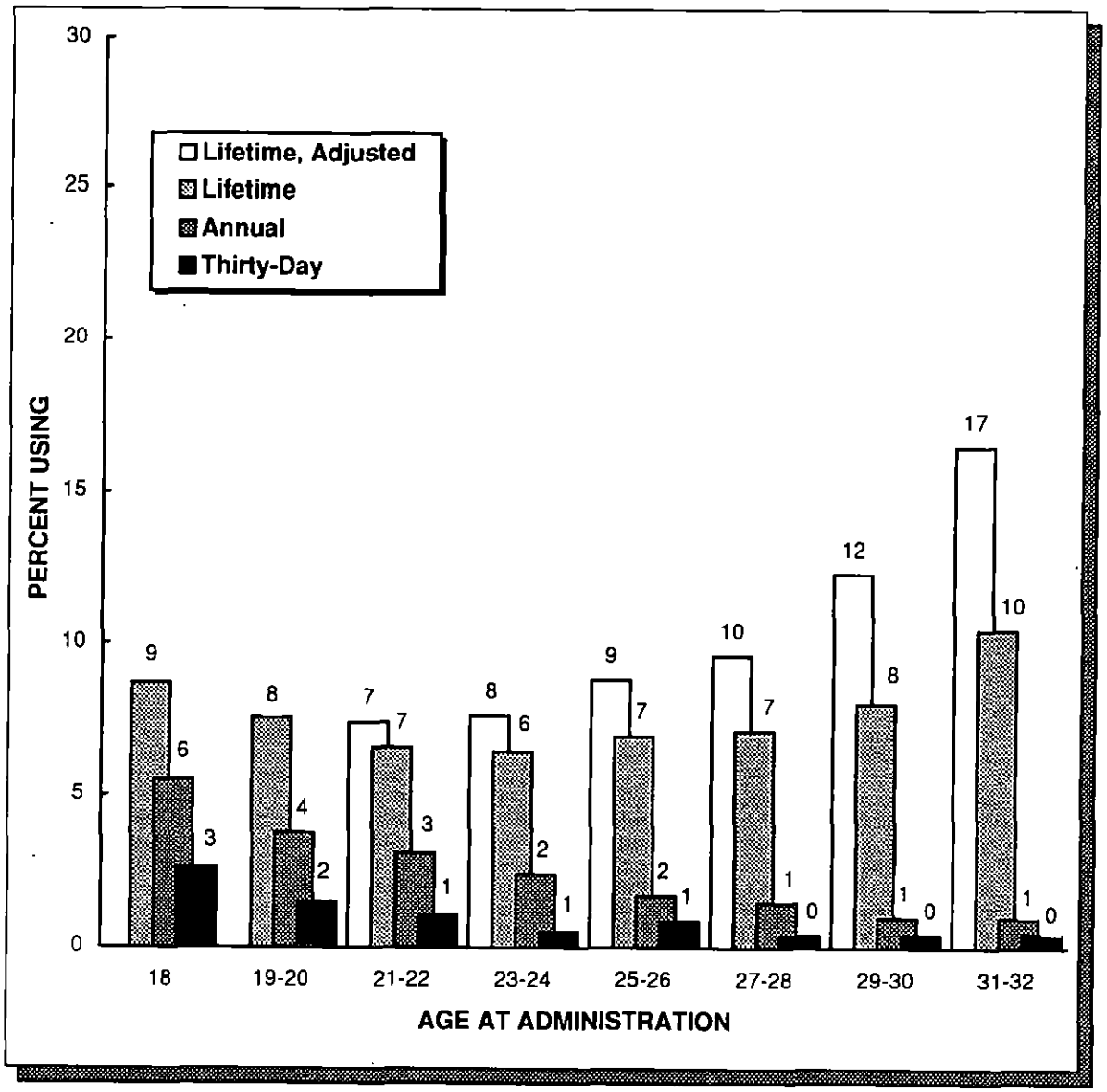


*Unadjusted for the possible underreporting of amyl and butyl nitrites.

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

Figure 4-12

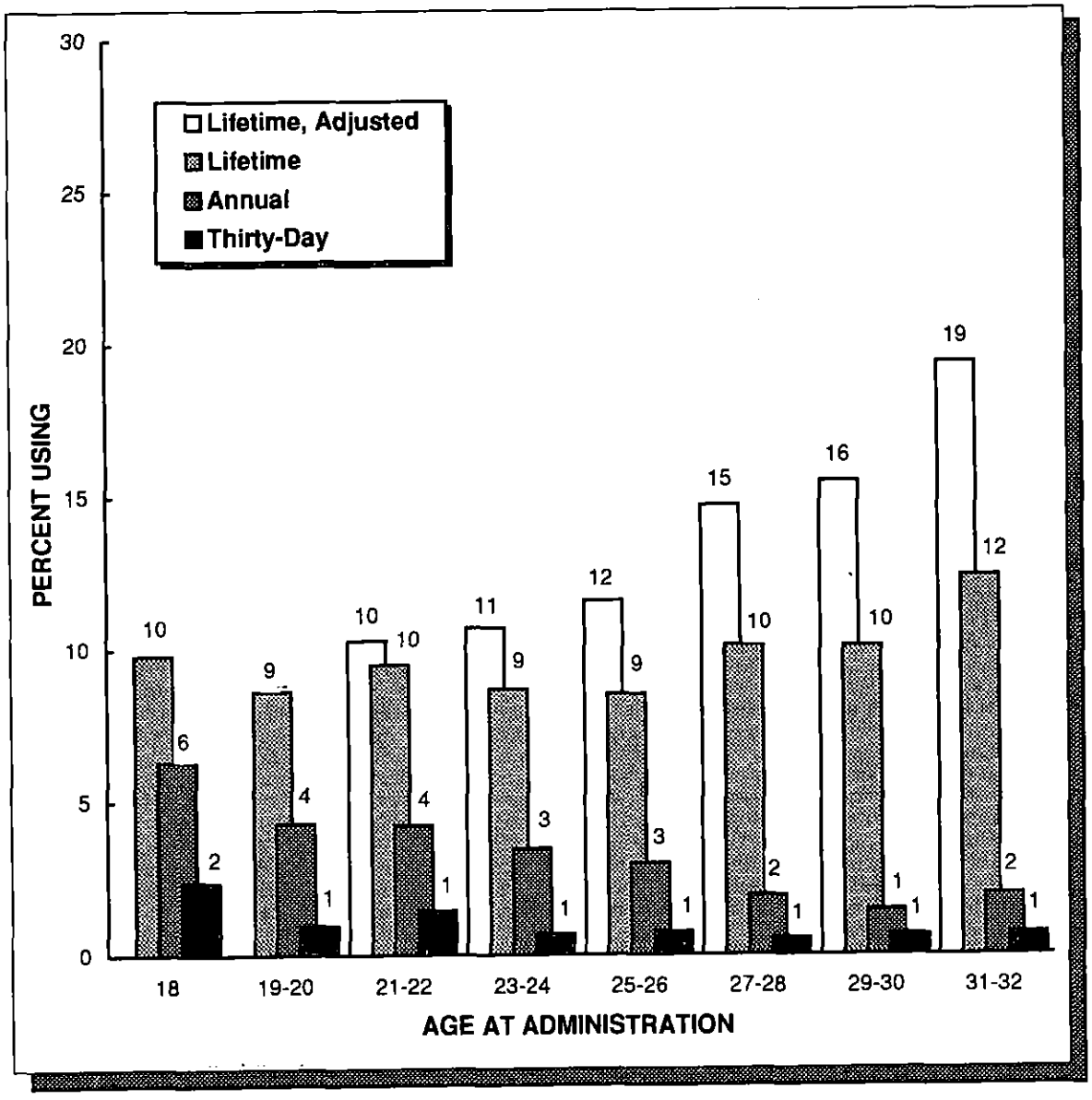
Barbiturates: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-13

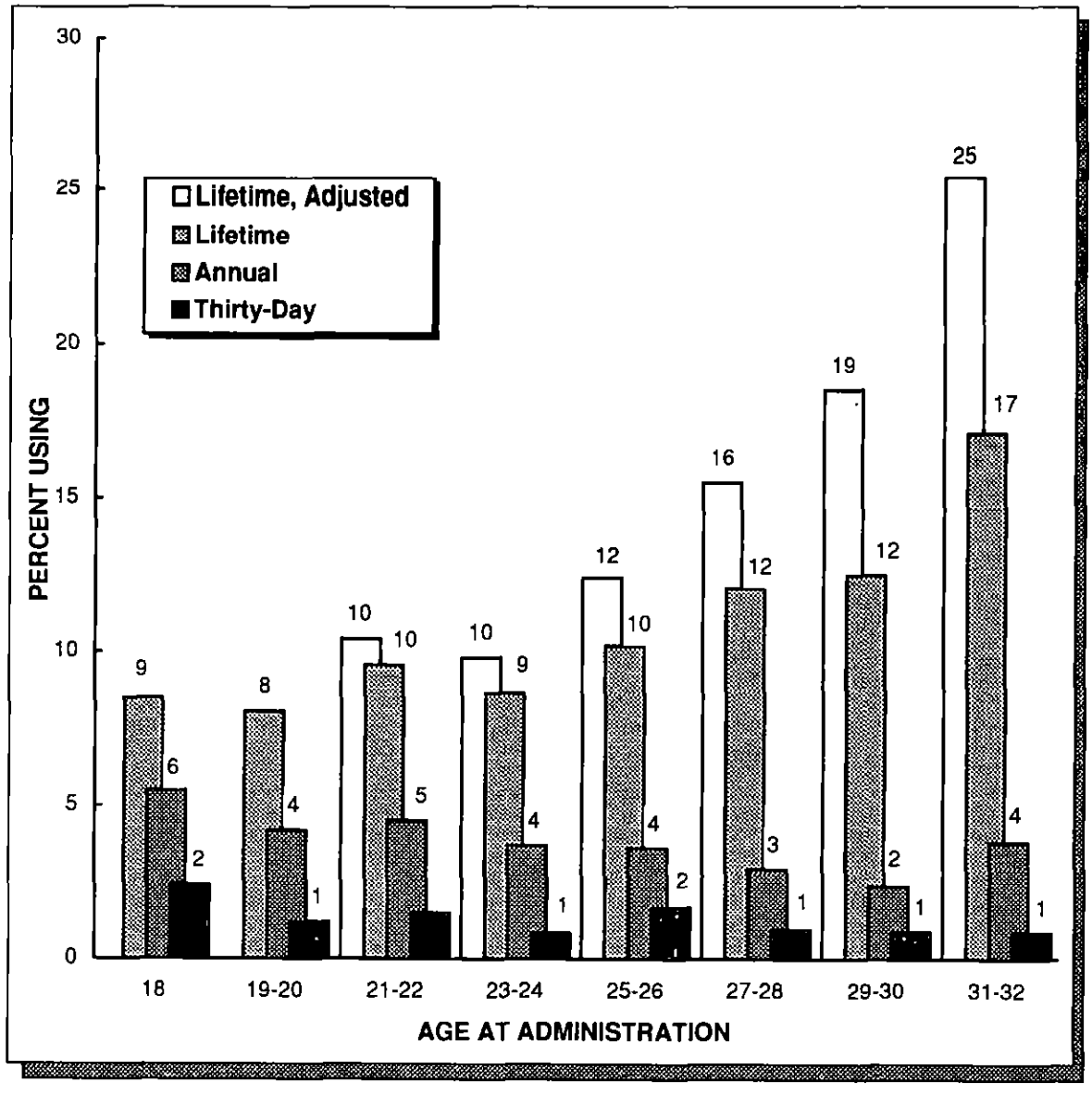
Narcotics Other Than Heroin: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-14

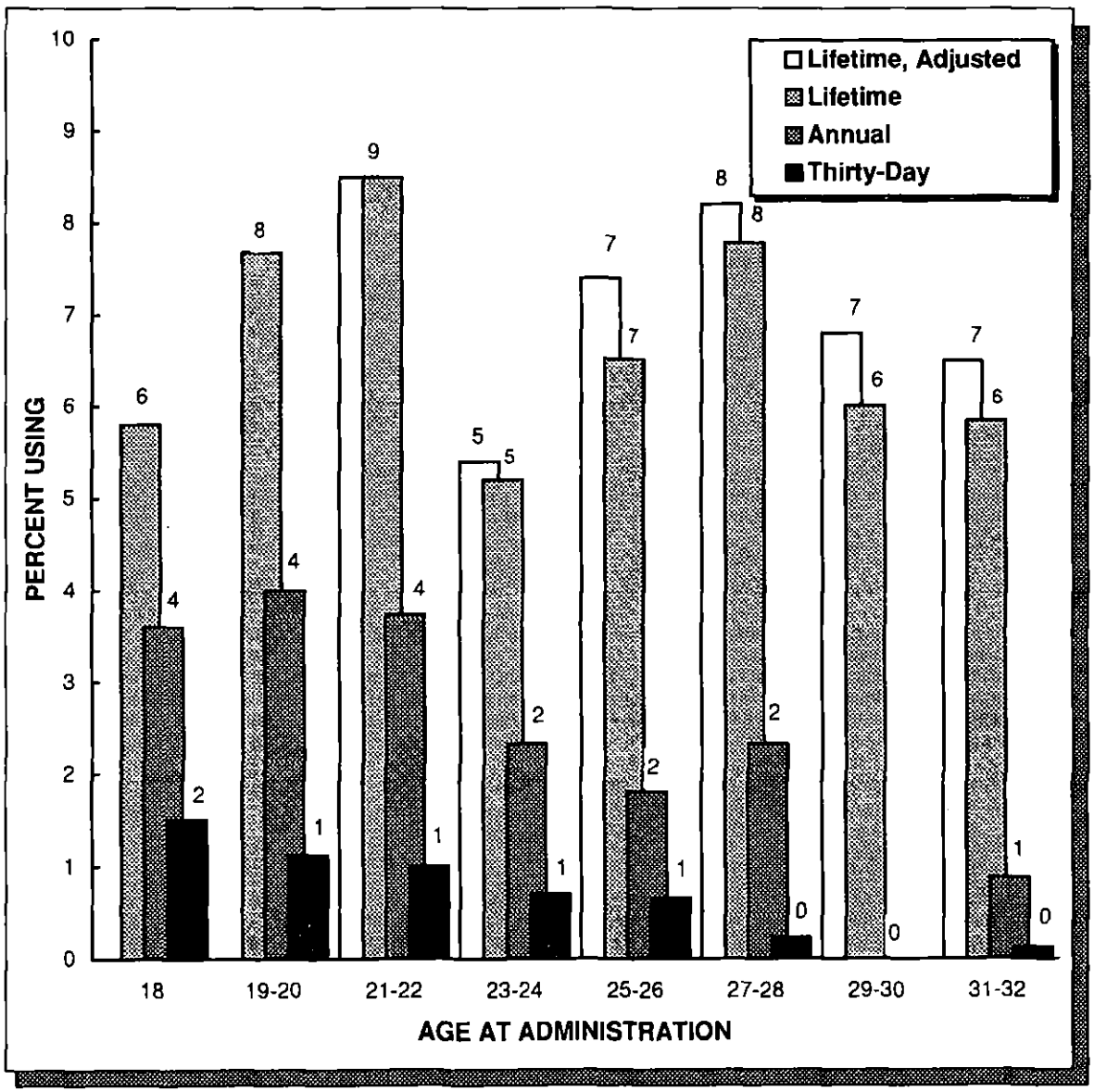
Tranquilizers: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-15

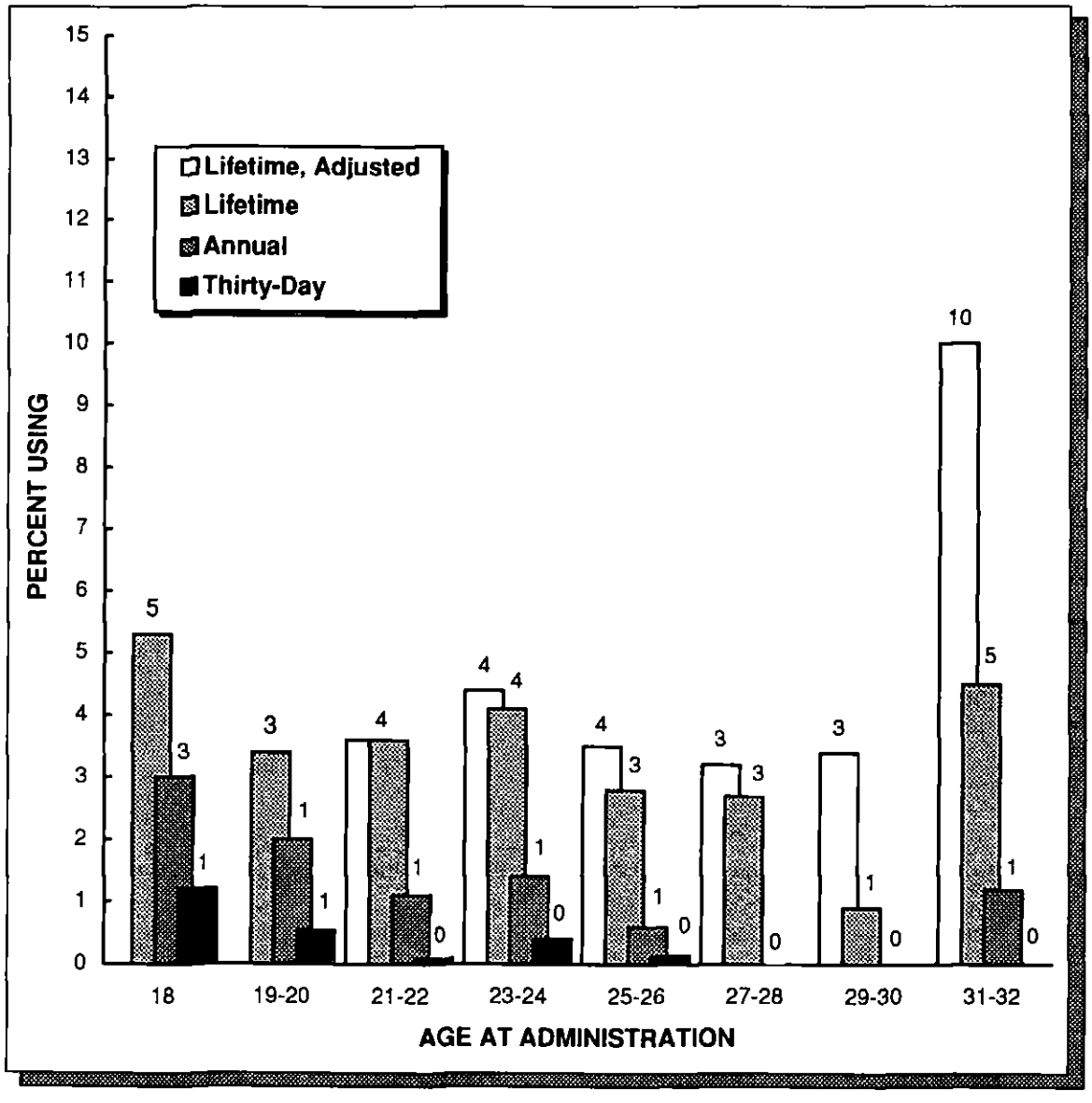
MDMA: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



NOTE: Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion. High school seniors were not asked about their use of this drug.

Figure 4-16

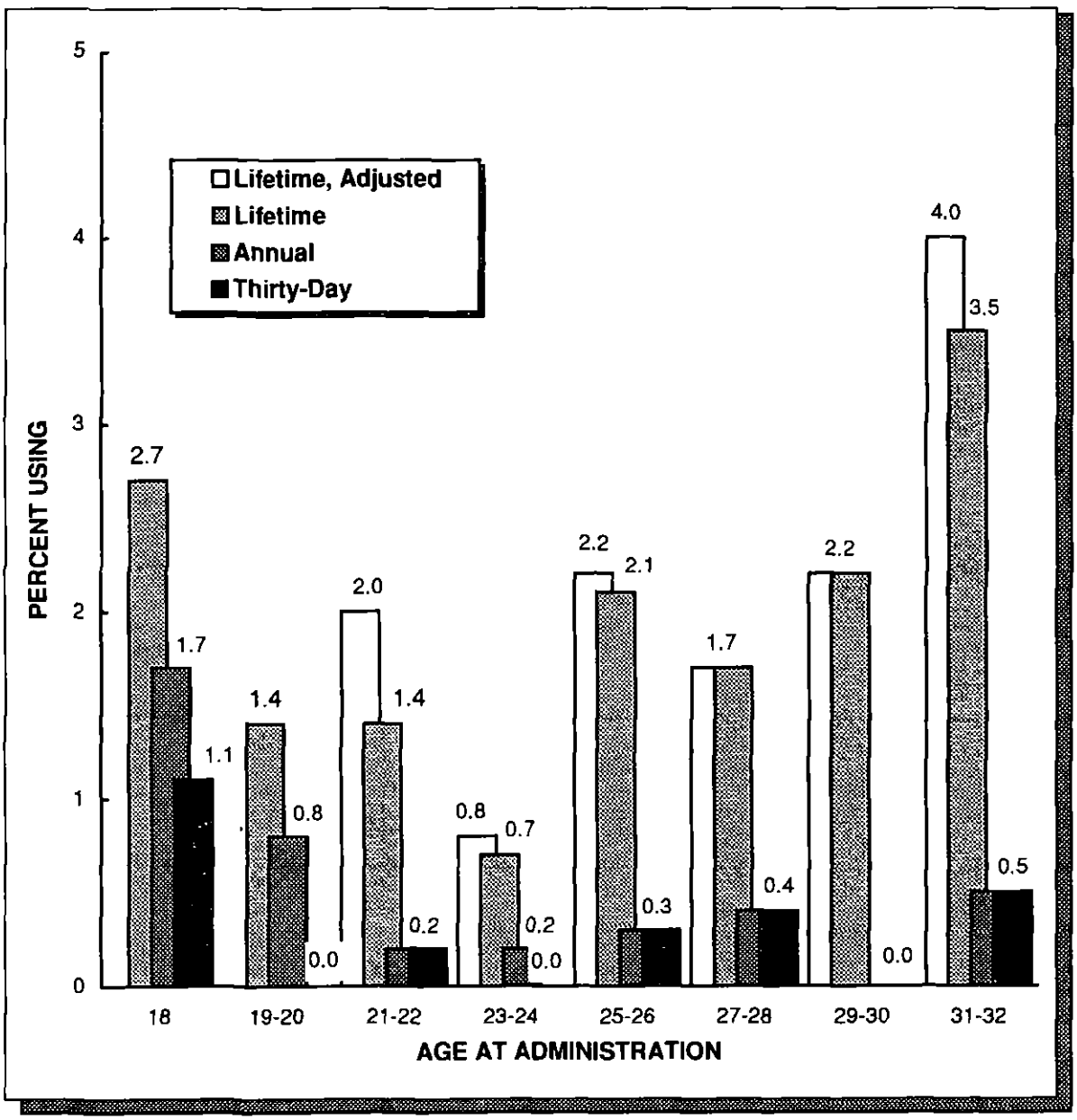
Crystal Methamphetamine ("Ice"): Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



NOTE: Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for details.

Figure 4-17

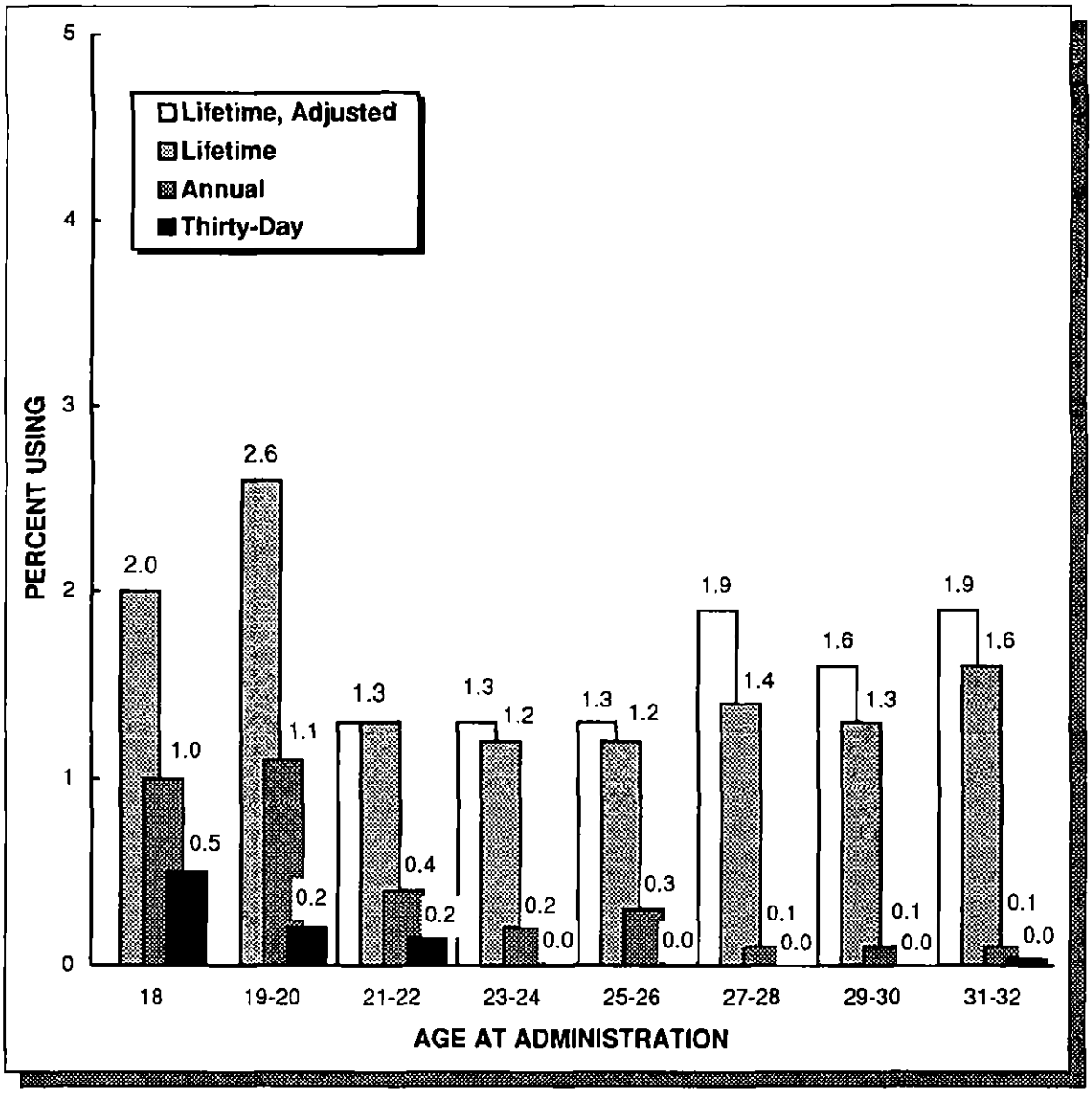
Steroids: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



NOTE: Lifetime prevalence extimates were adjusted for inconsistency in self-reports of drug use over time. See text for details.

Figure 4-18

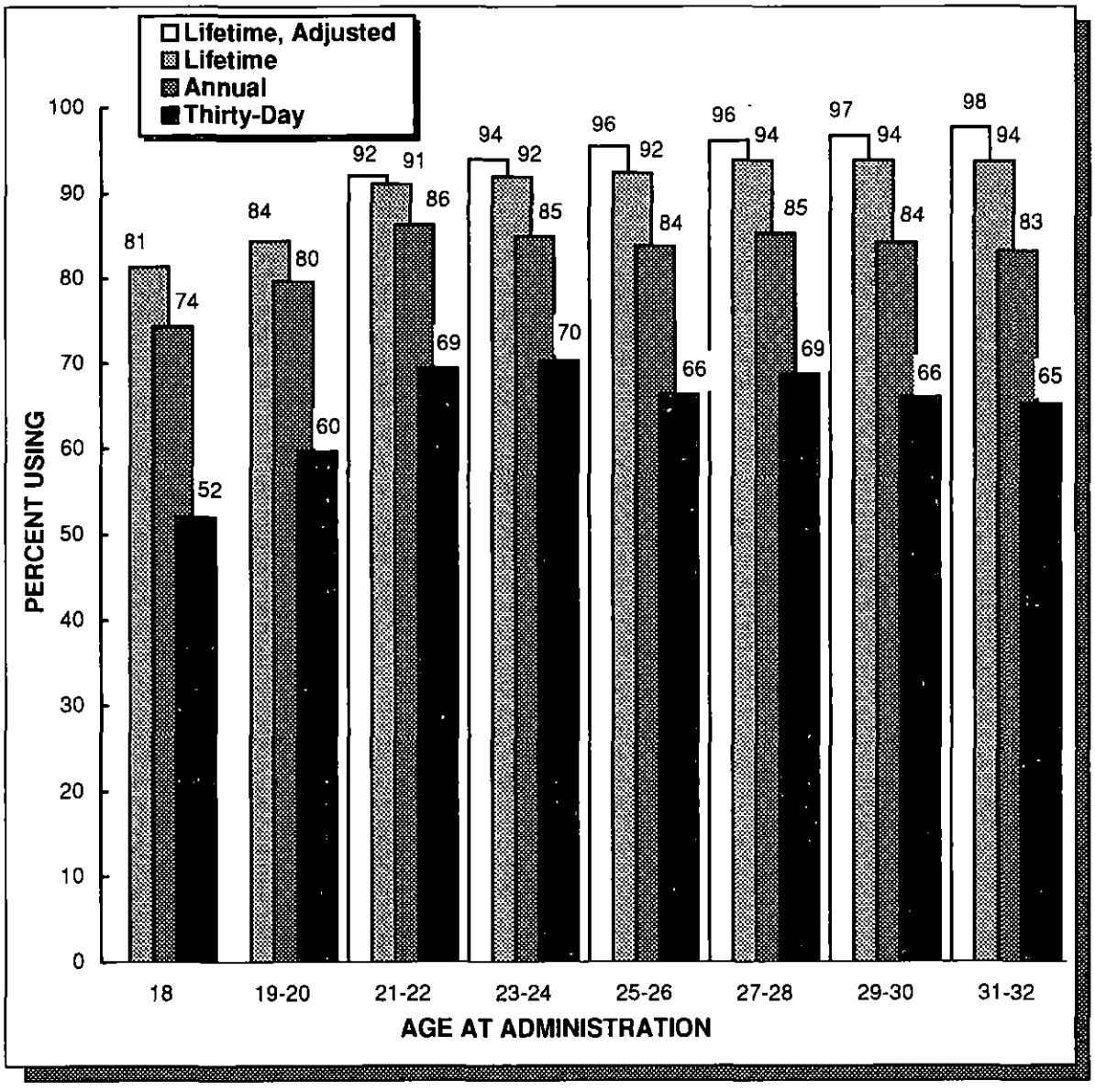
Heroin: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-19a

Alcohol: Lifetime, Annual, and Thirty-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



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

Figure 4-19b

Alcohol: Two-Week Prevalence of Five or More Drinks in a Row and Thirty-Day Prevalence of Daily Use Among High School Seniors and Young Adults, 1998
by Age Group

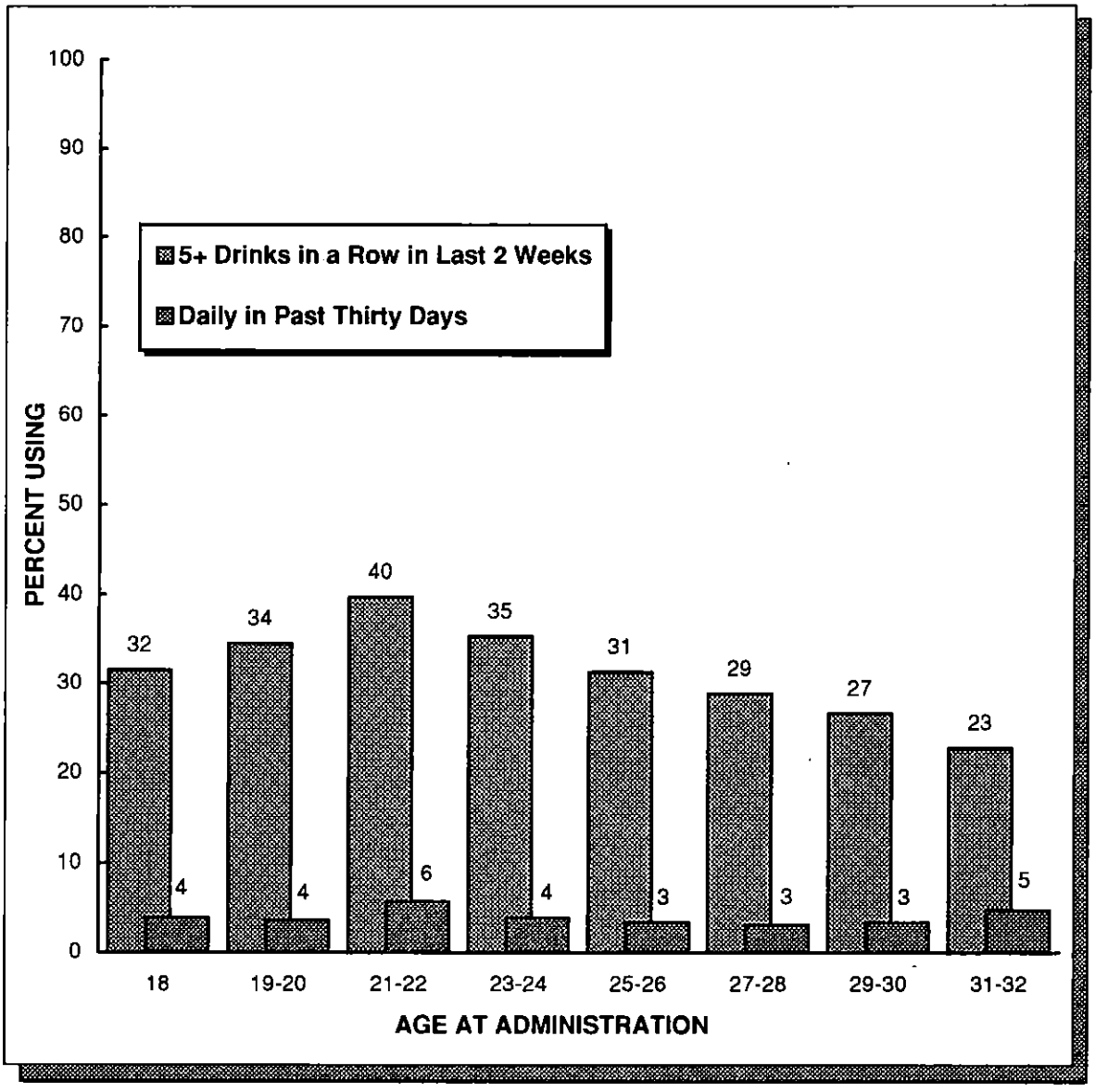
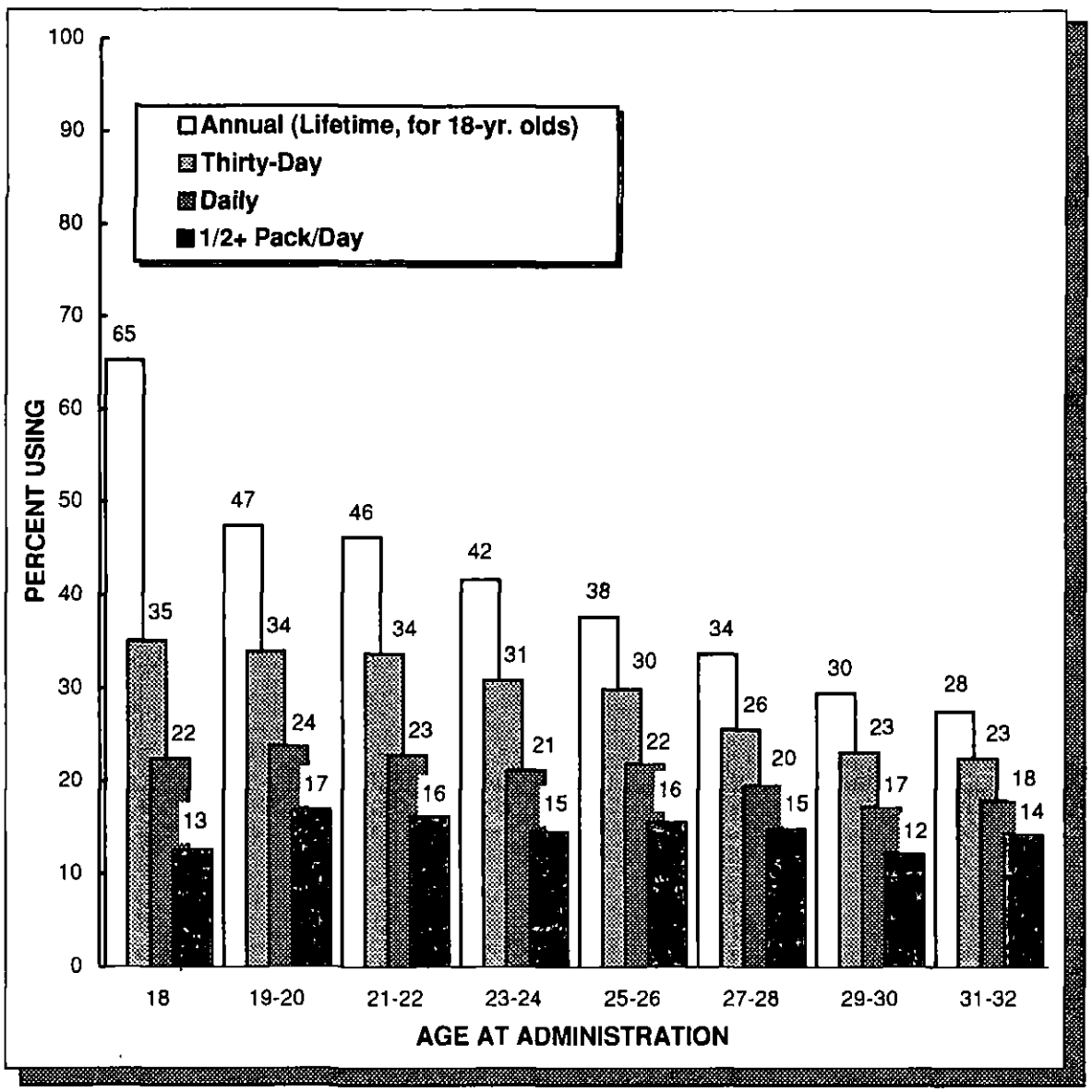


Figure 4-20

Cigarettes: Annual, Thirty-Day, Daily, and Half-Pack-a-Day Prevalence Among High School Seniors and Young Adults, 1998
by Age Group



Chapter 5

TRENDS IN DRUG USE AMONG YOUNG ADULTS POST-HIGH SCHOOL

In the early 1990s, we began to document large and important increases among secondary school students in the use of a number of substances, particularly marijuana and cigarettes. The increases continued among high school seniors through 1997, as discussed in Volume I. One important issue to be addressed in this chapter is whether such increases are occurring only among adolescents, or whether recent graduating classes are carrying their higher levels of drug use in high school with them, as they move into young adulthood—in other words, are they exhibiting lasting cohort effects?

Trends in the use of the various licit and illicit drugs by all high school graduates who are between one to fourteen years beyond high school are presented in this chapter. Figures 5-1 through 5-16 plot separate trend lines for two-year age strata (that is, 1-2 years beyond high school, 3-4 years beyond high school, etc.) in order to damp down the random fluctuations which would be seen with one-year strata. (Strictly speaking, these two-year strata are not age strata, because they are based on all respondents from adjacent high school classes, and they do not take account of the minor differences in individual respondents' ages within each class; however, they are close approximations to age strata, and we characterize them by the modal age of the respondents, as age 19 to 20, 21 to 22, and so on.) Each data point in these figures is based on approximately 1200 weighted cases drawn from two adjacent high school classes; actual (unweighted) numbers of cases are somewhat higher. For the 1998 data, the 19 to 20 year old stratum is comprised of participating respondents from the classes of 1997 and 1996, respectively; the 21 to 22 year old stratum contains data from the classes of 1995 and 1994, respectively; and so on.

Tables 5-1 through 5-5 are derived from the same data but are presented in tabular form for 19 to 28 year olds combined (i.e., those who graduated one to ten years earlier). Data are given for each year in which they are available for that full age band (i.e., from 1986 onward). Those aged 29 to 32 are omitted because their inclusion would shorten the time period over which trends can be examined. However, the full data for them are contained in Figures 5-1 through 5-16.

TRENDS IN PREVALENCE: YOUNG ADULTS

To repeat, trends in use by young adults may be found in Tables 5-1 through 5-5 (for the age group 19-28, combined), as well as in Figures 5-1 through 5-16 (for ages 19-32, broken into two-year age strata). The results are as follows:

- Longer term declines in annual prevalence for a number of drugs appeared to level in 1992 (see Table 5-2). Among the 19 to 28 year old young adult sample this was true for the use of ***any illicit drug, any illicit drug other than***

marijuana, marijuana, amphetamines, and ***crack***. In 1993 and 1994, annual prevalence for most drugs remained steady. ***Cocaine other than crack*** leveled in 1993 after a period of substantial decline. In 1995, there 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 is clear that by 1992 the downward secular trend observable in all of these age strata (as well as among adolescents) was over. (Such secular trends are also called "period effects".) What has happened since 1992, however, is quite a different form of change; rather than being a period effect common to all age groups, it is a "cohort effect", reflecting an interaction between age and period such that only adolescents showed the increase in illicit drug use initially, and then they carried those new levels of drug use with them as they entered older age bands. Figure 5-1 shows the effects due to generational replacement, as the teens of the early nineties reached their twenties. It can be seen that only the three youngest age bands show any sign of increase in their overall level of illicit drug use.

To repeat, in the earlier decline phase of the drug epidemic, annual prevalence of use of ***any illicit drug*** moved in parallel for all of the 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. In the relapse phase after 1992, however, a quite different pattern emerged, with the seniors increasing their drug use first, and rising fastest; the next oldest age group following, but with a little delay; the next oldest then following, but with a longer delay; and the remaining groups not yet showing an increase. This pattern reflects a classical cohort effect, where different age groups are not all moving in parallel; rather, different age groups show increases when the cohorts (that is, different high school classes) having heavier use at an earlier stage in development reach the relevant age level. Further, the slopes of the age bands are successively less steep in the higher age groups, suggesting that some of the cohort effect may be dissipating with maturation. To the extent that the cohort effect endures, one would predict a continuing increase among the 21 to 22 year olds as well as the beginning of an increase among the 23 to 24 year olds.

- Use of ***marijuana***, which is the major component of the index of illicit drug use, shows an almost identical pattern (Figure 5-3a). After a long and steady decline from the late 1970s to the early 1990s, use leveled for awhile 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 third youngest age band (21 to 22 year olds) began to show a rise. A similar pattern emerged for current ***daily marijuana*** use (Figure 5-3c).

- In recent years, ***LSD*** use has come to be much higher among those in their teens and early twenties than among the older strata, as Figure 5-6 illustrates. Over the interval 1985 to 1996 there was a gradual but considerable increase in LSD use among those age 18 to 24—and this was sharpest among the seniors and the 19 to 20 year olds. By the mid-1990s, however, use had leveled out in all age bands, with nearly all groups showing some decline since 1996 or 1997.

- In earlier years, trends in use of most drugs among the older age groups have pretty much paralleled the changes among seniors discussed in Chapter 5, Volume I. Many of the changes thus have been *secular trends*—that is, they are observable in all the age groups under study. This was generally true for the longer-term declines in the use of ***any illicit drug***, ***marijuana***, ***any illicit drug other than marijuana***, ***amphetamines***, ***hallucinogens***, ***crack***, and ***tranquilizers***. ***Narcotics other than heroin*** began to level out in 1987, ***barbiturates*** and ***methaqualone*** in 1988. However, in the last few years, the trends for nearly all of these drugs have not been parallel across age groups, again suggesting that the recent change is due more to *cohort effects*—differences between class cohorts which remain across a range of ages/dates.

- Several of these drug classes actually exhibited a faster decline in use among the older age groups than among high school seniors during the earlier period of decline. (See Figures 5-1 through 5-16.) These included ***any illicit drug***, ***any illicit drug other than marijuana***, ***amphetamines***, ***hallucinogens*** (until 1987), ***LSD*** (through 1989), and ***methaqualone***.

- In fact there was a crossover for some drugs when seniors are compared to young adult graduates. In earlier years, seniors had lower usage levels but in recent years have higher ones than post-high school respondents for use of ***any illicit drug***, ***any illicit drug other than marijuana***, ***marijuana***, ***hallucinogens***, ***LSD***, ***tranquilizers***, and ***amphetamines***.

- *Cocaine* (Figure 5-8) gives a quite dramatic picture of change. Unlike most of the other drugs, active use has tended to rise with age after high school, generally peaking at about 3-4 years past graduation. Despite the large age differences in absolute prevalences, however, all age strata have moved pretty much in parallel over the last 15 to 20 years. All began a sharp and sustained decline in use after 1986. The two youngest strata (seniors and 19 to 20 year olds) leveled by 1992, whereas use continued a decelerating decline for a couple of years beyond that in the older age groups. From 1994 to 1998, cocaine use rose some in the four youngest strata (i.e., those younger than 25), with the four older groups decreasing a bit more over that same period, reversing the age differences.

- With regard to ***inhalants***, the large separation of the age band lines in Figure 5-4 shows that, across many cohorts, use consistently has dropped sharply with age—particularly in the first few years after high school. In fact, of all of the populations covered in this study, the eighth graders (not shown in Figure 5-4) have had the highest rate of use, and we know that the decline with age starts at least as early as eighth or ninth grade.

  Figure 5-4 also shows that there has been a long-term gradual increase in annual inhalant use (unadjusted for underreporting of nitrite inhalants)—one which was greatest among seniors, next greatest among 19 to 20 year olds, and next greatest among 21 to 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. After 1995, this long-term trend began to reverse, and use began to decline in nearly all of the younger age strata.

- The annual prevalence for ***MDMA*** (ecstasy) among the young adult sample was at about 1.5% in 1989 and 1990; after 1991 it dropped to around 0.8% for several years, before rising significantly in 1995 to 1.6%. The annual rate has increased further, to 2.9% in 1998. (See Table 5-2; no figure is provided.) Ecstasy is one of the few drugs still showing an appreciable rise in use.

- The decline in ***crack*** use ended in 1991 among seniors, and by 1994 the decline ended among young adults (see Figure 5-9 and Table 5-2). Among 19 to 28 year olds the annual prevalence rate has held at about 1%, which is down by nearly two-thirds 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 (in this case after 1993) among seniors, but not in the older age strata.

- ***Amphetamine*** use showed a long and substantial decline between 1981 and 1991, and has been relatively flat among the young adult sample since then (Figure 5-12). As Table 5-2 shows, 19 to 28 year olds' annual prevalence rate has ranged from 4.0% to 4.6% since 1991. (Use by adolescents, however, increased from 1992 through 1997.) It should be noted, that use by those one to two years past high school jumped in 1995, apparently reflecting the earlier increases when they were seniors, and 23 to 24 year olds showed a rise two years later.

- Since 1990, when it was first measured, the use of ***crystal methamphetamine*** (ice) has remained at fairly low rates in this young adult population. However, its annual prevalence rose from 0.4% in 1992 to 1.2% by 1995 before leveling at 1.1% through 1998 (Table 5-2).

- Use of ***heroin*** increased appreciably in 1995 among both seniors and young adults aged 19 to 24 (Figure 5-10 and Table 5-2). Among young adults

generally, annual use had previously been quite stable at least as far back as 1986 (Table 5-2), and it stabilized again at a higher level after 1995.

- Among 19 to 28 year olds, the use of ***narcotics other than heroin*** leveled after 1991, following a period of slow, long-term decline (Figure 5-11). The five youngest age groups have shown some increase in the annual use of narcotics other than heroin since 1994.

- The ***alcohol*** trends for the older age groups (see Figures 5-15a-d) also have been somewhat different than for the younger age groups. In this case, however, it was the declines during the 1980s in ***30-day prevalence*** and ***occasions of heavy drinking*** which were greater for the two youngest age strata (seniors and those one to two years past high school) than for the older age groups. These differential trends are due in part to the effects of changes in minimum drinking age laws in many states, which would be expected to affect only the age groups under age 21. However, because similar (though weaker) trends were evident among high school seniors 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 secular trend in alcohol consumption during the 1980s.[22] By 1994, these declines in 30-day prevalence had slowed or discontinued for virtually all age groups.

  Those respondents three to four years past high school stand out for showing the smallest downward trend in ***binge drinking*** since the early eighties. One important segment of that age stratum is comprised of college students, who showed very little downward trend.

  The older age groups, in general, have shown only a modest long-term decline in annual prevalence rates, and no recent decline in 30-day prevalence rates or in binge drinking. Note that the binge drinking trend lines for different age groups (Figure 5-15d) are spread out on the vertical dimension reflecting large and persisting age differentials (age effects) in this behavior. The college-age group shows the highest rates of binge drinking. Rates of ***daily drinking*** (Figure 5-15c) have fallen by considerable amounts in all age strata, reflecting an important change in drinking patterns in the culture.

  As shown in Figure 5-15b, there was a sharp drop in 30-day prevalence of ***alcohol*** use among seniors between 1987 and 1992, and then among those 1-2 years past high school between 1989 and 1992. This may reflect some lagged and lasting effects resulting from the change in drinking age laws.

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[22] O'Malley, P.M., & Wagenaar, A.C. (1991). 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.

- The prevalence rates 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 different measures of smoking in the past 30 days (one or more cigarettes per month, one or more cigarettes per day, and half-pack or more cigarettes per day).

  While the curves are of the same general shape for each age band (Figures 5-16a-c), each curve tends to be displaced to the right of the immediately preceding age group, which is two years younger. The pattern is clearest in Figure 5-16c (half-pack plus per day). This pattern is very similar to the one described in Volume I for lifetime smoking rates for various grade levels *below* senior year; it is the classic pattern exhibited by cohort effect—that is, when cohorts (in this case, high school class cohorts) differ from other cohorts in a consistent way across much or all of the life span. We interpret the cigarette data as reflecting just such a cohort effect[23], and we believe that the persisting cohort differences are due to the dependence-producing characteristics of cigarette smoking.

  The declining levels of cigarette smoking across cohorts at age 18, which were observed when the classes of 1978 through 1981 became high school seniors, were later observable in the early-30s age band, as those same high school graduating classes reached their early 30s (see Figures 5-16b and c). This was true at least through about 1991. Since then, there has been some convergence of rates across age groups, largely because of few cohort differences among senior classes who graduated from the early to mid-1980s through the early 1990s.

  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 half-pack per day actually increases. Put another way, many of the light smokers in high school either become heavy smokers or quit smoking. In 1998, the age relationship with prevalence of smoking one or more cigarettes in the past 30 days is clearly negative, ranking ordinally from 35% among 18 year olds down to 23% among 31 to 32 year olds. The age relationship with prevalence of smoking a half-pack plus per day is more complex, ranging from 13% among 18 year olds, jumping to 17% among 19 to 20 year olds, and then remaining fairly level after that. In previous years, these cross-sectional age differences were different (even reversed) because large cohort differences were superimposed upon the age differences.

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[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.

This picture was further complicated in the nineties, when it appears that a new cohort effect emerged, with smoking among adolescents first rising sharply (beginning after 1991 for the eighth and tenth graders, and after 1992 for the twelfth graders), with the youngest of the young adult strata following suit a couple of years later (Figure 5-16a). Note that no such increase has yet occurred among those aged 27 or older, though we would predict that the new cohort effect will be observable in those age bands within a few years.

- Apart from cigarettes, none of the other drugs included in the study showed a clear long-term pattern of enduring cohort differences, despite wide variations in their use by different cohorts at a given age. There is one exception; a modest cohort effect was observable for ***daily marijuana*** use during the late 1970s and early 1980s. (But as more recent classes leveled at low rates of use, evidence for the cohort effect faded.) The emergence in the nineties of a new epidemic of marijuana use, and daily marijuana use, among teens once again yielded a strong pattern of cohort effects. As can be seen in Figure 5-3c, use rose sharply among seniors and 19 to 20 year olds after 1992, and began to rise among 21 to 22 year olds after 1993 with a sharp rise occurring in 1997. However, among those 25 and older there has been virtually no increase in daily use during the nineties. This is not so very different from the pattern of change for cigarette smoking which occurred in the nineties (Figure 5-16a). The fact that there is a cohort effect for daily marijuana use may be attributable, in part, to the strong association between that behavior and regular cigarette smoking.

- In sum, except for ***cigarettes*** and ***alcohol,*** prior to 1992, substance use among high school seniors and young adults had shown *longer-term* trends which were highly parallel. Although divergent trends would not necessarily demonstrate a lack of validity in either set of data (because such a divergence could occur as the result of cohort differences), we took the high degree of *convergence* for many years as evidence of validity in the trends reported earlier for the seniors. In fact, each of these sets of data have helped to validate the trend story reported by the other.

  Since 1992, however, there has been some 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 the 19 to 20 year olds and 21 to 22 years olds. This divergence indicates a new cohort effect, quite possibly reflecting a "generational forgetting" of the dangers of drugs by the youngest cohorts. The data discussed in Chapter 6, Attitudes and Beliefs about Drugs among Young Adults, provide additional evidence for this interpretation.

TRENDS FOR IMPORTANT SUBGROUPS OF YOUNG ADULTS

Four-year age-bands have been used here to examine subgroup trends in order to have sufficiently large numbers of cases to make reliable estimates for the various subgroups being examined. Subgroup data for respondents of each gender, and for respondents from communities of different sizes, are available for 19 to 22 year olds since 1980, 23 to 26 year olds since 1984, and 27 to 30 year olds since 1988. Beginning with the 1987 follow-up questionnaires, information on state of residence was included so we have been able to obtain trend data for the four regions of the country since 1987. These various subgroup data are not presented in tables or figures here because of the substantial amount of space they would require. A verbal synopsis of what they contain is presented here.

Gender Differences in Trends

- Over the long term, gender differences narrowed for some drugs, primarily because of a steeper decline in use among males (who generally had higher rates of use) than among females. The overall picture, though, is one of parallel trends, with use among males remaining higher for most drugs, including the indexes of ***any illicit drug*** use in the prior year and use of ***any illicit drug other than marijuana*** (see Table 5-5, for example).

- The downward trend in ***marijuana*** use among 19 to 22 year olds, between 1980 and 1989, was sharper among males than females, narrowing the gap between the two groups. Annual prevalence fell by 22 percentage points (to 34%) among males, compared to a drop of 14 percentage points (to 31%) among females. Since then the gap widened some, particularly as use has begun to rise modestly in this age band (but not much yet in the older ones) since 1993.

  Similarly, between 1980 and 1993 ***daily marijuana*** use for this age group fell more steeply, from 13% to 3% among males, versus from 6% to 2% among females, narrowing the gap considerably. However, as use began to rise after 1993, the gap widened. In the older age groups (aged 23-30), the differences have been pretty constant, with use among males being two to three times higher than among females.

- Males have shown slightly higher proportions using ***any illicit drug other than marijuana*** in all three age bands—a fact which has changed rather little over the years.

- For ***LSD***, among 19 to 22 year olds, the male-female differences tended to diminish as use declined (1980-1985), and tended to increase as use increased (1985-1995). In the two older age bands, there has been less change in use, and males have consistently had considerably higher rates of use than females. For example, among 23 to 26 year olds in 1998, 4.5% of the males report LSD use in the prior year vs 1.6% of the females.

- During the period of sharp decline in annual ***cocaine*** prevalence (1986-1993), use dropped more among males than females. In the 19 to 22 year age band, annual prevalence for males declined by 16 percentage points (to 4.5%) vs. 13 percentage points among females (to 2.8% in 1993). In the 23 to 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 (to 6.9%) among males and 13 percentage points (to 4.2%) among females. Since 1988, when data are first available for them, use in the 27 to 30 year old group also dropped faster among males (down 13.3 percentage points vs. 7.1 among females) between 1988 and 1997. In sum, during the period of sharp decline in cocaine use overall, the gender differences—which had been fairly large—narrowed considerably in all age bands.

- As ***barbiturate*** use declined after 1980, the modest gender differences (males were higher) were virtually eliminated in all three age bands; annual prevalence stands between 0.5% and 3.6% for both genders in all three age groups in 1998. Since 1993, there has been a modest increase for both genders among the 19 to 22 year olds.

- The annual prevalence figures for ***heroin*** dropped among males in the 19 to 22 year old category between 1980 and 1986 (from 0.6% to 0.2%) before leveling through 1994, so most of the decline in use was among males. Rates for both sexes remained very low, between 0.1% and 0.3% throughout the period 1986 through 1994. In 1995 through 1998, use increased appreciably among both males and females in this youngest age group, and a gender difference opened up again (with males higher). Among 23 to 26 year olds use also remained low (0.1% to 0.2%) over the years 1986-1994 for both genders. There was an increase in 1995 in both genders, followed by two years of falloff, but since 1994, more of a gender difference has emerged (again, males are higher). Among 27-30 year olds there was some falloff in ***heroin*** use between 1988 (when data were first available) and 1990 in both genders, and a narrowing of gender differences. Use rose slightly in the mid-nineties among males, and the rates among males have recently been higher than among females.

- Among 19 to 22 year olds, both genders showed some decline in their use of ***narcotics other than heroin*** between 1980 and 1991, with a near elimination of previous gender differences (males had been higher). Beginning in 1994, use by males began to rise in this age band, while use by females began to rise a year later. The increase has continued through 1998 and the gender difference has reemerged. The largest changes have occurred in the 19 to 22 year old band. Among 23 to 26 year olds, the gender difference (males higher) had been eliminated by 1988. It reemerged after 1992 as use has increased more among males. Among the 27 to 30 year olds, there has been little gender difference and the least increase in use in the 90's.

- Between 1981 and 1991, rates of ***amphetamine*** use were similar for males and females, and showed substantial and parallel downward trends for both genders. Among the 19 to 22 year olds, use for males dropped 22 percentage points in annual prevalence (to 5.2% in 1991), and females dropped 21 percentage points (to 4.7% in 1991). Since 1991, there have been small increases in annual prevalence for both genders in the 19 to 22 year age group, where the prevalence rate now stands at 5.9% for males and 6.6% for females, but there has been no upturn in the older age bands for either gender, and generally there has not been any appreciable gender difference in ***amphetamine*** use for some years in any of these three age bands.

- For ***tranquilizers***, both genders have shown a long, gradual decline (and very similar rates of use) since 1980. In recent years, rates hovered between 2% and 5% annual prevalence for both genders in all three age groupings. Beginning in 1995, use increased for both genders in the 19 to 22 year old group, followed by some increase in 1988 among the 23 to 26 year olds, again reflecting generational replacement.

- ***Inhalant*** use has been consistently higher among males than females in all three age groups. It has been relatively stable for both genders in the oldest group. The 19 to 22 year old group showed a gradual upward shift from 1980 to 1988 for both genders, similar to the trend pattern for high school seniors. The 1998 rates are close to 1988 rates for males, but slightly higher for females due to a rise in their increased use in the mid-nineties, which has narrowed the gender gap. Among 23 to 26 year olds, there was a widening gender gap as use by males, but not females, increased.

- For ***alcohol,*** 30-day prevalence rates have shown a long, gradual, parallel decline from 1981 through 1992 for both genders in the 19 to 22 year old age group. Thirty-day prevalence fell from 83% to 72% among males and from 75% to 62% among females by 1992. In the two older age bands, there had also been a modest, parallel decline for both genders, from 1985 through 1992 in the case of 23 to 26 year olds, and at least from 1988 (when data were first available) to 1991 or 1992 in the case of the 27 to 30 year olds. After 1992, both genders in all three age bands showed level use.

  There also was a general long-term decline in ***daily drinking*** from about 1981 or 1982 through about 1992, with daily use falling more among males, reducing but far from eliminating, what had been a large gender difference among 19 to 22 year olds. After 1994 or 1995, daily drinking by males began to increase in all three age bands, while rates for females remained at very low levels (under 3%). There is still a large gender difference for daily drinking among the 19 to 22 year old age group in 1998: 7.2% for males vs. 2.8% for females; but not nearly as large as it was in 1981 (11.8% vs. 4.0%). The gender differences have been larger for the older age groups (in 1998, for

example, 6.7% vs. 1.4% among 23 to 26 year olds) and there has been less evidence of any convergence.

There also are long-established and large gender differences in all age groups on ***occasional heavy drinking*** or "binge drinking" (i.e., having five or more drinks in a row at least once in the past two weeks). Males in the 19 to 22 year old band showed some longer-term decline in this statistic, from 54% in 1986 to 45% in 1995, thus narrowing the gender gap (from 24 percentage points in 1986 to 17 in 1995). From 1995 to 1998, binge drinking by males rose from 45% to 50%, while females did not change (28%). In the two older age bands (23-26 and 27-30 year olds), there is little evidence of a change in binge drinking rates by either gender since data were first available (in 1984 and 1988 respectively).

- All three age groups showed a long-term decline in ***daily smoking*** rates for both males and females since data were first available for each—at least through 1990: 19 to 22 year olds from 1980 to 1990; 23 to 26 year olds from 1984 to 1992; and 27 to 30 year olds from 1988 to 1994. Male and female daily smoking rates have also been very close, particularly in the two older age groups.

  There have been some increases in recent years in 30-day smoking rates among the two younger groups, and especially among the males. For example, from 1993 to 1998, 19 to 22 year old males increased from 29% to 37%, while females increased from 29% to 32%. Because smoking rates in high school graduating classes since 1992 have been on the rise, and because we know that class cohorts tend to maintain their relative differences over time, we have predicted a continuation of the increase in smoking among 19 to 22 year olds in the coming years, and eventually in the older age bands as the recent heavier-smoking high school class cohorts grow older. Beginning in 1996, smoking began to rise among the 23 to 26 year olds. Again, it has risen more among males.

Regional Differences in Trends

The respondent's current state of residence was first asked in the 1987 follow-up survey, so trend data by region exist only for the interval since then. In this case changes have been examined for all 19 to 28 year olds combined to increase the reliability of the estimates. Because gender and urbanicity cross-cut all regions, they have less sampling error than when the sample is divided into four separate regions. (All regions are represented by between 1500 and 2800 cases in all years.) In general, the changes which have occurred since 1987 have been pretty consistent across regions, particularly in terms of the direction of the change.

- There were substantial drops in all four regions between 1987 (the initial measurement point) and 1991 for ***any illicit drug, marijuana, cocaine,***

crack, and ***amphetamines***. Since 1991, there has been a leveling or increase in the use of these drugs in most or all regions, with the exception of ***cocaine*** which has continued to decline.

- The proportion of 19 to 28 year olds using ***any illicit drug*** has been consistently lowest in the South and highest in the West and Northeast. For ***marijuana*** use, the South stands out as being consistently lowest. Generally, the other three regions have been fairly close to one another. For the use of ***any illicit drug other than marijuana***, the West has stood out as highest and the other three regions have been nearly identical since 1990. As will be discussed below, in recent years the West has had the highest rates of use among young adults of ***LSD*** (at least until 1995, when use dropped in the West), ***hallucinogens other than LSD,*** (again, until 1995, when use dropped in the West and rose in all other regions), and ***ice***.

- The declines in ***cocaine*** use observed in all regions between 1987 and 1991, were greatest in the two regions which had attained the highest levels of use by the mid-1980s—the West and the Northeast. In 1992, these declines stalled in all regions except the Northeast, which was similar to the finding for seniors. A gradual further decline then occurred in all regions through 1996 (1997 for the West) before a slight rise began to occur, no doubt reflecting the affects of generational replacement. Much less regional variability remains in 1998 than in 1987.

- All four regions also exhibited an appreciable drop in ***crack*** use between 1987 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. As was true for cocaine generally, annual prevalence rates among the regions have converged; they now stand between 0.8% in the South and from 1.1%-1.3% in the other three regions.

- Through 1994, rates of ***inhalant*** use remained relatively stable and quite low in all four regions among 19 to 28 year olds. Annual use then became higher in the Northeast, after rises in 1995 and 1996. It now stands at 3.6% in the Northeast vs. between 1.5% and 2.0% in the other three regions.

- Questions about ***MDMA*** (ecstasy) were added to the surveys in 1989. Through 1993, rates were highest in the West and South and lower in the Northeast and North Central regions. After 1993, use in the Northeast began to increase, approaching the levels of use found in the South and West. Annual use of MDMA in 1998 stands at 1.2% in the North Central, where use has consistently been the lowest, to between 3.1% and 4.3% in the other three regions.

- ***LSD*** use rose in all four regions between 1989 and about 1995, with the West showing the highest prevalence rate. Between 1995 and 1997, rates converged and remained fairly level, with a decrease occurring in 1998 for all regions. Annual prevalence of ***LSD*** now stands at 2.3% to 4.5% for all regions. In the late eighties and then again in the late nineties, the use of ***hallucinogens other than LSD*** has been higher in the West and Northeast than in the South and North Central. The rates converged during the interval 1990-1993.

- Questions about the use of ***ice*** were added in 1990. Three of the regions have shown very low rates since then (from 0.1% to 1.4% annual prevalence). The West has shown the consistently highest rate (from 0.9% to 4.0%), including an increase in use between 1991 and 1995 (from 0.9% to 4.0%); and a fall-back to 2.3% by 1996, where it remained in 1998. Use also grew gradually in the South, from 0.1% in 1990 to 0.5% in 1996, 1.4% in 1997, and 1.2% in 1998.

- The use of ***barbiturates*** remained flat, and at about equivalent levels, in all four regions of the country from 1987, when regional data were first available, through 1994. Rates then rose gradually in all regions, but by the most in the South, where annual use in 1998 was at 3.1%.

- With respect to ***alcohol*** use, there were modest declines in all four regions between 1987 (when the first measurement was available for 19 to 28 year olds) and 1992 in 30-day prevalence. The rates for 30-day use then leveled in all regions for two to three years, followed by a bit more decline in all regions except the South, which remained unchanged. The West and the South have consistently had lower rates of 30-day use than the Northeast and North Central.

  Current daily use also showed a decline from the first (1987) data collection through about 1994 or 1995 in all regions. (The proportional declines were substantial—on the order of 40%-50%.) There has not been any consistent pattern of change since then.

  Occasional heavy drinking (or "binge drinking") has remained fairly level in all regions since 1987. The rates generally have been appreciably higher in the North Central (39% in 1998) and the Northeast (36%) than in the South and the West (31% and 32%, respectively).

- There have been highly consistent regional differences in ***cigarette smoking*** since data were first available in 1987—and they exist for monthly, daily and the half-pack-daily prevalence rates. The West consistently has had the lowest rates (e.g., 18% daily prevalence in 1998), the South the next lowest (20% in 1998), the Northeast the third highest (24% in 1998) and the North Central

the highest (26% in 1998). After some slight decline in 30-day prevalence in all regions between 1987, when regional data were first available, and 1989, rates leveled off for about five years (roughly through 1994). There then followed a very gradual increase of a few percentage points through 1998. For half-pack-a-day smoking, the decline phase was longer (from 1987 through about 1992 or 1993), likely reflecting the lag between smoking initiation and regular heavy smoking. The later increase in smoking did not really show up in all regions at the half-pack-a-day level until 1998.

Population Density Differences in Trends

The analyses presented here for population density return to the use of four-year age groupings, which allows a longer time interval to be examined for the younger strata, and for cross-age comparisons of the trends.

- In general, the proportion of young adults using ***any illicit drug*** declined substantially over the long term in communities of all sizes. (Among the young adults, five levels of population density are distinguished.) Among the 19 to 22 year olds, this decline began in 1980 (when data were first available) and continued through 1991 or 1992; rates then stabilized for a couple of years among the 19 to 22 year olds in all areas before increasing modestly. In the two older age groups, rates have remained steady in all areas since about 1991 or 1992, following a period of decline after 1985. In general, the farm/country and small town strata continue to have lower use than all of the other strata. In 1998, the proportions of 19 to 22 year olds reporting use of an illicit drug in the past year were 26% for the farm/country strata, 37% for small town, 39% for medium- and large-sized cities, and 41% for very large cities. (The absolute differences among these strata narrowed as usage rates fell, but have increased some with the recent rise in use.) For young adults aged 23 to 26, the differences became smaller by the early 1990s. Among the 27 to 30 year olds, the difference has averaged about 9% between the rural and large city strata and this has changed rather little since 1988, when data were first available for them.

- The use of ***any illicit drug other than marijuana*** tells a similar story. There was a long period of fairly parallel decline before leveling, and some convergence of usage rates among the strata at all three age levels. In general, small, large, and very large cities all have tended to have about the same rates, and the farm/country stratum has tended to have the lowest rates, particularly prior to 1990.

- ***Marijuana*** use began to decline in 1981 or 1982 among the 19 to 22 year olds in all community-size categories until about 1991 when prevalence rates stabilized, before trending upward again from 1993 through 1998. (The farm/country stratum only showed the increase from 1993 to 1994, then

marijuana use stabilized.) Still, all urban strata are 15 to 18 percentage points below where they were in 1980. The most rural region has remained more stable in the last few years causing the difference in annual marijuana use to increase between the rural and more populous areas of the country for 19 to 22 year olds. Among 27 to 30 year olds, there has been no increase in marijuana use in the 1990s in any stratum, and only a little increase among 23 to 26 year olds, and there only in the very large cities through 1997.

- Among the 19 to 22 year olds (the age group with by far the highest rates of ***LSD*** use of the young adults) LSD use in communities of all sizes declined appreciably in the 1980s, particularly in the urban strata, eliminating prior differences by 1984. Since around 1989, there has been some increase in use in all strata among the 19 to 22 year olds, with the most rural region continuing to have the lowest prevalence (2.7% in 1998). There was also some increase after 1989 in all strata among the 23 to 26 year old respondents.

- The use of ***hallucinogens other than LSD***, taken as a class, fell in communities of all sizes among the young adults between 1980 and about 1988. Then there was a leveling of use for a few years, followed by a modest increase in use among all strata in the 19 to 22 year old age band through 1997 (with the least increase in the farm/country stratum). In 1998, nearly all of these strata reversed course, showing a leveling or decline in use. In the 23 to 26 year old group, there have been slightly higher rates in the past four years among the more urban strata, but in general, the trend lines for the various strata have been pretty flat since the mid-1980s. Among 27 to 30 year olds, the trend lines have been very flat with only minor stratum differences.

- The important drop in ***cocaine*** use since 1986 slowed considerably after 1992 or 1993 in all three age strata and in communities of all sizes. Usage rates among the strata tended to converge during the period of decline, and this convergence remains, with cities showing rates of cocaine use only slightly higher than the less densely populated areas. After 1994, there was a slight increase in cocaine use among 19 to 22 year olds in all strata, which had halted in most strata by 1997.

- ***Crack*** use among all age groups peaked in 1987 or 1988 and, after declining, appears to have bottomed out in all population-density strata since about 1990. The crack use reported in these young adult samples at all three age levels has borne practically no systematic association with community size.

- ***Amphetamine*** use showed large drops after 1981 among 19 to 22 year olds in communities of all sizes; after 1984 (the first time point available) among the 23 to 26 year olds; and, to a lesser extent, after 1988 (first time point available) among the 27 to 30 year olds. After 1991, use tended to level at

relatively low prevalence rates in all strata and age groups, although use rose some after 1992 or 1993 for most population density strata of 19 to 22 year olds, before leveling in 1998. There are virtually no differences in use associated with urbanicity.

- ***Methaqualone*** use, which in 1981 was rather strongly associated (positively) with population density, dropped to annual prevalence rates of 0.8% or below in all size strata for all three age bands by 1989. Its use is no longer measured in the study.

- The use of ***barbiturates*** also fell to very low rates by 1989 before stabilizing in the upper age groups. Annual prevalence in 1998 is less than 4% in all community-size strata for the two older age bands. Among the 19 to 22 year olds, however, use has begun to rise again after 1992 or 1993. Unlike methaqualone, barbiturates have never shown much correlation with urbanicity, at least as far back as 1980.

- ***Tranquilizer*** use among young adults has had little or no association with population density over this time interval either. Among the 19 to 22 year olds, it declined by half in most strata from 1980 to about 1985, to just over 4% annual prevalence. Since 1985, some further, rather modest declines have occurred, resulting in annual prevalence rates as low as 1% to 2% in all community-size strata for all three age bands. Once again, however, use has risen among the 19 to 22 year olds only, since 1993 or 1994.

- From 1980 to 1995, annual ***heroin*** prevalence was less than 1.0%—usually much less—in all strata for all three age bands. After 1994, use among 19 to 22 year olds in all strata rose and reached 1% in the three urban strata by 1998. In fact, in the very large cities, it reached 1.6% in 1996, and has actually declined a bit since.

- The annual use of ***narcotics other than heroin*** had some positive association with degree of population density in the early 1980s; however, it has shown rather little association since then, due to a greater decline in use in several urban strata. Since 1993, use has increased among 19 to 22 year olds across all community sizes.

- The absolute levels of ***inhalant*** use have remained low in these age groups, particularly above age 22. However, during the mid- to late-1980s, there was a gradual increase among 19 to 22 year olds in all community-size strata. There has been no strong or consistent association with population density though the urban areas generally have tended to have higher rates than the non-urban areas among 19 to 22 year olds.

- In the first three years for which data on ***MDMA*** (ecstasy) were available (1989-1991), use among 19 to 22 year olds was generally higher in the very large city stratum than in the other strata. Between 1992 and 1994, use levels in this age group were very low, and not systematically related to population density. Rates have increased some in 1996 through 1998, particularly in the more urban areas. Large cities also showed some recent increases in the two older strata, as well; otherwise, the rates have been very low in all strata.

- Prevalence rates for the use of ***crystal methamphetamine*** (ice) have been very low since questions about its use were introduced into the study in 1990, and there has been no systematic relationship with urbanicity.

- Except for the fact that the farm/country stratum has tended to have lower than average use, there have been few differences in the 30-day prevalence of drinking ***alcohol*** among 19 to 22 year olds since data were first available on them in 1980. In the two older age bands, however, there has been a fairly consistent correlation between urbanicity and use of alcohol in the past thirty days. But there have been no consistent differences in current ***daily drinking*** associated with urbanicity in any of the three age bands. For ***occasional heavy drinking***, all strata have been fairly close across time at all three age levels, with the exception that the farm/country areas have pretty consistently shown the lowest rates of binge drinking at all ages.

- ***Cigarette smoking*** has been slightly negatively associated with urbanicity in all three age strata, without much evidence of differential trends related to degree of urbanicity.

TABLE 5-1

Trends in Lifetime Prevalence of Various Types of Drugs Among Respondents of Modal Age 19-28

(Entries are percentages)

	Percentage who used in lifetime													
Approx. Weighted N =	1986 *(6900)*	1987 *(6800)*	1988 *(6700)*	1989 *(6600)*	1990 *(6700)*	1991 *(6600)*	1992 *(6800)*	1993 *(6700)*	1994 *(6500)*	1995 *(6400)*	1996 *(6300)*	1997 *(6400)*	1998 *(6200)*	'97-'98 change
Any Illicit Drug[a]	70.5	69.9	67.9	66.4	64.5	62.2	60.2	59.6	57.5	57.4	56.4	56.7	57.0	+0.3
Any Illicit Drug[a] Other than Marijuana	48.4	47.0	44.6	42.7	40.8	37.8	37.0	34.6	33.4	32.8	31.0	30.5	29.9	-0.6
Marijuana	66.5	66.0	63.8	62.8	60.2	58.6	56.4	55.9	53.7	53.6	53.5	53.8	54.4	+0.6
Inhalants[b]	12.3	12.7	12.6	13.2	12.5	13.4	13.5	14.1	13.2	14.5	14.1	14.1	14.2	+0.1
Inhalants, Adjusted[c]	18.6	15.7	15.0	NA	13.5	14.1	13.9	14.5	13.5	NA	NA	NA	NA	—
Nitrites[d]	2.6	6.9	6.2	NA	1.9	1.4	1.2	1.3	1.0	NA	NA	NA	NA	—
Hallucinogens	18.5	17.1	17.0	15.9	16.1	15.7	15.7	15.4	15.4	16.1	16.4	16.7	17.4	+0.7
Hallucinogens, Adjusted[e]	20.1	17.2	17.2	NA	16.5	16.0	15.9	15.5	15.5	16.2	16.5	16.7	17.5	+0.8
LSD	14.6	13.7	13.8	12.7	13.5	13.5	13.8	13.6	13.8	14.5	15.0	15.0	15.7	+0.7
PCP[f]	8.4	4.8	5.0	NA	2.5	3.1	2.0	1.9	2.0	2.2	1.9	2.4	2.7	+0.3
Cocaine	32.0	29.3	28.2	25.8	23.7	21.0	19.5	16.9	15.2	13.7	12.9	12.0	12.3	+0.3
Crack[g]	NA	6.3	6.9	6.1	5.1	4.8	5.1	4.3	4.4	3.8	3.9	3.6	3.8	+0.2
Other Cocaine[h]	NA	28.2	25.2	25.4	22.1	19.8	18.4	15.1	13.9	12.4	11.9	11.3	11.5	+0.3
MDMA ("Ecstasy")[i]	NA	NA	NA	3.3	3.7	3.2	3.9	3.8	3.8	4.5	5.2	5.1	7.2	+2.1ss
Heroin	1.3	1.3	1.1	1.0	0.9	0.9	0.9	0.9	0.8	1.1	1.3	1.3	1.6	+0.2
Other Narcotics[j]	10.7	10.6	9.8	9.6	9.4	9.3	8.9	8.1	8.2	9.0	8.3	9.2	9.1	-0.1
Amphetamines, Adjusted[jk]	32.3	30.8	28.8	25.3	24.4	22.4	20.2	18.7	17.1	16.6	15.3	14.6	14.3	-0.3
"Ice"[k]	NA	NA	NA	NA	2.5	2.9	2.2	2.7	2.5	2.1	3.1	2.5	3.4	+0.9
Sedatives[j]	16.7	15.0	13.2	12.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Barbiturates[j]	11.1	9.7	8.9	7.9	8.7	8.2	7.4	6.5	6.4	6.7	6.6	6.5	6.9	+0.4
Methaqualone[j]	13.1	11.6	9.7	8.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Tranquilizers[j]	17.6	16.5	15.1	13.5	12.9	11.8	11.3	10.5	9.9	9.7	9.3	8.6	9.6	+1.1s
Alcohol[m]	94.8	94.9	94.8	94.5	94.3	94.1	93.4	92.1	91.2	91.6	91.2	90.7	90.6	-0.1
Cigarettes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Steroids[a]	NA	NA	NA	1.1	1.2	1.7	1.9	1.5	1.3	1.5	1.5	1.4	1.4	0.0

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.

'NA' indicates data not available.

Footnotes continue on next page.

FOOTNOTES FOR TABLES 5-1 THROUGH 5-4

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (until 1990), or tranquilizers not under a doctor's orders.

[b]This drug was asked about in four of the five questionnaire forms in 1986-1989, and five of the six questionnaire forms in 1990-1998. Total N is approximately 5200 in 1998.

[c]Adjusted for underreporting of amyl and butyl nitrites, except in 1995-1998, when questions about nitrite use were dropped.

[d]This drug was asked about in one questionnaire form. Total N in 1994 was approximately 1100.

[e]Adjusted for underreporting of PCP.

[f]This drug was asked about in one of the five questionnaire forms in 1986-1988, and in one of the six questionnaire forms in 1990-1998. Total N in 1998 is approximately 1000.

[g]This drug was asked about in two of the five questionnaire forms in 1987-1989, and in all six questionnaire forms in 1990-1998.

[h]This drug was asked about in one of the five questionnaire forms in 1987-1989, and in four of the six questionnaire forms in 1990-1998. Total N in 1998 is approximately 4100.

[i]This drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1998. Total N in 1998 is approximately 2100.

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

[k]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[l]This drug was asked about in two of the six questionnaire forms in 1990-1998. Total N in 1998 is approximately 2100.

[m]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.

[n]This drug was asked about in one of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1998. Total N in 1998 is approximately 2100.

TABLE 5-2
Trends in Annual Prevalence of Various Types of Drugs Among Respondents of Modal Age 19-28

(Entries are percentages)

	Percentage who used in last twelve months													
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Approx. Weighted N =	*(6900)*	*(6800)*	*(6700)*	*(6600)*	*(6700)*	*(6600)*	*(6800)*	*(6700)*	*(6500)*	*(6400)*	*(6300)*	*(6400)*	*(6200)*	
Any Illicit Drug[a]	41.9	39.3	36.3	32.8	30.7	27.0	28.3	28.4	28.4	29.8	29.2	29.2	29.9	+0.7
Any Illicit Drug[a] Other than Marijuana	27.0	23.9	21.3	18.3	16.7	14.3	14.1	13.0	13.0	13.8	13.2	13.6	13.2	-0.4
Marijuana	36.5	34.8	31.8	29.0	26.1	23.8	25.2	25.1	25.5	26.5	27.0	26.8	27.4	+0.6
Inhalants[b]	1.9	2.1	1.8	1.9	1.9	2.0	1.9	2.1	2.1	2.4	2.2	2.3	2.1	-0.2
Inhalants, Adjusted[c]	3.0	2.8	2.4	NA	2.1	2.2	1.9	2.3	2.2	NA	NA	NA	NA	___
Nitrites[d]	2.0	1.3	1.0	NA	0.4	0.2	0.1	0.4	0.3	NA	NA	NA	NA	___
Hallucinogens	4.5	4.0	3.9	3.6	4.1	4.5	5.0	4.5	4.8	5.6	5.6	5.8	5.2	-0.7
Hallucinogens, Adjusted[e]	4.9	4.1	3.9	NA	4.2	4.6	5.1	4.6	4.9	5.7	5.6	5.9	5.2	-0.7
LSD	3.0	2.9	2.9	2.7	3.3	3.8	4.3	3.8	4.0	4.6	4.5	4.4	3.5	-0.9ss
PCP[f]	0.8	0.4	0.4	NA	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.5	0.6	+0.1
Cocaine	19.7	15.7	13.8	10.8	8.6	6.2	5.7	4.7	4.3	4.4	4.1	4.6	4.9	+0.2
Crack[g]	3.2	3.1	3.1	2.5	1.6	1.2	1.4	1.3	1.1	1.1	1.1	1.0	1.1	+0.1
Other Cocaine[h]	NA	13.6	11.9	10.3	8.1	5.4	5.1	3.9	3.6	3.9	3.8	4.3	4.5	+0.2
MDMA ("Ecstasy")[i]	NA	NA	NA	1.4	1.5	0.8	1.0	0.8	0.7	1.6	1.7	2.1	2.9	+0.8
Heroin	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.4	0.4	0.3	0.4	+0.1
Other Narcotics[j]	3.1	3.1	2.7	2.8	2.7	2.5	2.5	2.2	2.5	3.0	2.9	3.3	3.4	+0.1
Amphetamines, Adjusted[j,k]	10.6	8.7	7.3	5.8	5.2	4.3	4.1	4.0	4.5	4.6	4.2	4.6	4.5	0.0
"Ice"[l]	NA	NA	NA	NA	0.4	0.3	0.4	0.8	0.9	1.2	0.9	0.9	1.1	+0.2
Sedatives[j]	3.0	2.5	2.1	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	___
Barbiturates[j]	2.3	2.1	1.8	1.7	1.9	1.8	1.6	1.9	1.8	2.1	2.2	2.4	2.5	+0.2
Methaqualone[j]	1.3	0.9	0.5	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	___
Tranquilizers[j]	5.4	5.1	4.2	3.7	3.7	3.5	3.4	3.1	2.9	3.4	3.2	3.1	3.8	+0.7s
Alcohol[m]	88.6	89.4	88.6	88.1	87.4	86.9	86.2	85.3	83.7	84.7	84.0	84.3	84.0	-0.3
Cigarettes	40.1	40.3	37.7	38.0	37.1	37.7	37.9	37.8	38.3	38.8	40.3	41.8	41.6	-0.2
Steroids[n]	NA	NA	NA	0.5	0.3	0.5	0.4	0.3	0.4	0.5	0.3	0.5	0.4	-0.1

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.

'NA' indicates data not available.

See footnotes at end of Table 5-1.

TABLE 5-3

Trends in Thirty-Day Prevalence of Various Types of Drugs Among Respondents of Modal Age 19-28

(Entries are percentages)

	Percentage who used in last thirty days													
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Approx. Weighted N =	*(6900)*	*(6800)*	*(6700)*	*(6600)*	*(6700)*	*(6600)*	*(6800)*	*(6700)*	*(6500)*	*(6400)*	*(6300)*	*(6400)*	*(6200)*	
Any Illicit Drug[a]	25.8	23.4	20.5	17.7	15.9	15.1	14.8	14.9	15.3	15.8	15.8	16.4	16.1	-0.3
Any Illicit Drug[a] Other than Marijuana	13.0	10.7	9.5	7.5	6.0	5.4	5.5	4.9	5.3	5.7	4.7	5.5	5.5	0.0
Marijuana	22.0	20.7	17.9	15.5	13.9	13.5	13.3	13.4	14.1	14.0	15.1	15.0	14.9	-0.1
Inhalants[b]	0.4	0.6	0.6	0.5	0.6	0.5	0.6	0.7	0.5	0.7	0.5	0.5	0.7	+0.2
Inhalants, Adjusted[c]	0.7	0.9	0.9	NA	0.7	0.6	0.7	0.7	0.6	NA	NA	NA	NA	—
Nitrites[d]	0.5	0.5	0.4	NA	0.1	*	0.1	0.2	0.1	NA	NA	NA	NA	—
Hallucinogens	1.3	1.2	1.1	1.1	0.9	1.1	1.5	1.2	1.4	1.7	1.2	1.5	1.4	-0.1
Hallucinogens, Adjusted[e]	1.4	1.2	1.1	NA	1.0	1.2	1.6	1.2	1.4	1.7	1.3	1.5	1.5	0.0
LSD	0.9	0.8	0.8	0.8	0.6	0.8	1.1	0.8	1.1	1.3	0.7	0.9	1.0	0.0
PCP[f]	0.2	0.1	0.3	NA	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.2	+0.1
Cocaine	8.2	6.0	5.7	3.8	2.4	2.0	1.8	1.4	1.3	1.5	1.2	1.5	1.7	+0.1
Crack[g]	NA	1.0	1.2	0.7	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.0
Other Cocaine[h]	NA	4.8	4.8	3.4	2.1	1.8	1.7	1.1	1.0	1.3	1.1	1.5	1.5	0.0
MDMA ("Ecstasy")[i]	NA	NA	NA	0.4	0.2	0.1	0.3	0.3	0.2	0.4	0.3	0.6	0.8	+0.1
Heroin	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Other Narcotics[j]	0.9	0.9	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.9	0.7	0.9	0.9	-0.1
Amphetamines, Adjusted[j,k]	4.0	3.2	2.7	2.1	1.9	1.5	1.5	1.5	1.7	1.7	1.5	1.7	1.7	0.0
"Ice"[l]	NA	NA	NA	NA	0.1	*	0.1	0.3	0.5	0.3	0.3	0.3	0.3	-0.1
Sedatives[j]	0.9	0.8	0.7	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Barbiturates[j]	0.7	0.7	0.7	0.5	0.6	0.5	0.5	0.6	0.6	0.8	0.8	0.9	0.9	0.0
Methaqualone[j]	0.3	0.2	0.1	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Tranquilizers[j]	1.8	1.6	1.4	1.2	1.1	0.9	1.0	1.0	0.8	1.1	0.7	1.1	1.2	+0.1
Alcohol[m]	75.1	75.4	74.0	72.4	71.2	70.6	69.0	68.3	67.7	68.1	66.7	67.5	66.9	-0.6
Cigarettes	31.1	30.9	28.9	28.6	27.7	28.2	28.3	28.0	28.0	29.2	30.1	29.9	30.9	+1.1
Steroids[n]	NA	NA	NA	0.2	0.1	0.2	0.1	0.0	0.1	0.2	0.2	0.2	0.2	-0.1

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 a prevalence rate of less than 0.05% but greater than true zero.
'NA' indicates data not available.

See footnotes at end of Table 5-1.

TABLE 5-4

Trends in Thirty-Day Prevalence of Daily Use of Various Types of Drugs Among Respondents of Modal Age 19-28

(Entries are percentages)

	Percentage who used daily in last thirty days													
Approx. Weighted N =	1986 *(6900)*	1987 *(6800)*	1988 *(6700)*	1989 *(6600)*	1990 *(6700)*	1991 *(6600)*	1992 *(6800)*	1993 *(6700)*	1994 *(6500)*	1995 *(6400)*	1996 *(6300)*	1997 *(6400)*	1998 *(6200)*	'97-'98 change
Marijuana	4.1	4.2	3.3	3.2	2.5	2.3	2.3	2.4	2.8	3.3	3.3	3.8	3.7	-0.1
Cocaine	0.2	0.1	0.2	0.1	*	0.1	*	0.1	*	0.1	*	*	*	0.0
Amphetamines, Adjusted[j,k]	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0
Alcohol														
Daily[m]	6.1	6.6	6.1	5.5	4.7	4.9	4.5	4.5	3.9	3.9	4.0	4.6	4.0	-0.7
5+ drinks in a row in last 2 weeks	36.1	36.2	35.2	34.8	34.3	34.7	34.2	34.4	33.7	32.6	33.6	34.4	34.1	-0.3
Cigarettes														
Daily	25.2	24.8	22.7	22.4	21.3	21.7	20.9	20.8	20.7	21.2	21.8	20.6	21.9	+1.2
Half-pack or more per day	20.2	19.8	17.7	17.3	16.7	16.0	15.7	15.5	15.3	15.7	15.3	14.6	15.6	+0.9

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.

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% but greater than true zero.

See footnotes at end of Table 5-1.

TABLE 5-5

Trends in Annual and Thirty-Day Prevalence of an Illicit Drug Use Index[a] Among Respondents of Modal Age 19-28

(Entries are percentages)

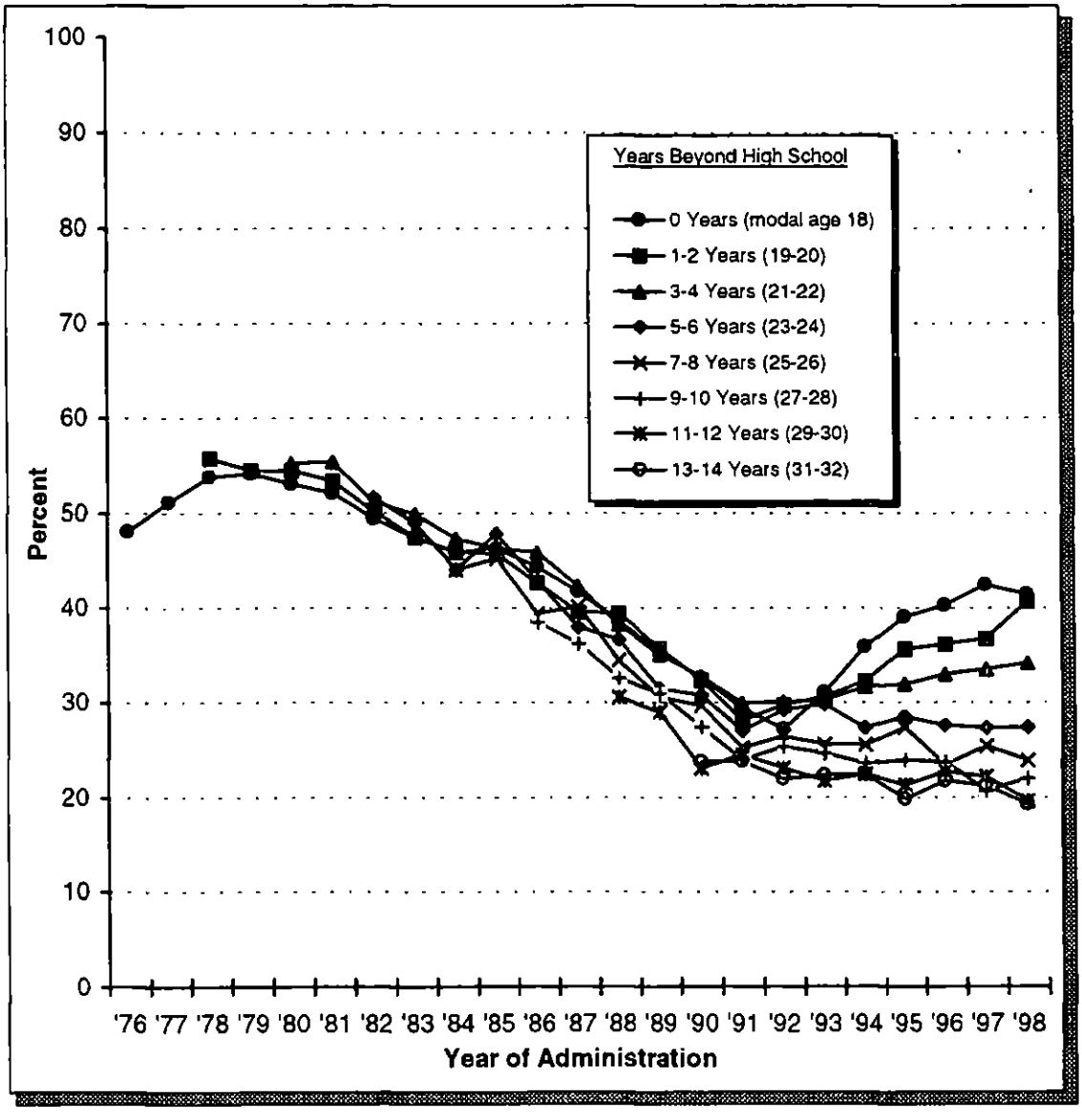
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
	Percentage reporting use in last twelve months													
Any Illicit Drug	41.9	39.3	36.3	32.8	30.7	27.0	28.3	28.4	28.4	29.8	29.2	29.2	29.9	+0.7
Males	45.3	42.6	39.5	35.7	33.6	30.0	31.4	31.1	32.3	32.1	31.6	31.9	33.6	+1.8
Females	39.0	36.5	33.6	30.5	28.3	24.5	25.8	26.1	25.3	28.1	27.3	27.1	27.1	0.0
Any Illicit Drug Other than Marijuana	27.0	23.9	21.3	18.3	16.7	14.3	14.1	13.0	13.0	13.8	13.2	13.6	13.2	-0.4
Males	30.4	26.5	23.8	21.0	19.1	16.4	16.3	14.7	16.2	16.2	15.4	15.6	16.2	+0.5
Females	24.0	21.6	19.4	16.2	14.7	12.5	12.2	11.6	10.5	12.0	11.4	12.0	11.0	-1.1
	Percentage reporting use in last thirty days													
Any Illicit Drug	25.8	23.4	20.5	17.7	15.9	15.1	14.8	14.9	15.3	15.8	15.8	16.4	16.1	-0.3
Males	29.9	27.1	23.7	21.1	18.8	18.3	17.9	17.4	19.5	18.6	19.0	19.8	20.1	+0.3
Females	22.2	20.2	17.8	15.0	13.5	12.5	12.4	12.9	12.1	13.5	13.3	13.8	13.2	-0.6
Any Illicit Drug Other than Marijuana	13.0	10.7	9.5	7.5	6.0	5.4	5.5	4.9	5.3	5.7	4.7	5.5	5.5	0.0
Males	15.2	12.3	10.6	9.1	6.8	6.6	6.5	5.9	7.1	6.8	5.7	6.8	7.1	+0.3
Females	11.0	9.4	8.7	6.2	5.3	4.4	4.7	4.0	3.9	4.8	4.0	4.5	4.4	-0.1
	Approximate Weighted N													
All Respondents	*6900*	*6800*	*6700*	*6600*	*6700*	*6600*	*6800*	*6700*	*6500*	*6400*	*6300*	*6400*	*6200*	
Males	*3200*	*3100*	*3000*	*2900*	*3000*	*3000*	*3000*	*3000*	*2900*	*2800*	*2700*	*2800*	*2700*	
Females	*3700*	*3700*	*3700*	*3700*	*3700*	*3600*	*3700*	*3700*	*3600*	*3600*	*3600*	*3600*	*3500*	

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.

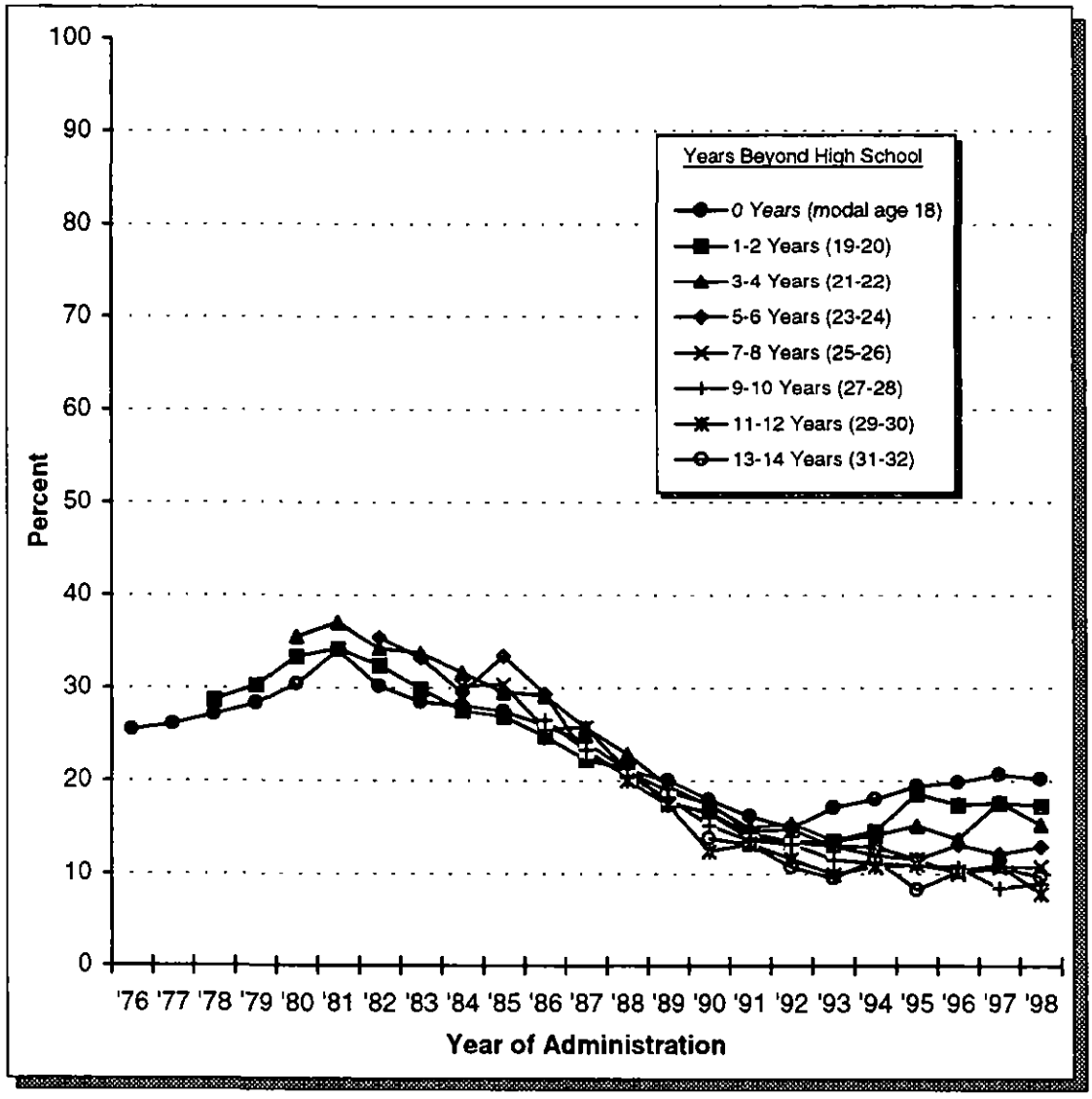
[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (until 1990), or tranquilizers not under a doctor's orders.

Figure 5-1
Any Illicit Drug: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



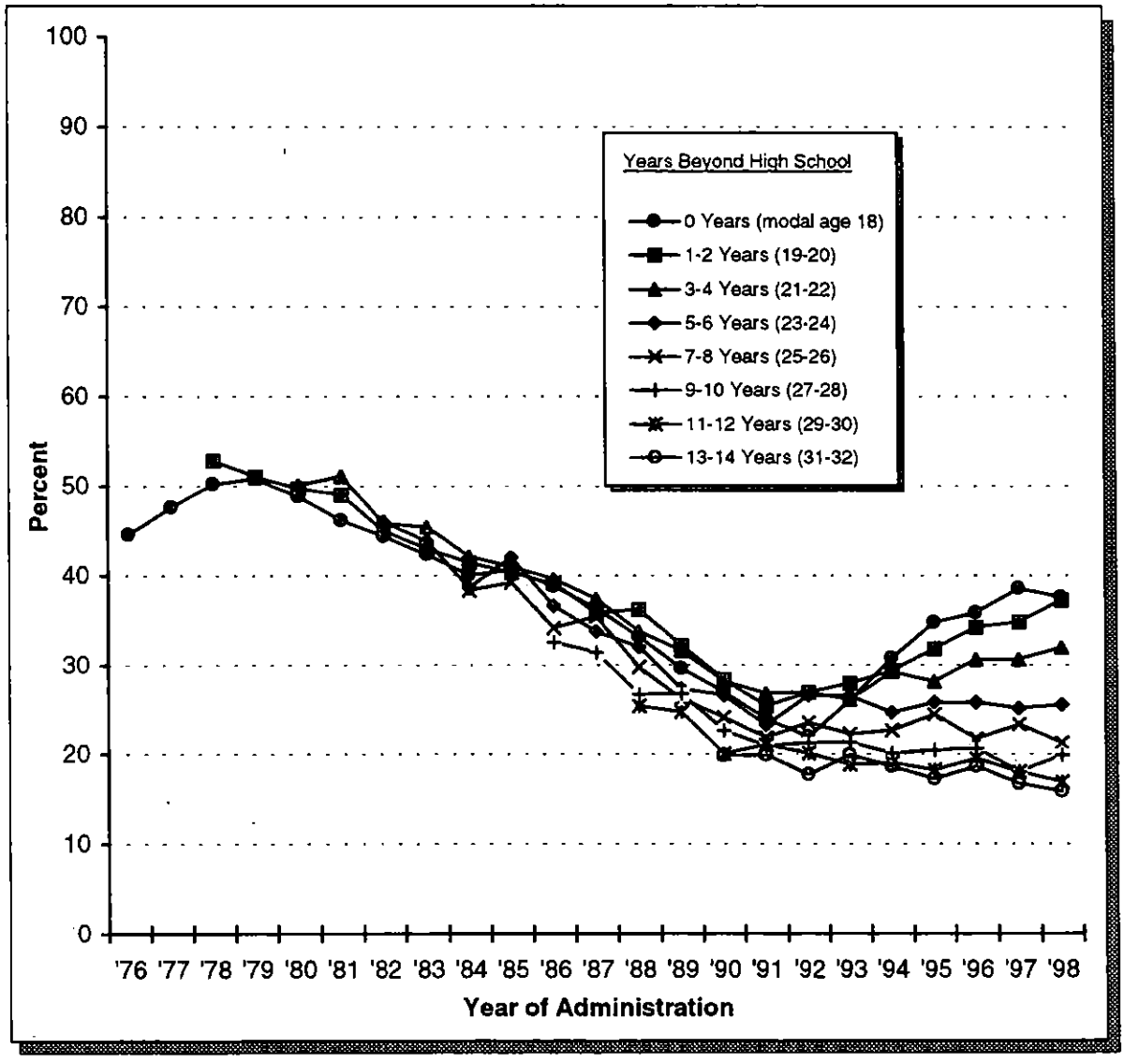
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	48.1	51.1	53.8	54.2	53.1	52.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4
1-2 Years			55.8	54.5	54.5	53.4	50.2	47.4	45.9	45.7	42.6	39.5	39.4	35.7	32.3	28.1	29.7	30.5	32.2	35.6	36.1	36.7	40.6
3-4 Years					55.3	55.4	51.2	49.9	47.3	46.3	45.8	42.3	38.2	35.0	32.7	29.9	30.0	30.2	31.6	31.9	33.0	33.5	34.1
5-6 Years							51.7	48.9	44.0	47.8	42.8	37.9	36.6	31.4	30.7	27.0	29.2	29.8	27.3	28.5	27.6	27.3	27.4
7-8 Years									44.0	45.2	39.3	40.1	34.4	30.5	29.6	25.2	26.4	25.6	25.5	27.3	23.4	25.4	23.9
9-10 Years											38.4	36.2	32.5	30.9	27.4	23.9	25.3	24.6	23.6	23.9	23.7	20.7	22.0
11-12 Years													30.5	28.9	23.0	24.5	23.1	21.7	22.4	21.3	22.7	22.2	19.6
13-14 Years															23.7	23.8	21.9	22.3	22.4	19.8	21.7	21.2	19.3

Figure 5-2
Any Illicit Drug Other than Marijuana: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



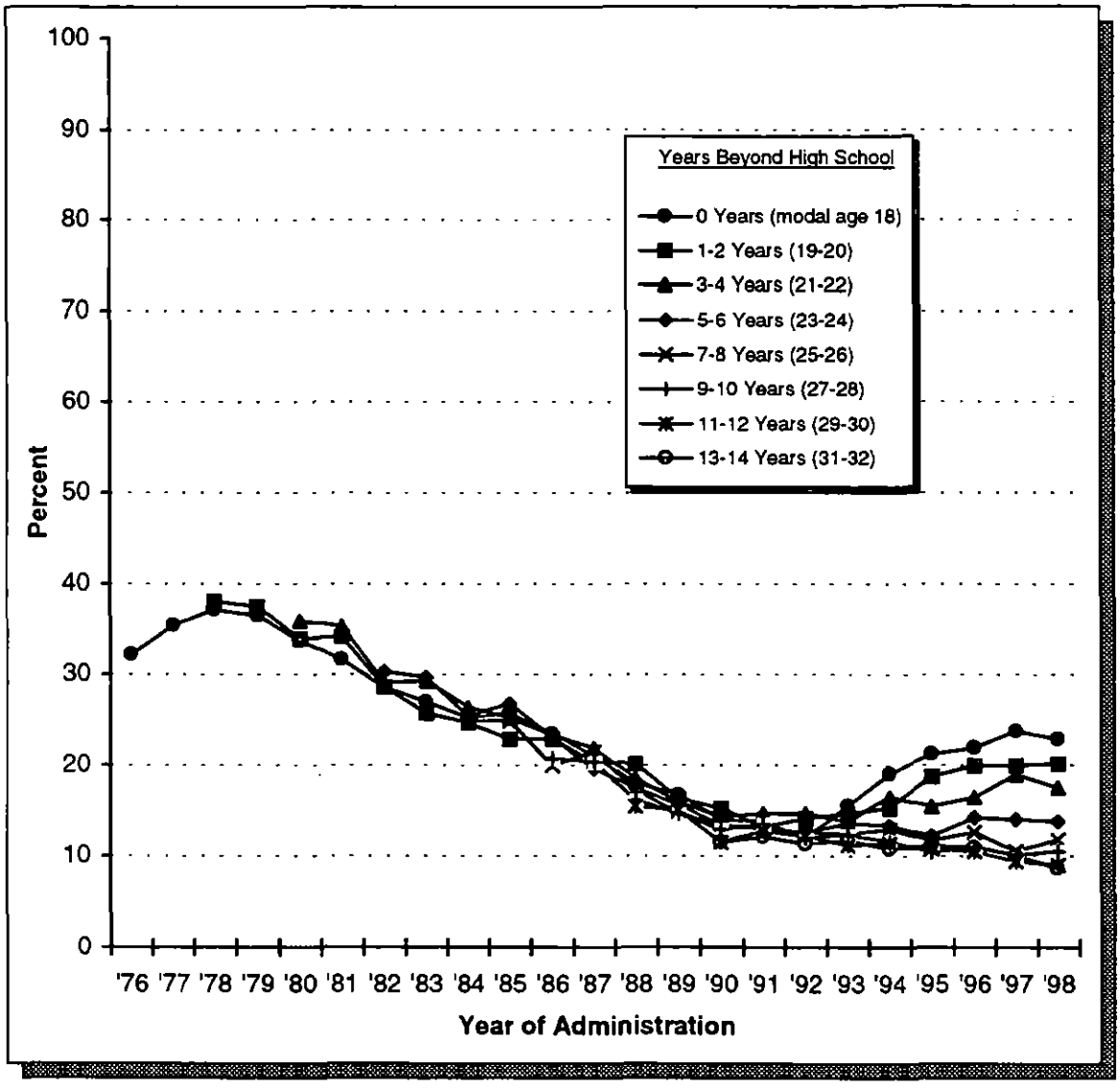
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	25.4	26.0	27.1	28.2	30.4	34.0	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2
1-2 Years			28.6	30.2	33.3	34.2	32.4	29.8	27.5	26.9	24.7	22.2	21.3	17.6	16.5	13.8	13.4	13.5	14.6	18.6	17.4	17.6	17.3
3-4 Years					35.5	37.0	34.2	33.7	31.6	29.5	29.1	25.6	22.8	19.4	17.4	14.9	15.4	13.5	14.1	15.2	13.7	17.7	15.3
5-6 Years							35.4	33.2	29.4	33.4	29.3	22.6	21.1	18.8	17.5	14.6	14.8	12.9	12.9	11.5	13.1	12.1	12.9
7-8 Years									30.2	30.3	25.5	25.7	21.0	17.6	16.6	14.4	13.4	13.0	12.0	11.6	10.0	10.7	10.8
9-10 Years											26.5	23.3	20.4	18.2	15.2	13.6	13.2	11.5	11.1	10.9	10.7	8.4	8.9
11-12 Years													20.0	17.4	12.4	13.2	11.6	9.9	10.8	11.0	10.3	11.0	7.8
13-14 Years															13.8	13.1	10.7	9.5	11.5	8.2	10.2	10.8	9.6

Figure 5-3a
Marijuana: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



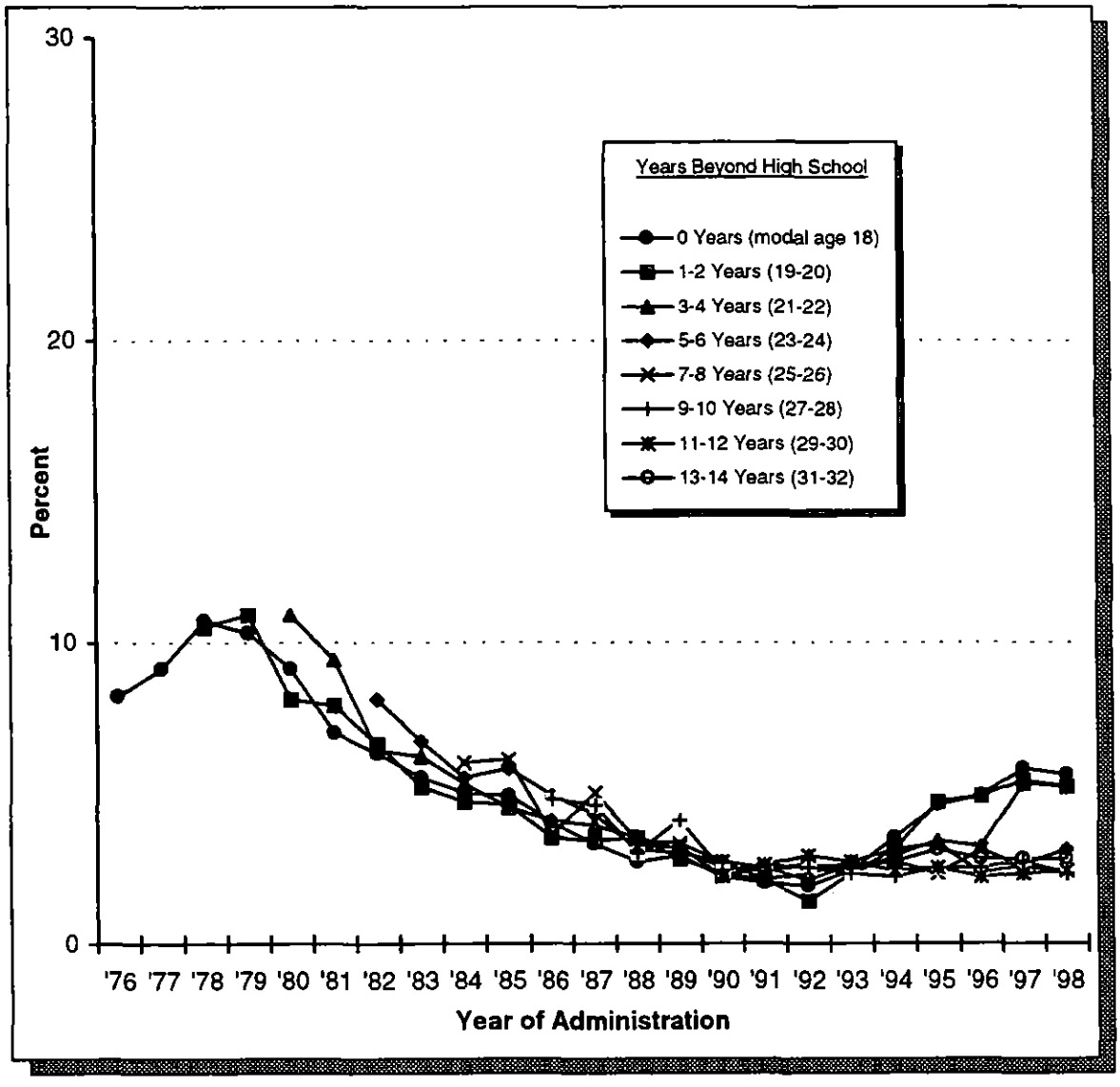
Years Post High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5
1-2 Years			52.8	51.0	49.7	49.0	44.9	43.0	41.4	40.3	39.1	35.8	36.2	32.2	28.4	25.4	26.9	27.9	29.3	31.8	34.2	34.8	37.2
3-4 Years					50.1	51.1	45.8	45.4	42.1	40.9	39.6	37.4	33.7	31.6	28.2	26.8	26.9	26.1	29.2	28.1	30.6	30.6	31.9
5-6 Years							46.0	43.8	38.6	42.0	36.6	33.7	32.0	27.3	26.6	23.2	26.6	26.5	24.6	25.8	25.8	25.1	25.5
7-8 Years									38.3	39.2	34.1	35.4	29.7	26.2	24.1	21.8	23.5	22.2	22.6	24.4	21.7	23.3	21.2
9-10 Years											32.5	31.4	26.7	26.8	22.6	20.9	21.2	21.3	20.1	20.4	20.6	18.0	19.9
11-12 Years													25.4	24.7	20.0	21.0	20.1	18.8	19.0	18.2	19.5	18.0	16.9
13-14 Years															19.8	19.9	17.7	19.9	18.6	17.2	18.6	16.7	15.8

Figure 5-3b
Marijuana: Trends in Thirty-Day Prevalence Among High School Seniors and Young Adults
by Age Group



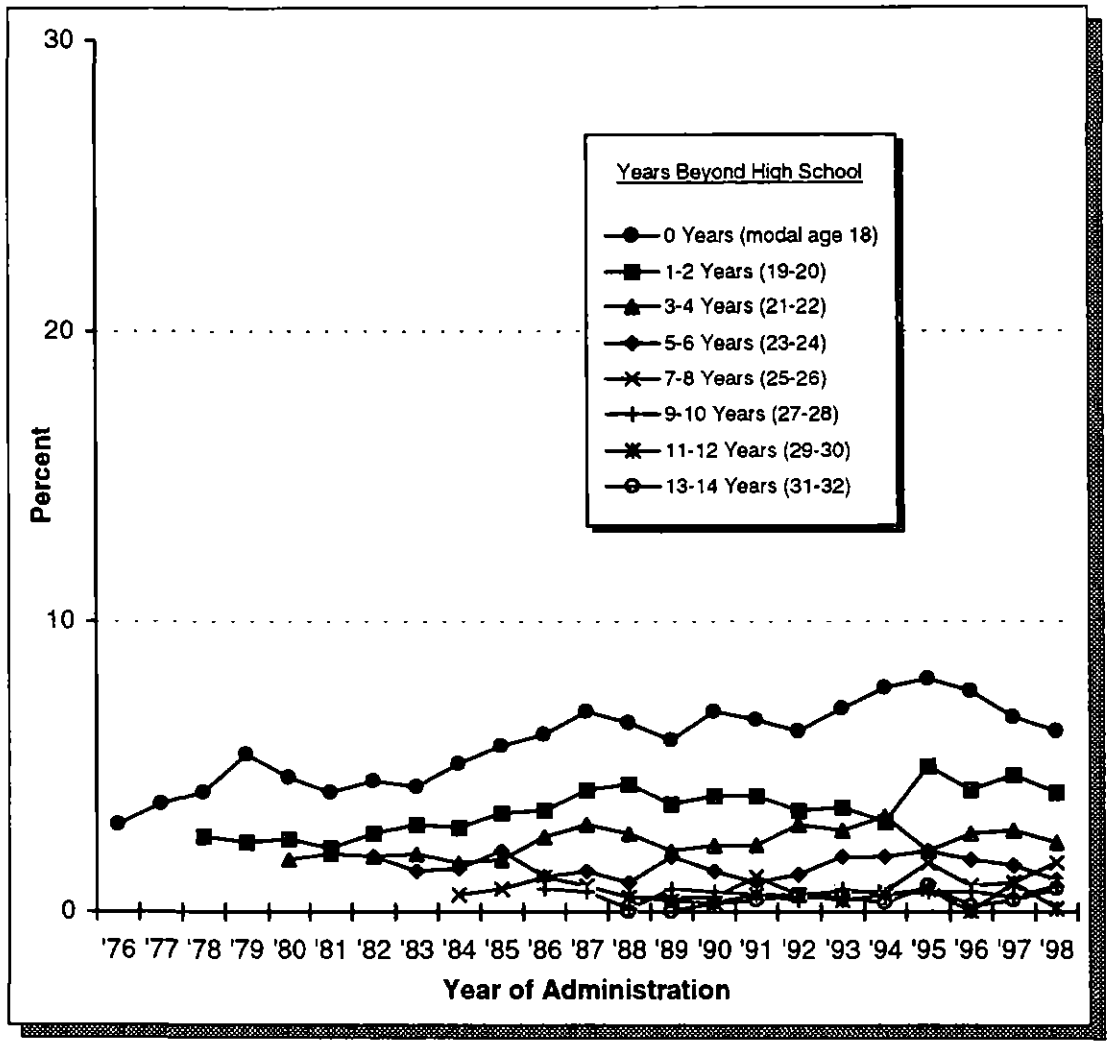
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	32.2	35.4	37.1	36.5	33.7	31.6	28.5	27.0	25.2	25.7	23.4	21.0	18.0	16.7	14.0	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8
1-2 Years			38.0	37.5	33.9	34.2	28.6	25.7	24.6	22.8	22.9	20.4	20.1	16.3	15.2	13.2	14.1	14.6	15.3	18.7	19.9	19.9	20.1
3-4 Years					35.9	35.3	29.1	29.3	26.4	25.2	23.3	21.8	18.5	15.9	14.3	14.7	14.7	13.8	16.5	15.4	16.4	18.9	17.5
5-6 Years							30.3	29.7	25.4	26.8	23.0	19.6	17.4	15.6	13.4	13.0	12.5	13.6	13.3	12.2	14.2	14.0	13.8
7-8 Years									24.9	24.8	19.9	21.5	17.2	14.7	13.4	13.0	12.6	12.4	12.9	11.7	12.6	10.5	11.8
9-10 Years											20.7	20.3	16.1	14.7	12.9	13.5	12.0	12.3	11.6	10.4	11.0	10.1	10.5
11-12 Years													15.4	15.0	11.5	12.7	12.2	11.2	11.4	10.8	10.5	9.4	9.0
13-14 Years															11.5	12.1	11.3	11.7	10.8	11.1	10.9	10.0	8.7

Figure 5-3c
Marijuana: Trends in Thirty-Day Prevalence of Daily Use Among High School Seniors and Young Adults
by Age Group



Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	8.2	9.1	10.7	10.3	9.1	7.0	6.3	5.5	5.0	4.9	4.0	3.3	2.7	2.9	2.2	2.0	1.9	2.4	3.5	4.6	4.9	5.8	5.6
1-2 Years			10.5	10.9	8.1	7.9	6.6	5.2	4.7	4.6	3.5	3.4	3.5	2.8	2.3	2.1	1.4	2.3	3.1	4.7	4.9	5.4	5.2
3-4 Years					10.9	9.4	6.4	6.2	5.3	4.5	4.1	3.9	3.5	3.1	2.5	2.4	2.6	2.3	2.9	3.4	3.2	5.3	5.2
5-6 Years							8.1	6.7	5.5	5.8	4.9	4.3	3.1	3.0	2.7	2.1	2.3	2.7	3.1	3.3	2.3	2.6	3.1
7-8 Years									6.0	6.1	3.6	5.0	3.4	3.3	2.7	2.5	2.6	2.5	2.7	2.3	3.1	2.5	2.4
9-10 Years											4.8	4.6	3.0	4.1	2.4	2.6	2.5	2.3	2.2	2.5	2.5	2.7	2.3
11-12 Years													3.2	3.2	2.2	2.6	2.9	2.7	2.4	2.5	2.2	2.3	2.4
13-14 Years															2.2	2.5	2.1	2.6	2.7	3.1	2.8	2.8	2.8

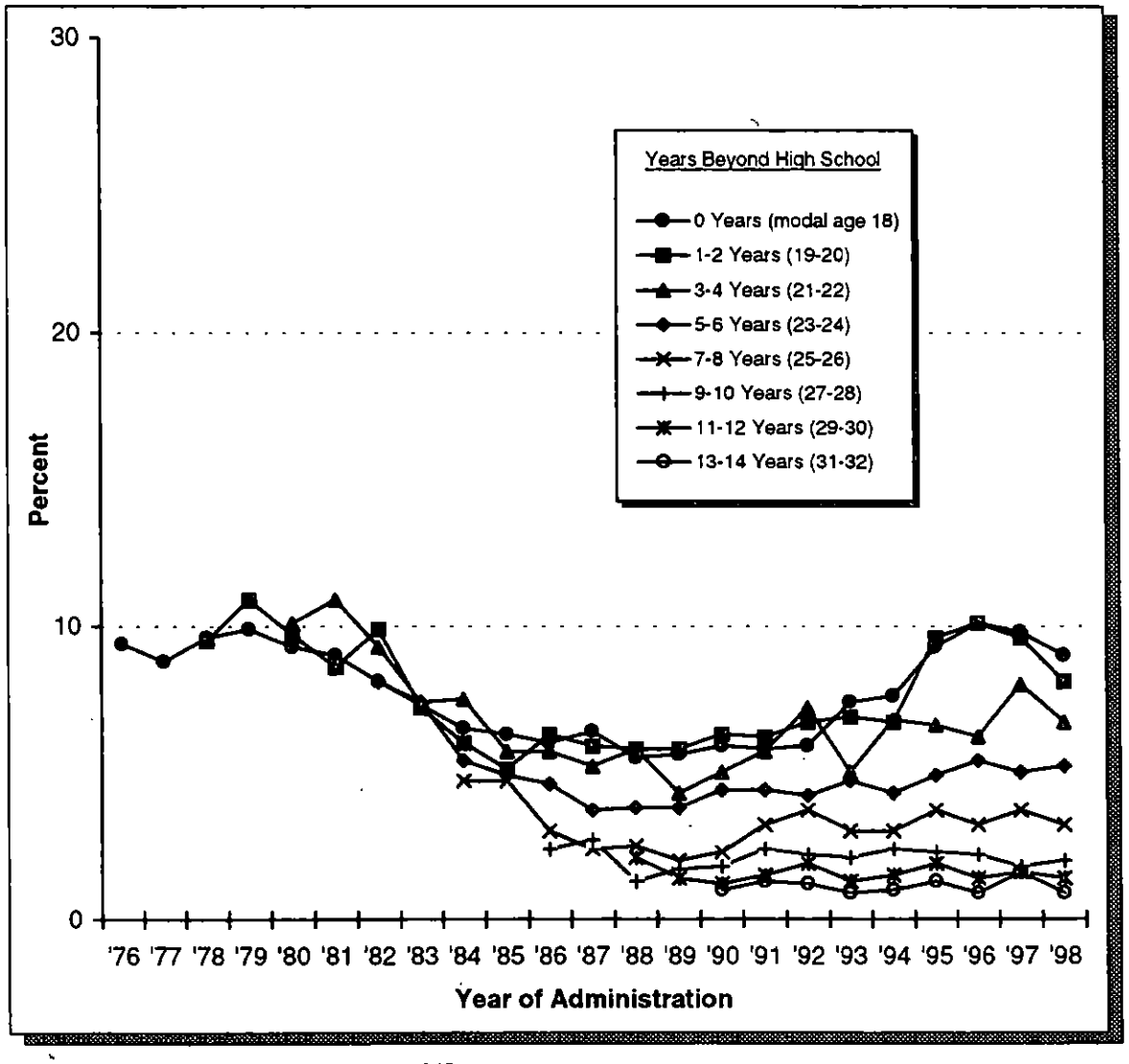
Figure 5-4
Inhalants*: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



*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.

Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2
1-2 Years			2.6	2.4	2.5	2.2	2.7	3.0	2.9	3.4	3.5	4.2	4.4	3.7	4.0	4.0	3.5	3.6	3.1	5.0	4.2	4.7	4.1
3-4 Years					1.8	2.0	1.9	2.0	1.7	1.8	2.6	3.0	2.7	2.1	2.3	2.3	3.0	2.8	3.3	2.1	2.7	2.8	2.4
5-6 Years							1.9	1.4	1.5	2.1	1.2	1.4	1.0	1.9	1.4	1.0	1.3	1.9	1.9	2.1	1.8	1.6	1.1
7-8 Years									0.6	0.8	1.2	0.9	0.5	0.5	0.5	1.2	0.6	0.7	0.7	1.7	0.9	1.0	1.7
9-10 Years											0.8	0.7	0.1	0.8	0.7	0.6	0.4	0.8	0.6	0.7	0.7	0.5	0.9
11-12 Years													0.5	0.4	0.3	0.6	0.6	0.4	0.6	0.8	0.0	1.0	0.1
13-14 Years															0.3	0.4	0.6	0.5	0.3	0.9	0.2	0.4	0.8

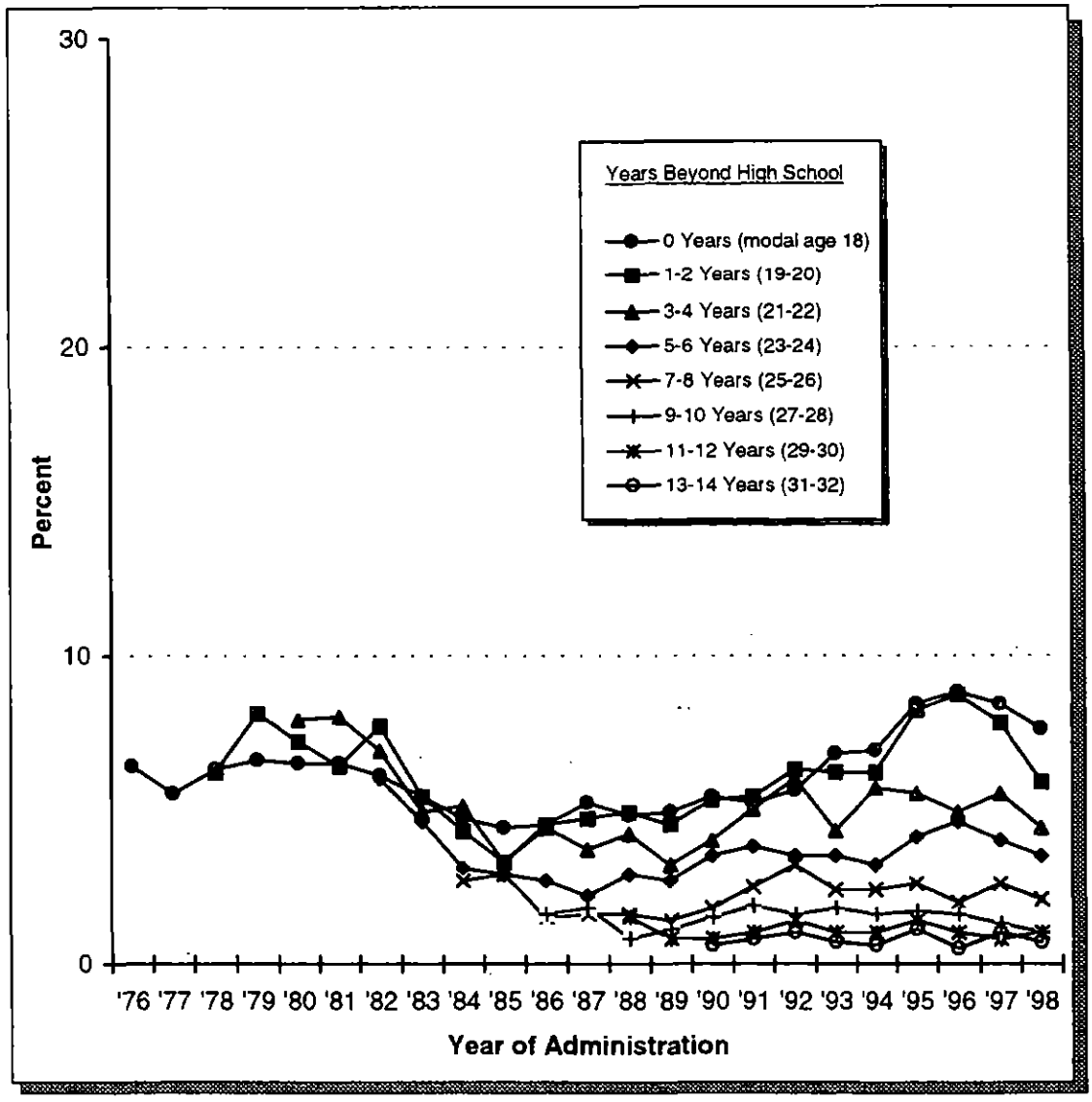
Figure 5-5
Hallucinogens*: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



*Unadjusted for the possible underreporting of PCP.

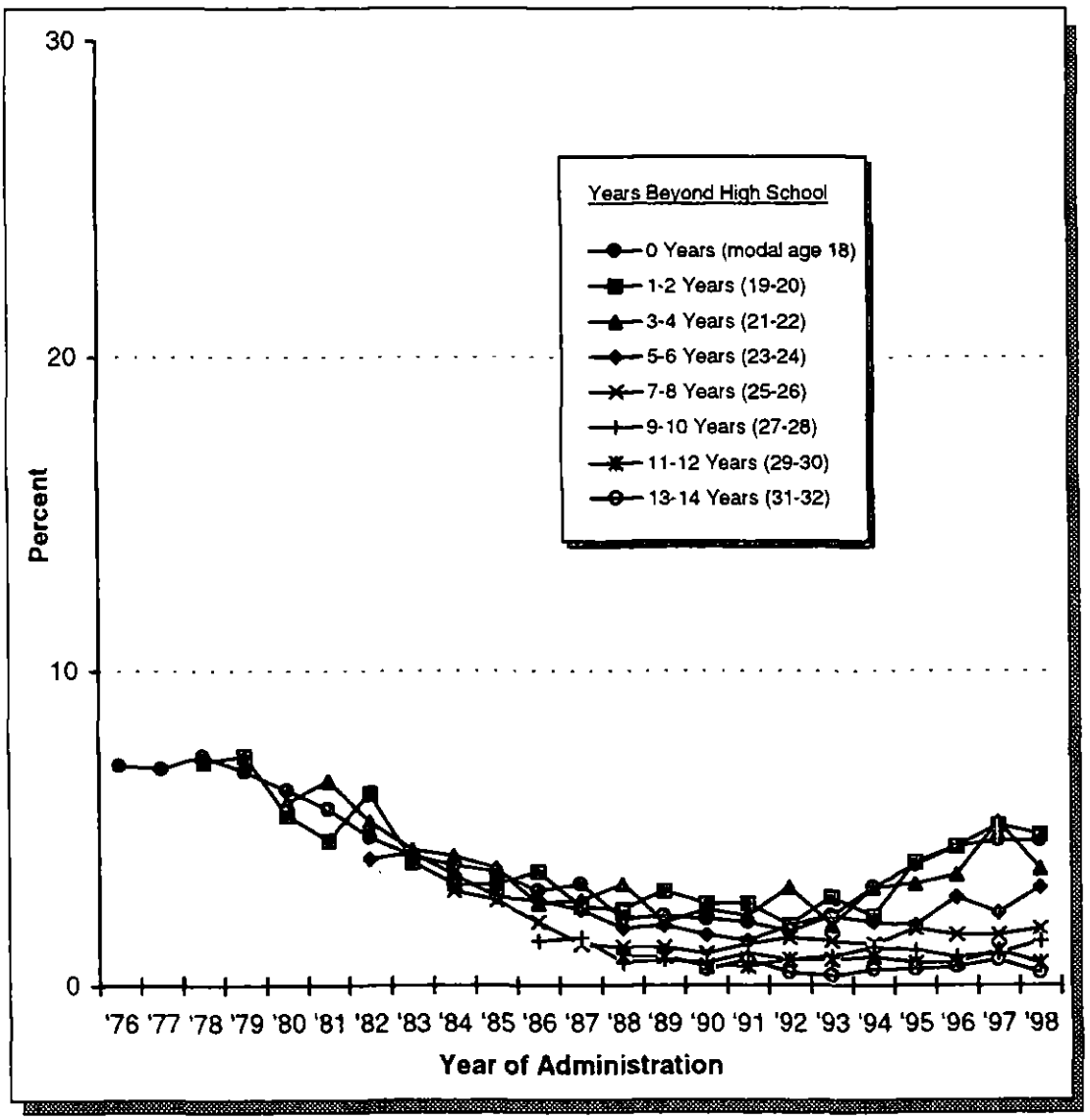
Years Post High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0
1-2 Years			9.5	10.9	9.7	8.6	9.9	7.2	6.0	5.1	6.3	5.9	5.8	5.8	6.3	6.2	6.7	6.9	6.7	9.6	10.1	9.6	8.1
3-4 Years					10.1	10.9	9.3	7.4	7.5	5.7	5.7	5.2	5.8	4.3	5.0	5.7	7.2	5.0	6.8	6.6	6.2	8.0	6.7
5-6 Years							8.1	7.4	5.4	4.9	4.6	3.7	3.8	3.8	4.4	4.4	4.2	4.7	4.3	4.9	5.4	5.0	5.2
7-8 Years									4.7	4.7	3.0	2.4	2.5	2.0	2.3	3.2	3.7	3.0	3.0	3.7	3.2	3.7	3.2
9-10 Years											2.4	2.7	1.3	1.7	1.8	2.4	2.2	2.1	2.4	2.3	2.2	1.8	2.0
11-12 Years													2.1	1.4	1.2	1.5	1.9	1.3	1.5	1.9	1.4	1.6	1.4
13-14 Years															1.0	1.3	1.2	0.9	1.0	1.3	0.9	1.6	0.9

Figure 5-6
LSD: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



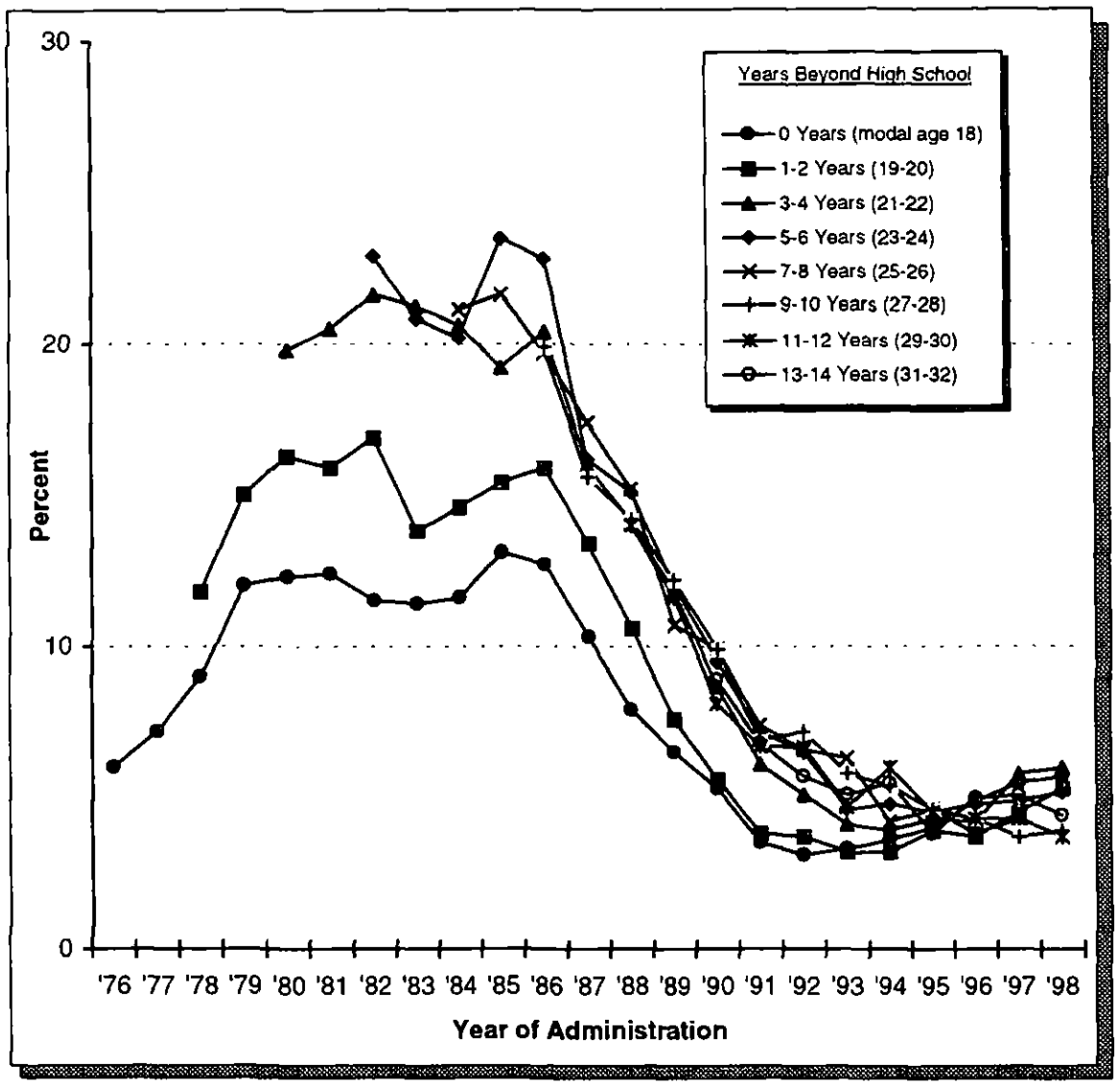
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6
1-2 Years			6.2	8.1	7.2	6.4	7.7	5.4	4.3	3.3	4.5	4.7	4.9	4.5	5.3	5.4	6.3	6.2	6.2	8.2	8.7	7.8	5.9
3-4 Years					7.9	8.0	6.9	4.9	5.1	3.3	4.4	3.7	4.2	3.2	4.0	5.0	6.0	4.3	5.7	5.5	4.9	5.5	4.4
5-6 Years							6.0	4.6	3.1	2.9	2.7	2.2	2.9	2.7	3.5	3.8	3.5	3.5	3.2	4.1	4.6	4.0	3.5
7-8 Years									2.7	2.9	1.5	1.6	1.6	1.4	1.8	2.5	3.2	2.4	2.4	2.6	2.0	2.6	2.1
9-10 Years											1.6	1.8	0.8	1.1	1.5	1.9	1.6	1.8	1.6	1.7	1.6	1.3	1.0
11-12 Years													1.5	0.8	0.8	1.0	1.4	1.0	1.0	1.4	1.0	0.8	1.0
13-14 Years															0.6	0.8	1.0	0.7	0.6	1.1	0.5	1.0	0.7

Figure 5-7
Hallucinogens Other than LSD: Trends in Annual Prevalence Among Young Adults
by Age Group



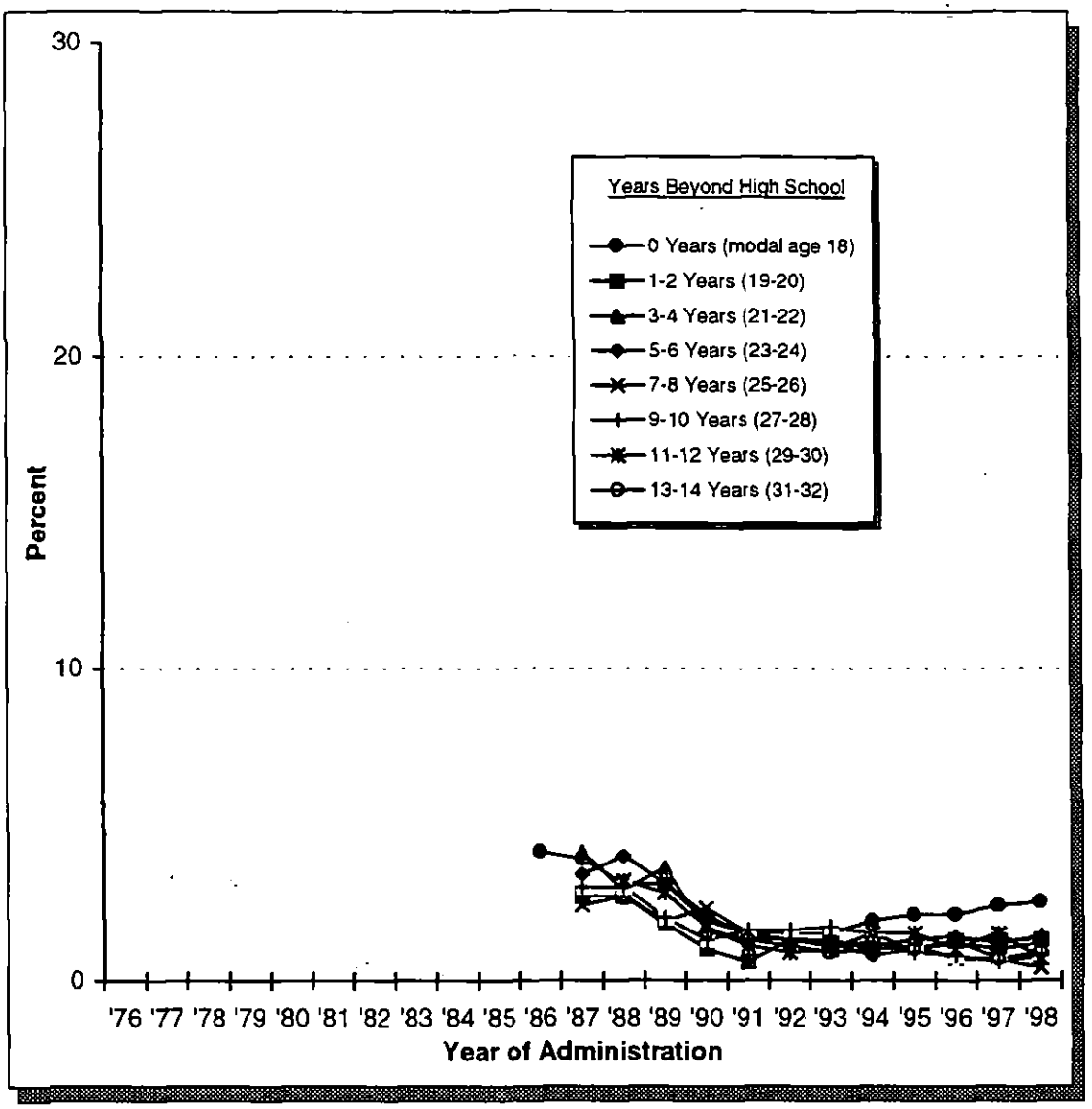
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	7.0	6.9	7.3	6.8	6.2	5.6	4.7	4.1	3.8	3.6	3.0	3.2	2.1	2.2	2.1	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6
1-2 Years			7.1	7.3	5.4	4.6	6.1	3.9	3.2	3.2	3.6	2.5	2.4	3.0	2.6	2.6	1.9	2.8	2.2	3.9	4.4	5.1	4.8
3-4 Years					5.8	6.5	5.2	4.3	4.1	3.7	2.6	2.7	3.2	2.0	2.4	2.2	3.1	1.9	3.1	3.2	3.5	5.2	3.7
5-6 Years							4.0	4.2	3.5	2.8	2.7	2.4	1.8	1.9	1.6	1.4	1.9	2.2	2.0	1.9	2.8	2.3	3.1
7-8 Years									3.0	2.7	2.0	1.3	1.2	1.2	1.0	1.3	1.5	1.4	1.3	1.8	1.6	1.6	1.8
9-10 Years											1.4	1.5	0.7	0.8	0.7	1.0	0.8	0.9	1.2	1.1	0.9	1.0	1.4
11-12 Years													0.9	0.9	0.6	0.6	0.8	0.8	0.9	0.7	0.7	1.1	0.7
13-14 Years															0.5	0.8	0.4	0.3	0.5	0.5	0.6	0.8	0.4

Figure 5-8
Cocaine: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



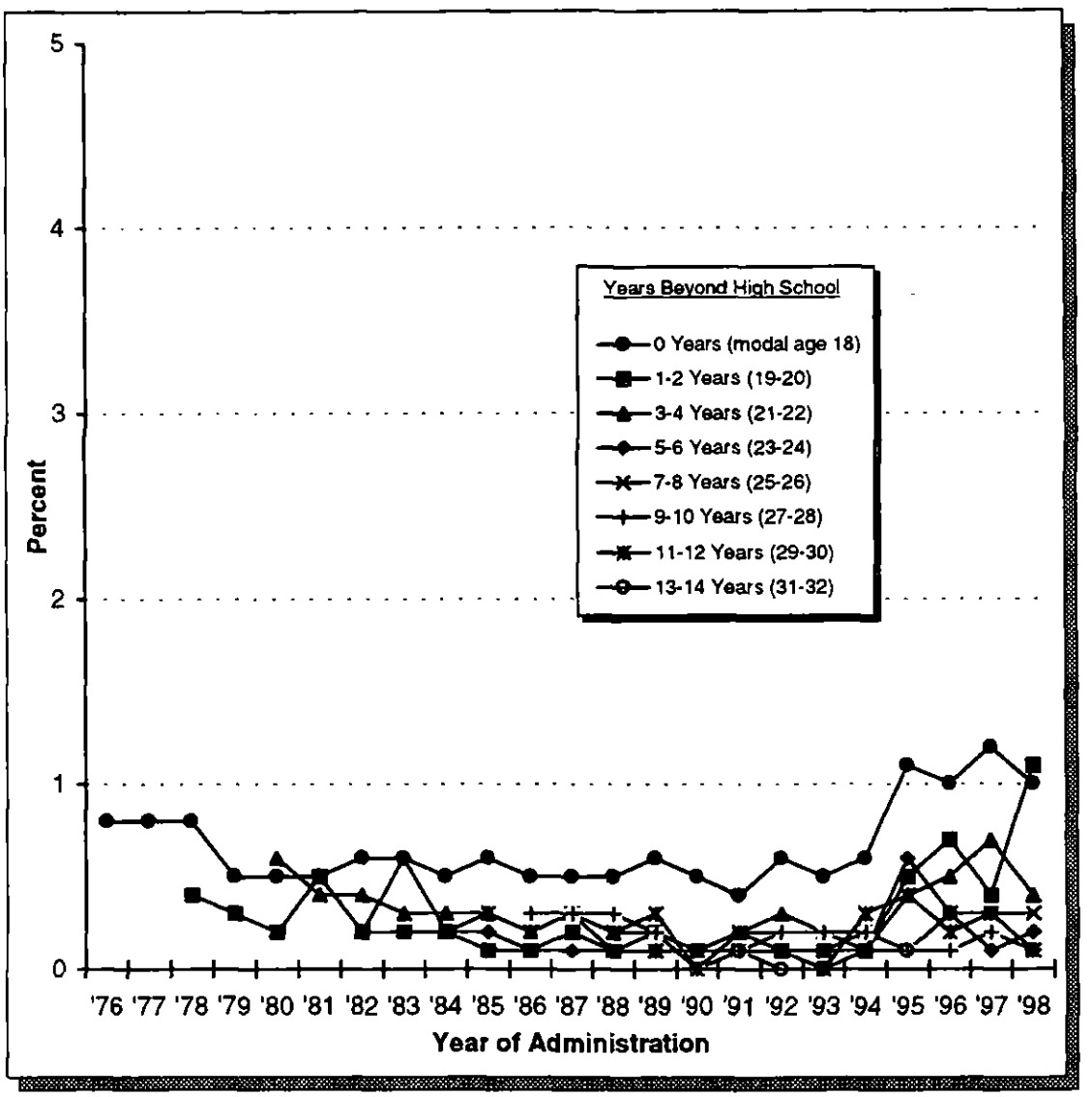
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7
1-2 Years			11.8	15.0	16.3	15.9	16.9	13.8	14.6	15.4	15.9	13.4	10.6	7.6	5.6	3.8	3.7	3.2	3.2	3.9	3.7	4.5	5.3
3-4 Years					19.8	20.5	21.6	21.2	20.6	19.2	20.4	16.0	14.1	11.8	8.7	6.1	5.1	4.1	3.9	4.3	4.2	5.8	6.0
5-6 Years							22.9	20.8	20.2	23.5	22.8	16.2	15.1	12.0	9.5	7.2	6.5	4.6	4.8	4.5	4.8	4.9	5.2
7-8 Years									21.1	21.6	19.7	17.4	15.2	10.7	9.9	7.4	6.6	6.3	4.2	4.6	3.8	4.3	3.7
9-10 Years											19.9	15.6	14.2	12.2	9.9	6.9	7.2	5.8	5.4	4.6	4.3	3.7	3.9
11-12 Years													14.0	11.6	8.1	6.7	6.7	4.7	6.0	4.5	4.3	4.3	3.7
13-14 Years															8.9	6.8	5.7	5.1	5.5	3.8	5.0	5.1	4.4

Figure 5-9
Crack Cocaine: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



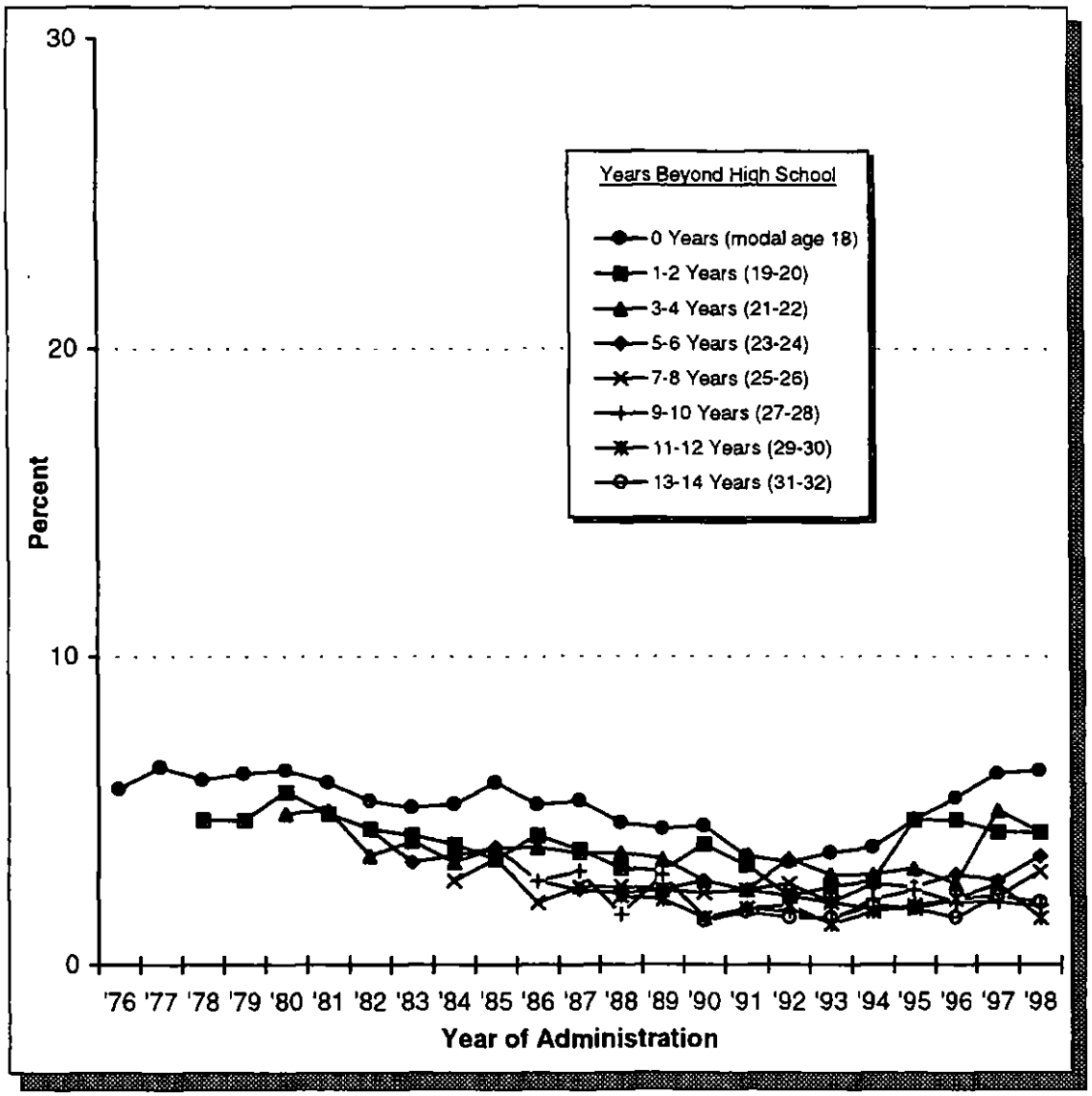
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years											4.1	3.9	3.1	3.1	1.9	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5
1-2 Years												2.7	2.7	1.8	1.0	0.6	1.3	1.2	1.2	1.0	1.3	1.3	1.3
3-4 Years												4.1	2.9	3.6	1.6	1.3	1.3	1.1	1.1	1.3	1.4	1.2	1.4
5-6 Years												3.4	4.0	3.1	2.1	1.4	1.3	1.2	0.8	1.0	1.2	1.0	1.2
7-8 Years												2.4	2.7	1.9	2.3	1.5	1.3	1.3	1.0	1.1	0.7	0.7	0.4
9-10 Years												3.0	3.0	2.0	1.3	1.6	1.6	1.7	1.5	0.9	0.8	0.6	0.8
11-12 Years													3.2	2.8	1.7	1.1	0.9	1.0	1.5	1.5	1.0	1.5	0.7
13-14 Years															1.5	1.3	1.1	0.9	1.0	1.0	1.3	0.7	0.9

Figure 5-10
Heroin: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



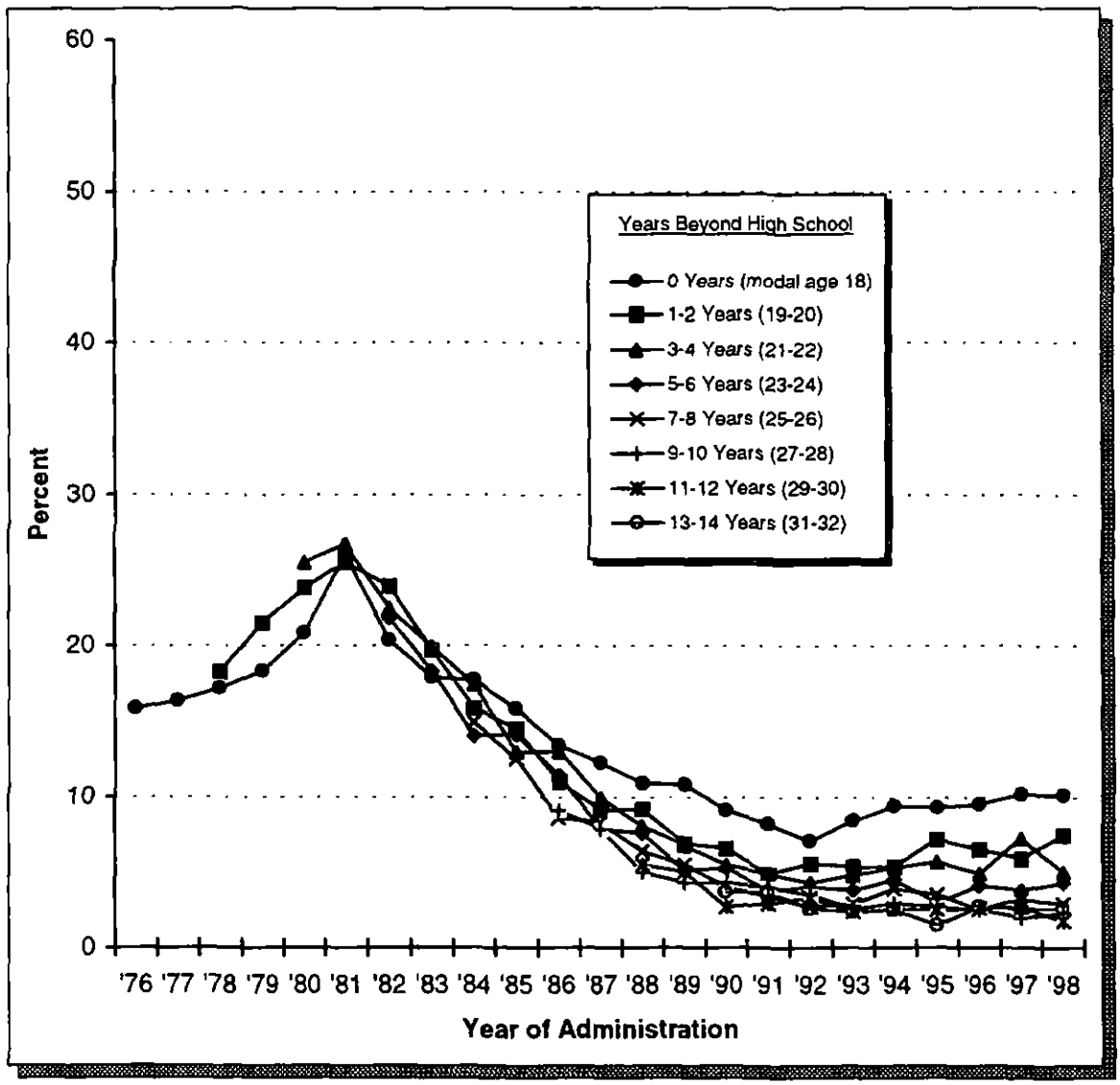
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0
1-2 Years			0.4	0.3	0.2	0.5	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.5	0.7	0.4	1.1
3-4 Years					0.6	0.4	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.4	0.5	0.7	0.4
5-6 Years							0.2	0.6	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.6	0.3	0.1	0.2
7-8 Years									0.2	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.3
9-10 Years											0.3	0.3	0.3	0.2	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1
11-12 Years													0.2	0.3	0.0	0.2	0.1	0.0	0.3	0.4	0.2	0.3	0.1
13-14 Years															0.1	0.1	0.0	0.0	0.1	0.1	0.3	0.3	0.1

Figure 5-11
Narcotics Other Than Heroin: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



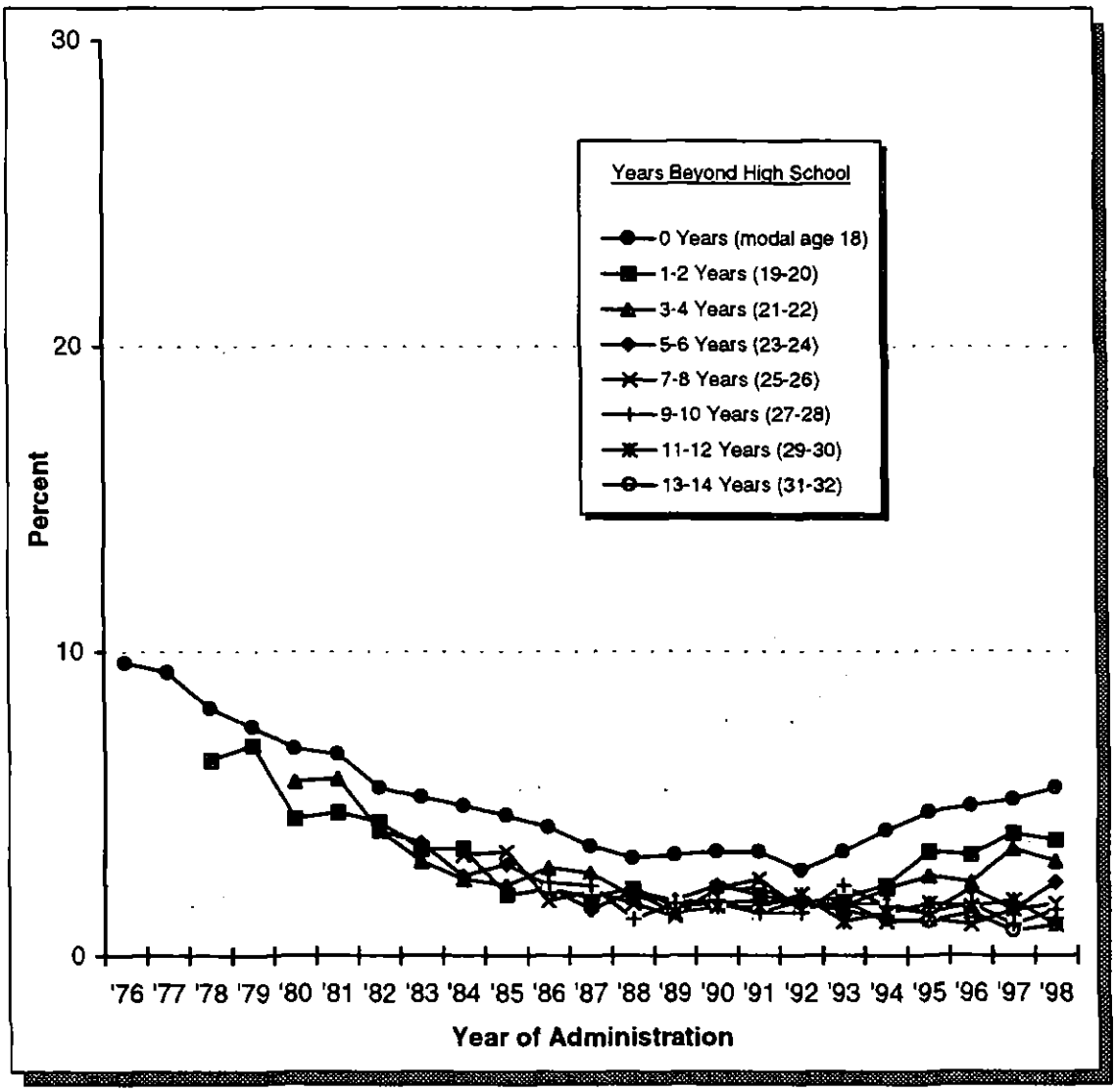
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3
1-2 Years			4.7	4.7	5.6	4.9	4.4	4.2	3.9	3.4	4.2	3.7	3.1	3.0	3.9	3.2	2.2	2.5	2.7	4.7	4.7	4.3	4.3
3-4 Years					4.9	5.0	3.5	4.0	3.3	3.8	3.8	3.6	3.6	3.4	2.7	2.4	3.4	2.9	2.9	3.1	2.6	5.0	4.3
5-6 Years							4.4	3.3	3.5	3.8	2.7	2.4	2.3	2.4	2.7	2.4	2.2	2.0	2.6	2.5	2.9	2.7	3.5
7-8 Years									2.7	3.4	2.0	2.5	2.5	2.4	2.3	2.4	2.6	2.0	1.8	1.8	2.1	2.2	3.0
9-10 Years											2.7	3.0	1.6	2.9	1.5	1.8	1.7	1.4	2.1	2.4	2.0	2.0	1.9
11-12 Years													2.2	2.1	1.5	1.8	1.9	1.3	1.7	1.9	2.1	2.6	1.5
13-14 Years															1.4	1.7	1.5	1.5	1.9	1.8	1.5	2.2	2.0

Figure 5-12
Amphetamines: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



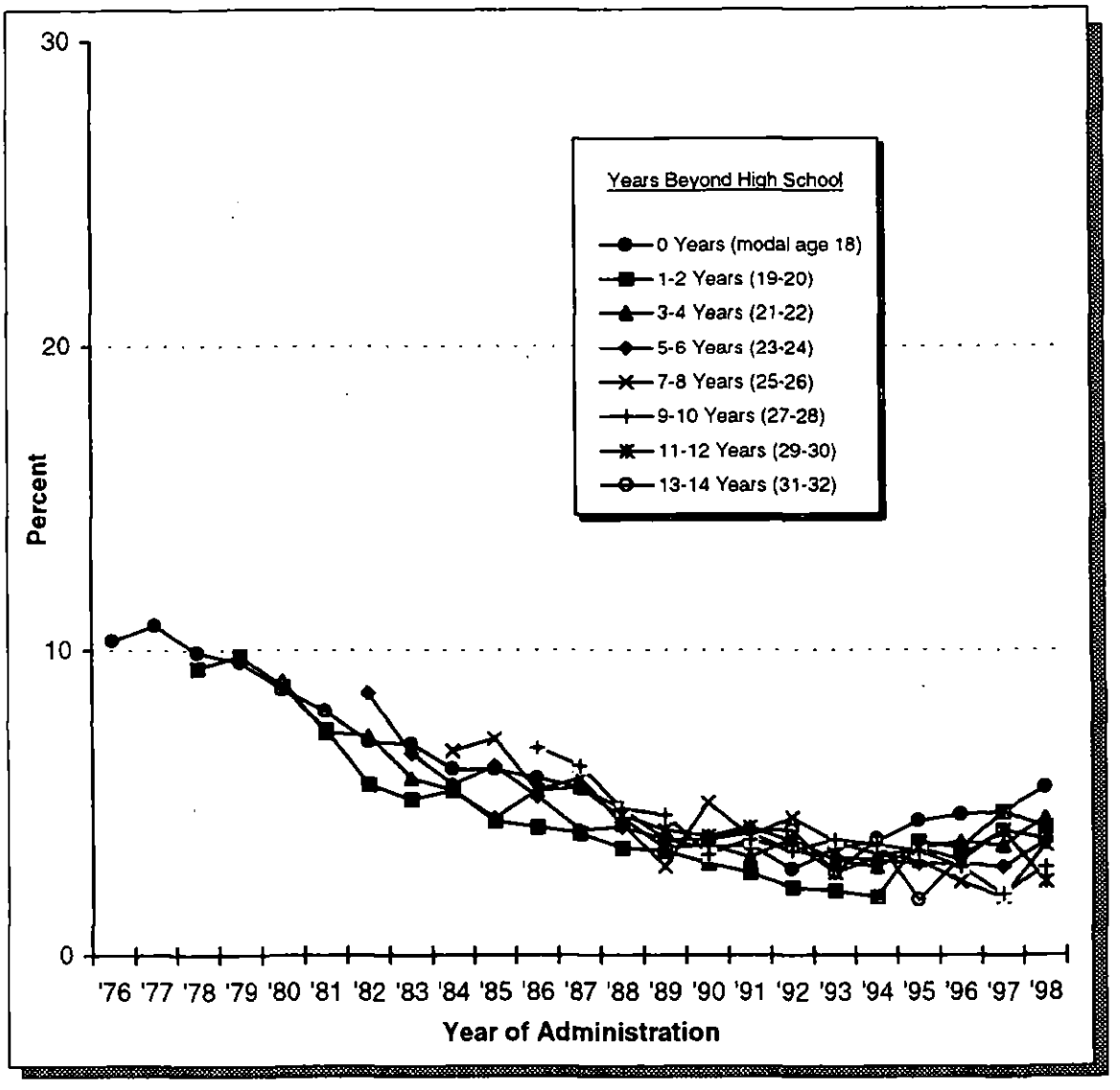
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	15.8	16.3	17.1	18.3	20.8	26.0	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1
1-2 Years			18.2	21.5	23.8	25.5	23.9	19.7	15.8	14.5	11.0	9.1	9.2	6.9	6.6	4.9	5.6	5.4	5.4	7.2	6.5	5.9	7.5
3-4 Years					25.5	26.7	22.4	19.9	17.4	13.0	13.0	9.9	8.1	6.8	5.5	4.9	4.3	4.8	5.3	5.7	4.9	7.3	5.0
5-6 Years							21.8	18.3	14.0	14.1	11.4	7.9	7.6	5.1	5.3	3.8	4.0	3.8	4.5	3.0	4.1	3.8	4.3
7-8 Years									14.9	12.5	8.6	8.3	6.4	5.5	4.0	3.4	2.7	2.9	3.9	3.5	2.5	3.2	2.9
9-10 Years											9.1	7.9	5.0	4.3	4.3	4.0	3.5	2.6	2.9	2.7	2.5	2.0	2.3
11-12 Years													5.5	5.0	2.7	2.9	3.3	2.4	2.6	2.5	2.6	2.7	1.8
13-14 Years															3.7	3.7	2.6	2.4	2.5	1.5	2.7	2.6	2.6

Figure 5-13
Barbiturates: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



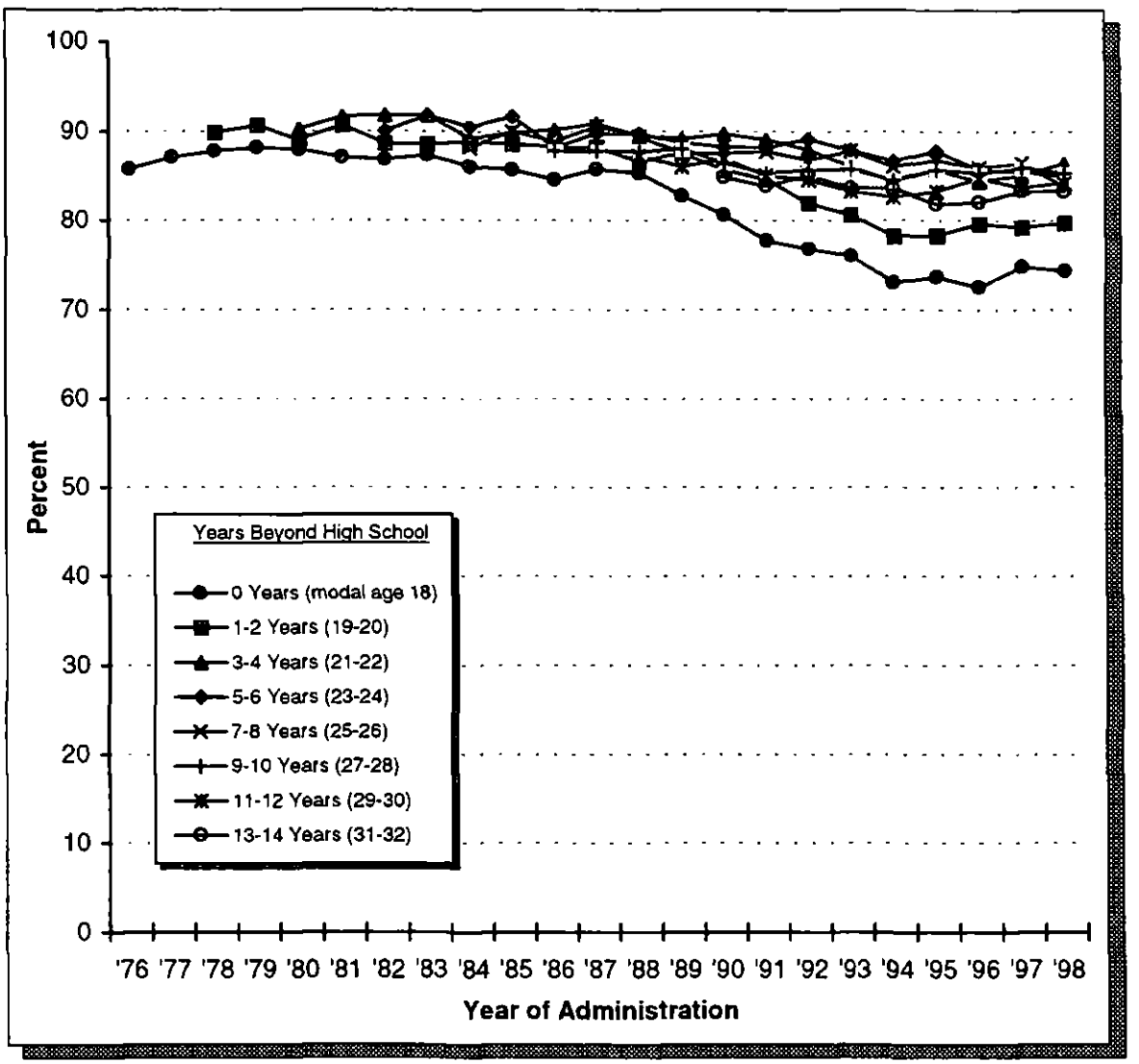
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5
1-2 Years			6.4	6.9	4.5	4.7	4.4	3.5	3.5	2.0	2.2	1.9	2.2	1.6	1.7	1.8	1.7	1.9	2.3	3.4	3.3	4.0	3.8
3-4 Years					5.7	5.8	4.1	3.1	2.5	2.3	2.9	2.7	1.9	1.8	1.7	1.4	1.8	1.6	2.2	2.6	2.4	3.5	3.1
5-6 Years							4.1	3.7	2.6	3.0	2.3	1.5	2.1	1.8	2.3	2.0	1.7	1.7	1.7	1.4	2.2	1.5	2.4
7-8 Years									3.3	3.4	1.8	2.1	1.7	1.3	2.2	2.5	1.5	1.8	1.1	1.2	1.0	1.5	1.7
9-10 Years											2.4	2.3	1.2	1.7	1.8	1.4	1.4	2.3	1.6	1.4	1.7	1.0	1.5
11-12 Years													2.1	1.4	1.6	1.6	2.0	1.1	1.4	1.7	1.6	1.8	1.0
13-14 Years															2.2	2.2	1.7	1.5	1.2	1.1	1.4	0.8	1.0

Figure 5-14
Tranquilizers: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



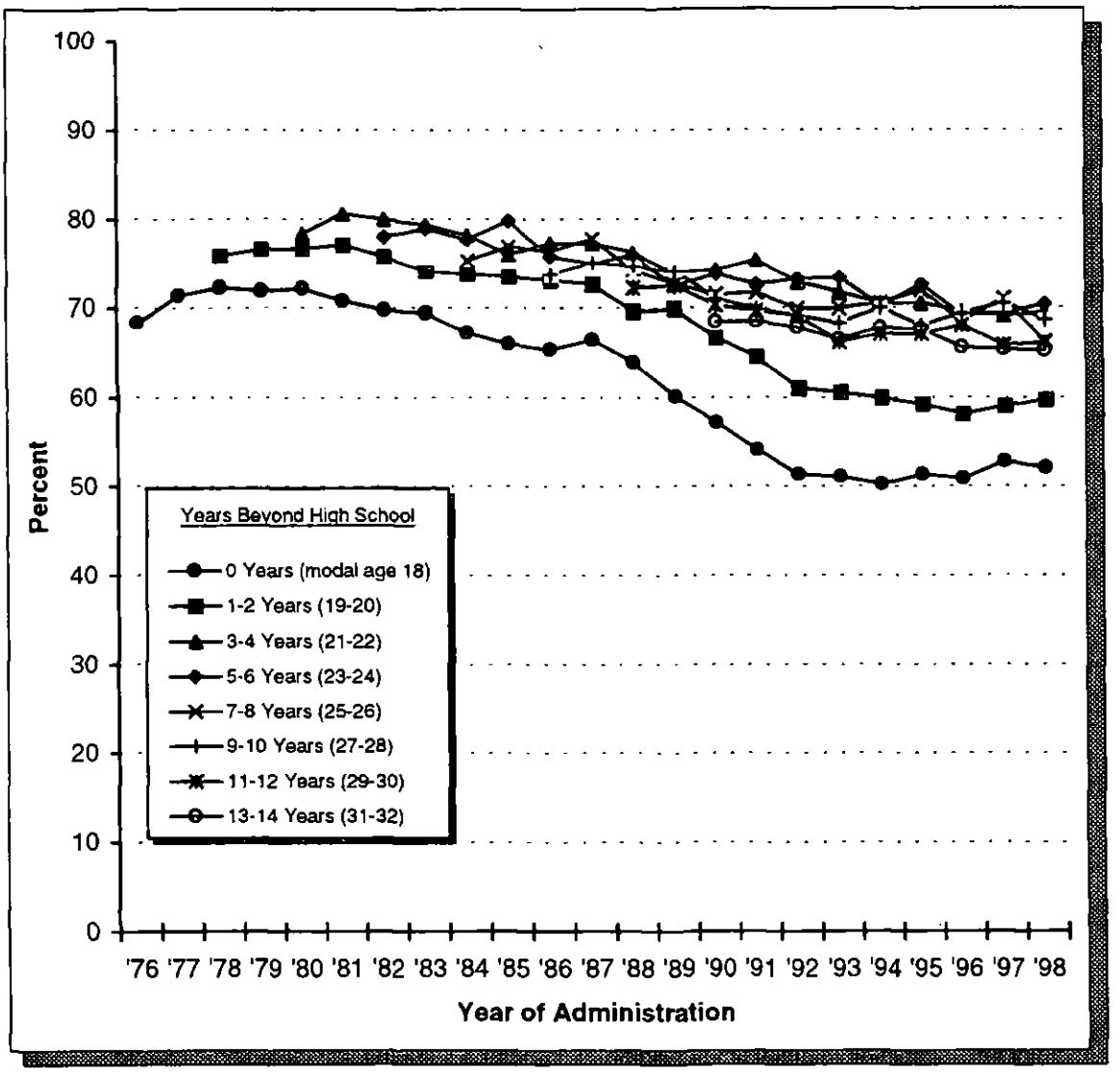
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	3.8	3.5	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5
1-2 Years			9.4	9.8	8.8	7.4	5.6	5.1	5.4	4.4	4.2	4.0	3.5	3.4	3.0	2.7	2.2	2.1	1.9	3.7	3.5	4.7	4.2
3-4 Years					9.0	7.3	7.2	5.8	5.4	4.5	5.4	5.5	4.5	3.5	3.6	3.2	3.8	3.1	2.9	3.5	3.7	3.6	4.5
5-6 Years							8.6	6.6	5.6	6.2	5.2	4.1	4.2	3.8	3.8	4.0	3.4	3.2	3.1	3.0	3.0	2.9	3.7
7-8 Years									6.7	7.1	5.4	5.8	4.3	2.9	5.0	3.9	4.5	3.7	3.3	3.1	2.4	1.9	3.6
9-10 Years											6.8	6.2	4.8	4.6	3.3	3.8	3.4	3.8	3.6	3.4	2.9	2.0	2.9
11-12 Years													4.6	4.1	3.9	4.2	3.7	2.7	3.2	3.5	3.1	4.1	2.4
13-14 Years															3.8	4.1	4.1	2.7	3.8	1.8	3.2	4.1	3.8

Figure 5-15a
Alcohol: Trends in Annual Prevalence Among High School Seniors and Young Adults
by Age Group



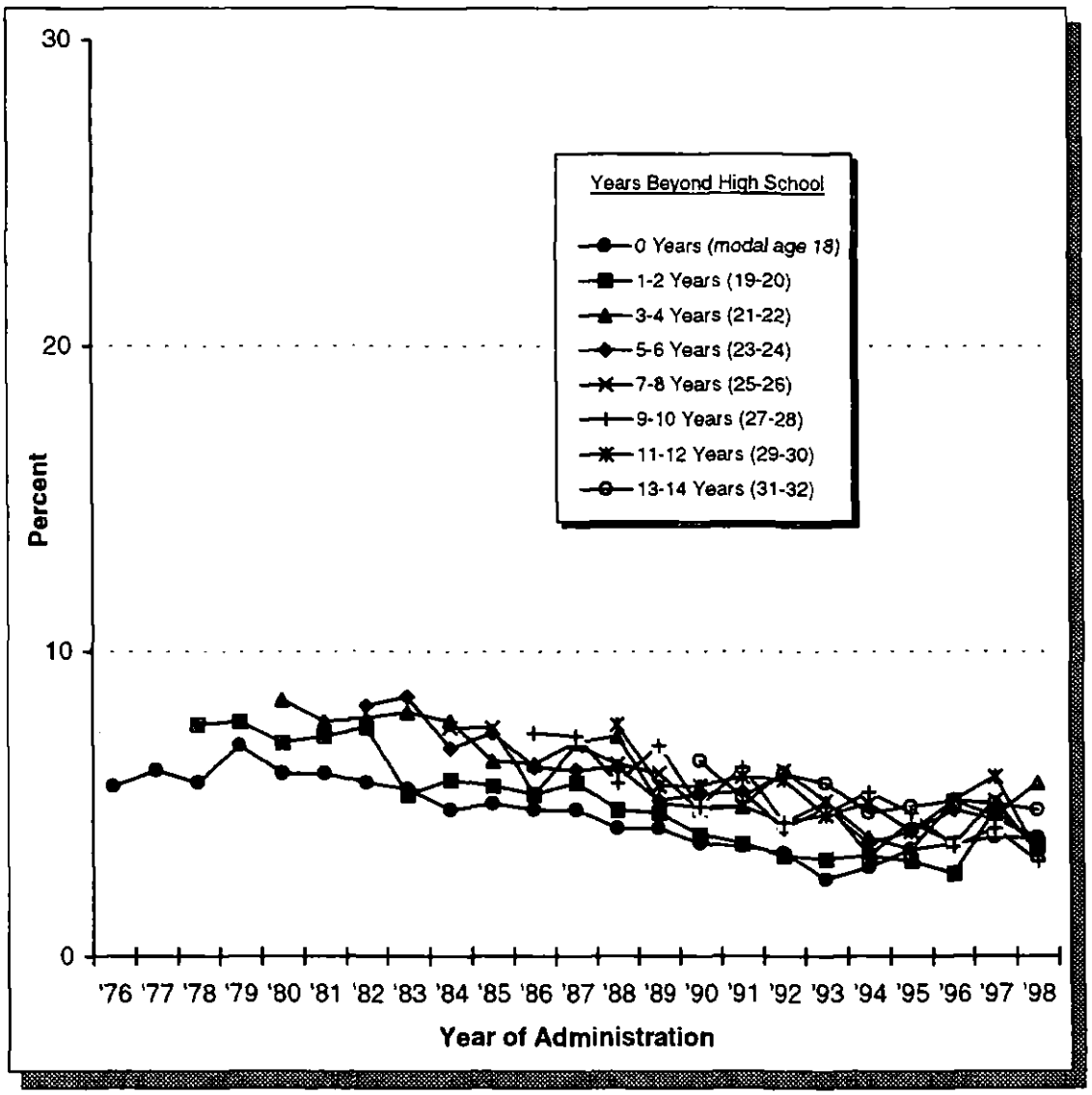
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	85.7	87.0	87.7	88.1	87.9	87.0	86.8	87.3	86.0	85.6	84.5	85.7	85.3	82.7	80.6	77.7	76.8	76.0	73.0	73.7	72.5	74.8	74.3
1-2 Years			89.8	90.6	89.0	90.6	88.6	88.5	88.7	88.5	88.2	88.2	86.6	87.5	85.6	84.6	81.9	80.6	78.2	78.3	79.6	79.2	79.7
3-4 Years					90.2	91.6	91.8	91.8	89.1	89.8	90.1	90.8	89.5	89.1	89.6	89.0	87.9	85.9	84.4	85.7	84.4	85.1	86.3
5-6 Years							90.0	91.7	90.4	91.6	88.1	89.7	89.7	88.7	88.2	88.1	89.1	87.8	86.6	87.8	85.7	85.4	84.9
7-8 Years									88.2	89.9	88.8	90.5	89.4	87.5	87.5	87.7	86.7	87.8	86.0	86.7	85.9	86.4	83.8
9-10 Years											87.8	87.8	87.7	88.0	86.4	85.3	85.6	85.7	84.5	85.7	85.3	85.9	85.3
11-12 Years													87.2	86.0	86.9	85.0	84.5	83.2	82.6	83.3	84.7	83.7	84.2
13-14 Years															84.8	83.8	85.0	83.6	83.6	81.8	82.0	83.3	83.2

Figure 5-15b
Alcohol: Trends in Thirty-Day Prevalence Among High School Seniors and Young Adults
by Age Group



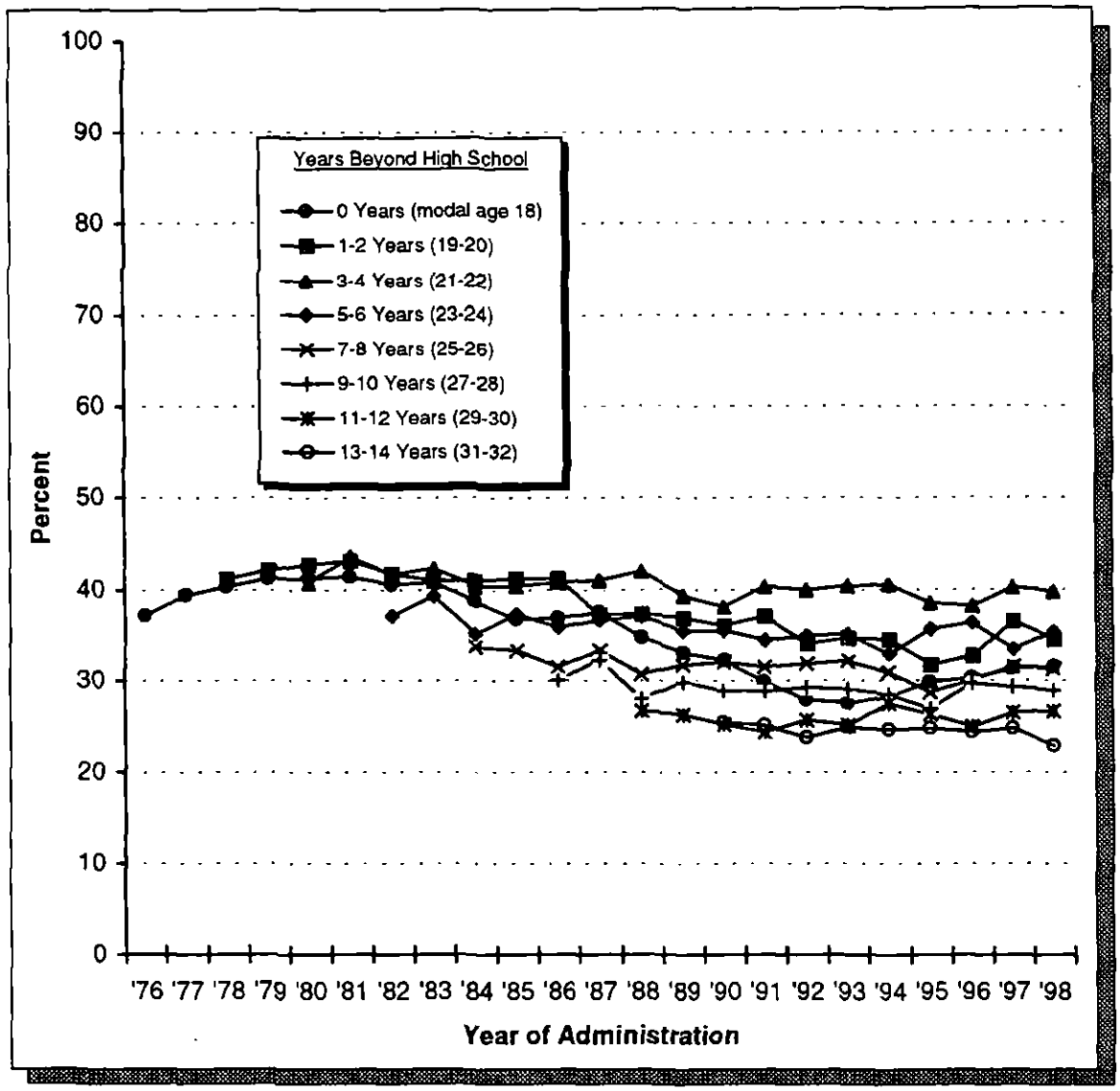
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1	54.0	51.3	51.0	50.1	51.3	50.8	52.7	52.0
1-2 Years			75.8	76.5	76.6	77.0	75.7	73.9	73.6	73.3	72.9	72.5	69.6	69.8	66.6	64.5	61.0	60.5	59.9	59.2	58.1	59.0	59.7
3-4 Years					78.3	80.5	79.9	79.3	78.1	75.9	77.2	77.2	76.2	73.8	74.1	75.3	72.7	71.6	70.4	70.4	69.5	69.1	69.4
5-6 Years							77.9	78.9	77.6	79.7	75.7	74.9	75.9	72.2	73.6	72.4	73.0	73.1	70.1	72.3	69.2	69.3	70.3
7-8 Years									75.2	76.8	76.3	77.7	74.1	72.5	71.4	71.6	69.8	69.9	70.4	71.8	68.5	70.9	66.3
9-10 Years											73.6	75.0	74.6	73.9	70.9	69.8	69.1	68.3	69.9	68.0	69.3	70.4	68.7
11-12 Years													72.1	72.3	70.2	69.6	69.2	66.2	67.0	67.0	68.0	65.8	66.1
13-14 Years															68.4	68.5	67.8	66.4	67.7	67.6	65.5	65.3	65.2

Figure 5-15c
Alcohol: Trends in Thirty-Day Prevalence of Daily Use Among High School Seniors and Young Adults
by Age Group



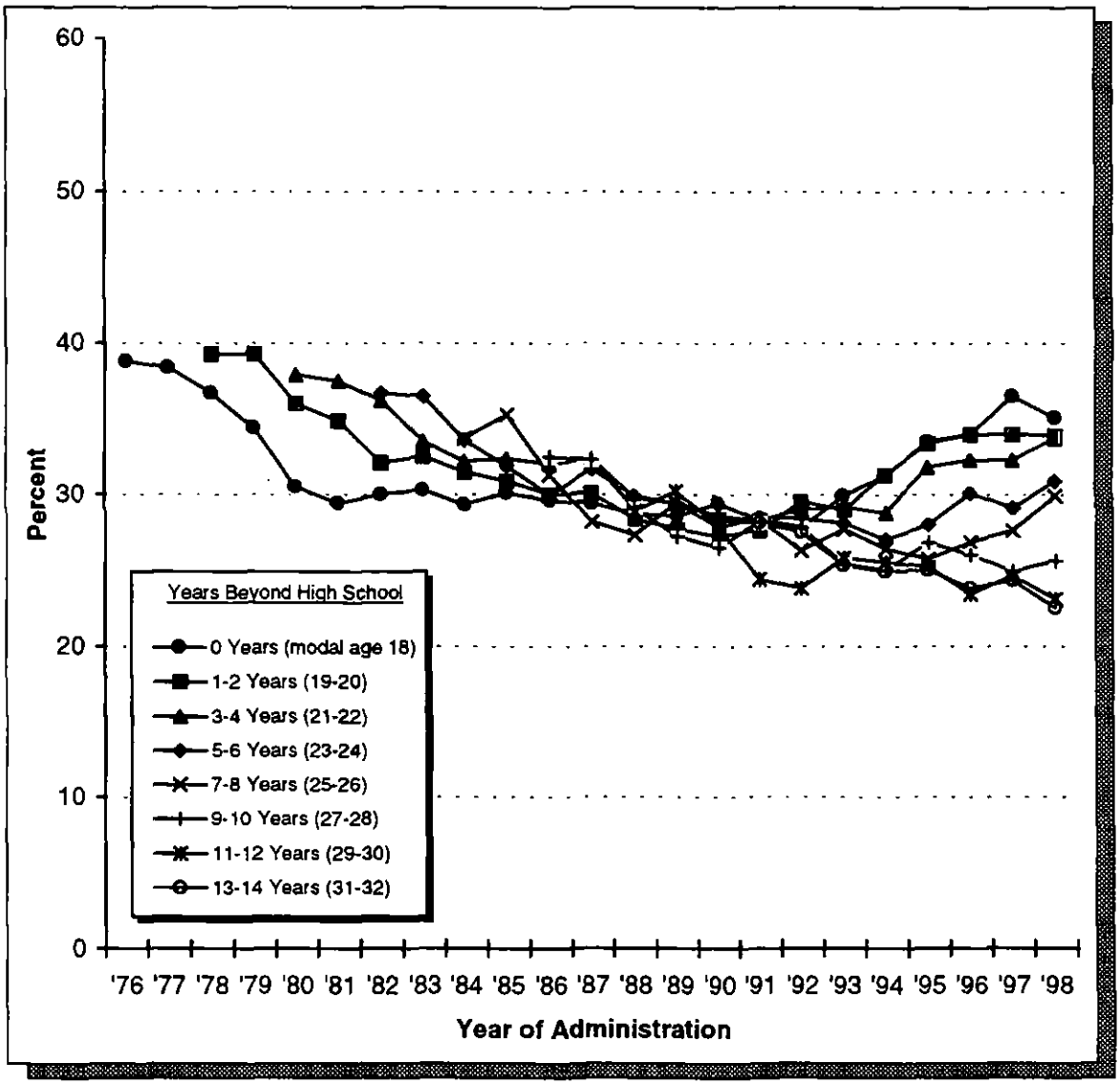
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	5.6	6.1	5.7	6.9	6.0	6.0	5.7	5.5	4.8	5.0	4.8	4.8	4.2	4.2	3.7	3.6	3.4	2.5	2.9	3.5	3.7	3.9	3.9
1-2 Years			7.6	7.7	7.0	7.2	7.5	5.3	5.8	5.6	5.3	5.7	4.8	4.7	4.0	3.7	3.3	3.2	3.3	3.1	2.7	4.8	3.6
3-4 Years					8.4	7.7	7.8	8.0	7.7	6.4	6.3	7.0	7.2	5.0	4.9	4.9	4.4	5.1	3.9	3.5	5.1	4.6	5.7
5-6 Years							8.2	8.5	6.8	7.3	6.2	6.1	6.2	5.1	5.3	5.4	4.2	4.9	3.7	4.1	4.8	4.5	3.9
7-8 Years									7.5	7.5	5.3	6.9	6.3	6.0	4.8	4.9	6.1	5.1	3.3	4.4	3.7	5.1	3.4
9-10 Years											7.3	7.2	5.7	6.9	4.9	6.2	4.4	4.7	5.4	4.7	3.6	4.2	3.1
11-12 Years													7.6	5.6	5.6	5.9	5.8	4.6	5.0	4.1	5.1	5.9	3.4
13-14 Years															6.4	5.2	6.0	5.7	4.7	4.9	5.1	5.0	4.8

Figure 5-15d
Alcohol: Trends in Two-Week Prevalence of Having Five or More Drinks in a Row at Least Once Among High School Seniors and Young Adults
by Age Group



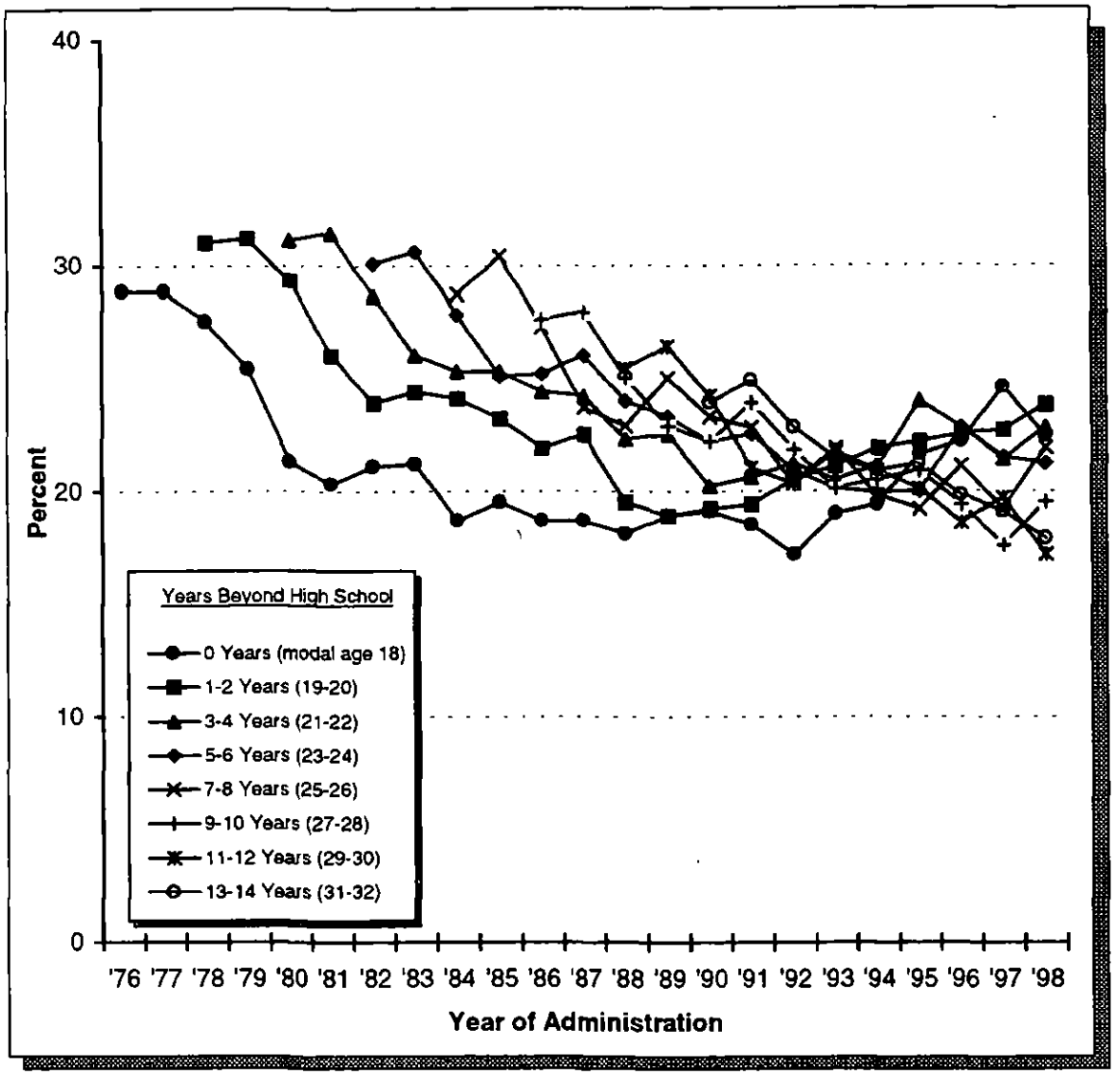
Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5
1-2 Years			41.1	42.1	42.7	43.1	41.7	40.9	41.0	41.2	41.2	37.2	37.3	36.9	36.0	37.0	34.0	34.6	34.5	31.7	32.7	36.5	34.5
3-4 Years					40.7	43.6	41.6	42.3	40.4	40.4	40.8	41.0	42.0	39.3	38.1	40.3	39.9	40.3	40.5	38.5	38.2	40.2	39.7
5-6 Years							37.1	39.3	35.1	37.3	35.8	36.6	37.0	35.4	35.5	34.4	34.9	35.0	32.9	35.6	36.3	33.4	35.3
7-8 Years									33.7	33.3	31.5	33.3	30.7	31.7	32.0	31.5	31.8	32.1	30.9	28.7	30.0	31.5	31.3
9-10 Years											30.1	32.2	28.0	29.8	28.9	28.8	29.2	29.0	28.5	26.9	29.7	29.3	28.9
11-12 Years													26.7	26.3	25.2	24.3	25.7	25.1	27.5	26.3	24.9	26.5	26.6
13-14 Years															25.4	25.1	23.7	24.8	24.6	24.7	24.3	24.7	22.8

Figure 5-16a
Cigarettes: Trends in Thirty-Day Prevalence Among High School Seniors and Young Adults
by Age Group



Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1
1-2 Years			39.3	39.3	36.0	34.9	32.1	32.5	31.5	30.9	30.0	30.1	28.4	27.7	27.2	27.6	29.5	29.0	31.3	33.4	34.0	34.0	33.9
3-4 Years					37.9	37.5	36.2	33.5	32.2	32.4	32.0	32.4	29.8	29.4	28.6	28.3	29.0	29.2	28.8	31.8	32.3	32.3	33.7
5-6 Years							36.7	36.5	33.6	31.9	29.9	31.7	29.9	29.4	27.8	28.5	28.4	28.1	27.0	28.0	30.1	29.1	30.9
7-8 Years									33.7	35.3	31.3	28.2	27.3	29.5	28.4	28.3	26.3	27.7	26.4	25.7	26.8	27.6	29.9
9-10 Years											32.5	32.3	29.1	27.2	26.5	28.2	27.8	25.4	25.0	26.8	26.0	24.9	25.6
11-12 Years													28.9	30.2	27.8	24.4	23.8	25.8	25.5	25.2	23.4	24.6	23.1
13-14 Years															28.3	28.1	27.5	25.3	24.9	25.0	23.8	24.3	22.5

Figure 5-16b
Cigarettes: Trends in Thirty-Day Prevalence of Daily Use Among High School Seniors and Young Adults
by Age Group

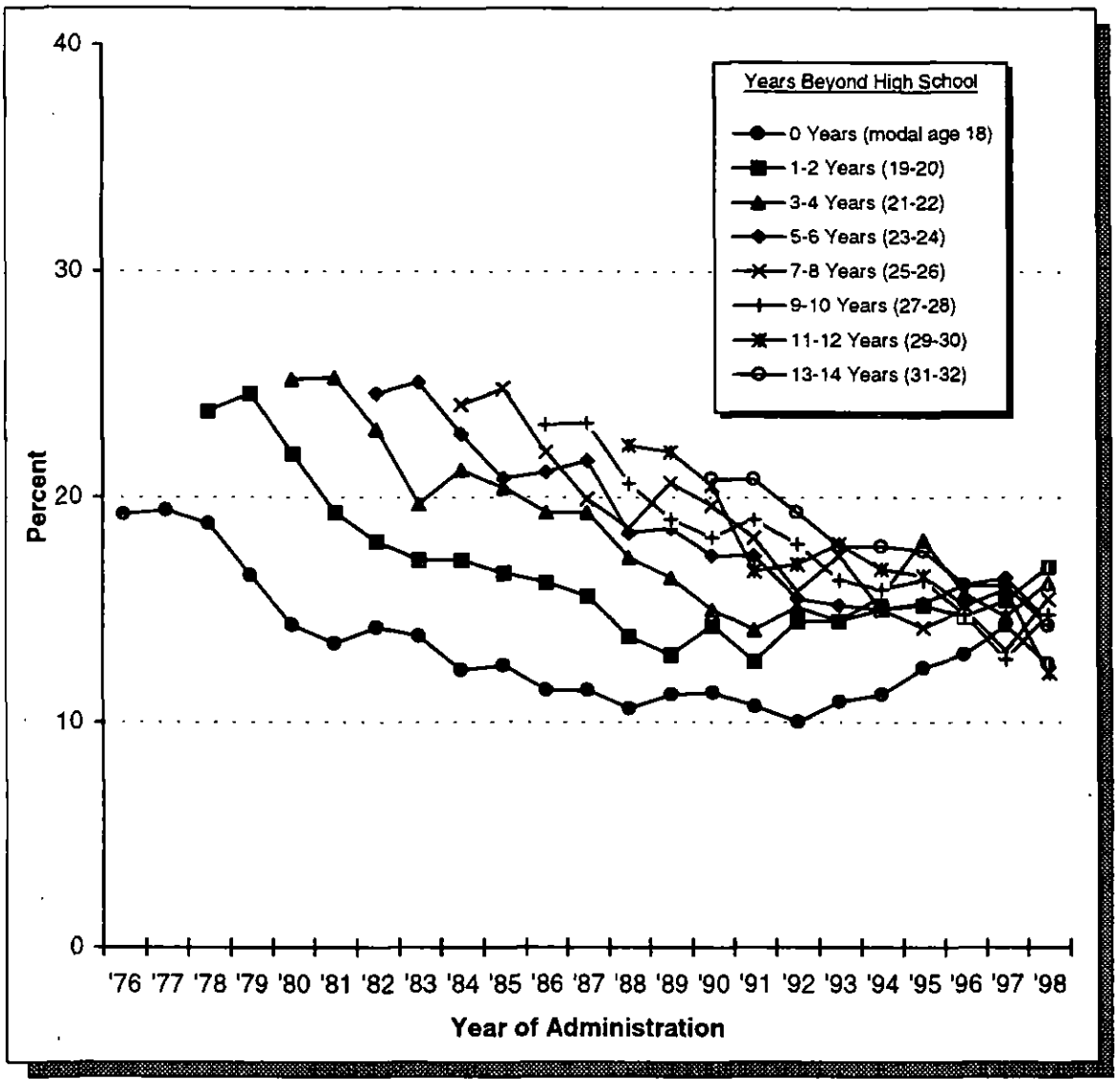


Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4
1-2 Years			31.0	31.2	29.3	26.0	23.9	24.4	24.1	23.2	21.9	22.5	19.5	18.9	19.2	19.4	20.5	21.1	21.9	22.2	22.5	22.7	23.8
3-4 Years					31.1	31.4	28.6	26.0	25.3	25.3	24.4	24.2	22.3	22.5	20.2	20.6	21.2	20.5	21.1	24.0	22.8	21.4	22.8
5-6 Years							30.1	30.6	27.8	25.1	25.2	26.0	24.0	23.3	22.2	22.5	20.9	20.1	19.9	20.0	22.8	21.5	21.2
7-8 Years									28.7	30.4	27.3	23.7	22.9	25.0	23.3	22.8	20.3	21.9	19.8	19.2	21.1	19.2	21.9
9-10 Years											27.6	27.9	25.0	22.9	22.2	23.9	21.8	20.1	20.5	20.9	19.4	17.6	19.5
11-12 Years													25.4	26.4	24.2	21.0	20.3	21.7	20.9	20.1	18.6	19.7	17.2
13-14 Years															23.9	24.9	22.8	21.4	20.9	21.2	19.8	19.1	17.9

Figure 5-16c

Cigarettes: Trends in Thirty-Day Prevalence of Smoking a Half-Pack or More Daily Among High School Seniors and Young Adults

by Age Group



Years Past High School	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
0 Years	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6
1-2 Years			23.8	24.6	21.9	19.3	18.0	17.2	17.2	16.6	16.2	15.6	13.8	13.0	14.3	12.7	14.5	14.5	15.0	15.2	14.7	15.4	16.9
3-4 Years					25.2	25.3	23.0	19.7	21.2	20.4	19.3	19.3	17.3	16.4	15.0	14.1	15.1	14.5	15.6	18.1	15.7	14.7	16.2
5-6 Years							24.6	25.1	22.8	20.8	21.1	21.6	18.4	18.6	17.4	17.4	15.5	15.2	15.0	15.3	16.1	16.4	14.5
7-8 Years									24.1	24.8	22.0	19.9	18.6	20.6	19.6	18.2	15.8	17.4	15.0	14.2	15.0	13.2	15.5
9-10 Years											23.2	23.3	20.6	19.0	18.2	19.0	17.9	16.3	15.9	16.3	14.8	12.8	14.8
11-12 Years													22.3	22.0	20.5	16.7	17.0	17.9	16.8	16.5	15.2	15.9	12.2
13-14 Years															20.8	20.8	19.3	17.8	17.8	17.6	16.1	16.1	14.3

Chapter 6

ATTITUDES AND BELIEFS ABOUT DRUGS AMONG YOUNG ADULTS

Over the past twenty or so years we have observed substantial changes in twelfth graders' attitudes and beliefs about the use of drugs, in particular the perceived risk of harm associated with marijuana and cocaine, and personal disapproval of use of marijuana, cocaine, and amphetamines. Further, the importance of these shifts in attitudes and beliefs in explaining changes in actual drug-using behavior has been demonstrated in earlier volumes in this series and elsewhere.[24] In this chapter we review trends since 1980 in the same attitudes and beliefs among young adults.

PERCEIVED HARMFULNESS OF DRUGS

Table 6-1 provides trends in the perceived risks associated with differing usage levels of various licit and illicit drugs. These questions are contained in one questionnaire form only, limiting the numbers of follow-up cases; accordingly, we use four-year age bands in order to increase the available sample size (to about 400-600 weighted cases per year for each age band) and thus, to improve the reliability of the estimates. (The actual case counts are given at the end of Table 6-1.) Still, these are small sample sizes compared to those available for eighth, tenth, and twelfth graders, so the change estimates are more labile. Because of the nature of the Monitoring the Future design, trend data are available for a longer period for 19 to 22 year olds (since 1980) than for 23 to 26 year olds (since 1984), or for 27 to 30 year olds (since 1988). Also displayed in this table are comparison data for twelfth graders, shown here as 18 year olds, for 1980 onward.

Beliefs About Harmfulness Among Young Adults

- Table 6-1 illustrates considerable differences in the degree of risk young adults associate with various drugs. In general, the results closely parallel those observed among seniors.

- ***Marijuana*** is seen as the least risky of the illicitly used drugs, although sharp distinctions are made between different levels of use. In 1998, experimental use is perceived as being of "great risk" by only 13%-17% of high school

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[24]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). Frequent marijuana use: Correlates, possible effects, and reasons for using and quitting. In R. deSilva, R. Dupont, & G. Russell (Eds.), *Treating the Marijuana Dependent Person* (pp. 8-14). 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, pp. 155-177). (DHHS Publication No. (ADM) 85-1335). Washington, DC: U.S. Government Printing Office.

graduates (in the age band 19 to 30), whereas regular use is perceived to be that risky by over half (53%-64%) of them.

It is interesting to note that in the mid-1980s and early 1990s fewer of the older age groups attached great risk to marijuana use, particularly to experimental and occasional use, than the younger age bands. Indeed, there was a quite regular negative ordinal relationship between age and perceived risk for some years. This could have reflected an age effect, but we interpreted it as a cohort effect: the younger cohorts initially perceived marijuana as more dangerous than the older cohorts and persisted in this belief as they grew older. Newer cohorts however, have become more relaxed in their attitudes—1998 high school seniors are less likely to perceive marijuana use as dangerous than did high school seniors in the late 1980s and early 1990s, reflecting what we have called "generational forgetting," a phenomenon wherein younger replacement cohorts no longer carry the knowledge, and perhaps the direct or vicarious experience on which the knowledge is based, that the older cohorts had when they were that age. This recent change of beliefs had been happening primarily in the younger age bands (grades 8, 10, and 12), not among the older age bands (college students and young adults). In 1995, the 19 to 22 year olds had a significant drop in perceived risk of experimental and occasional marijuana use and in 1998 this same age group declined significantly for risk of regular marijuana use. We think this is a direct result of generational replacement of older cohorts by the more recent, less concerned ones. In fact, the relationship between perceived risk and age reversed by 1995 and this trend continues in 1998. Now, the older the respondents, the more likely they are to see marijuana as dangerous. In 1998, 59% of seniors and 53% of the 19 to 22 year olds thought regular marijuana use carried great risk vs. 63% of the 23 to 26 year olds and 64% of the 27 to 30 year olds. This reversal of the relationship with age is consistent with an underlying cohort effect and inconsistent with the notion of a regular change in these attitudes being associated with age (i.e., an "age effect").

- Use of any of the other illicit drugs is seen as distinctly more risky than marijuana. Even the experimental use of ***amphetamines*** and ***barbiturates*** is perceived as risky by about 28%-41% of young adults aged 19 to 30, and 39%-52% think trying ***LSD*** or ***MDMA*** (ecstasy) involves great risk. Trying ***cocaine powder*** is seen as dangerous by 50%-54%, while using ***crack*** or ***heroin*** once or twice is seen as dangerous by 59%-70%.

- In recent years, the older age groups have been more likely than the younger age groups to see ***LSD*** and ***barbiturates*** as dangerous. The age distinctions for LSD and barbiturates have become sharper in recent years as perceived risk has declined more in the younger age groups than the older ones—again indicating some important cohort changes in these attitudes.

- There are modest age-related differences with respect to ***cocaine*** use; the young adults report somewhat higher risk than the high school seniors, who have had less experience with cocaine. The same is also true for ***crack***, for which perceived risk is considerably lower in the two younger age bands than in the two older ones.

- Questions about perceived risk of ***crystal methamphetamine*** (ice) use were introduced in 1990, and the results show what may be an important reason for its lack of rapid spread. More than half of all seniors and young adults perceive it as a quite dangerous drug, perhaps because it was likened to crack in many media accounts. Both drugs are burned and the fumes inhaled, both are stimulants, and both can produce a strong dependence. There is rather little difference in these attitudes by age. At present the risk associated with the use of ice increases with age band, but the opposite was true as recently as 1992—again suggesting cohort effects.

- ***MDMA*** (ecstasy) questions were introduced in 1989, and were not asked of seniors until 1997. Young adults see it as a fairly dangerous drug, even for experimentation; between 43% and 50% say there is "great risk" involved in 1998. This puts it close to cocaine powder in its level of perceived risk. Fewer seniors find it to be risky (35%).

- As was true for high school seniors, only a minority of the young adults see ***heavy drinking on weekends*** as dangerous (40%-42%); however, about three-fourths of young adults (and almost two-thirds of seniors) feel that way about ***daily heavy drinking***.

- More than three-quarters (77%-81%) of the young adults perceive regular ***pack-a-day cigarette smoking*** as entailing high risk, higher than the 71% of seniors who hold that belief and much higher than the 54% of eighth graders who do so. Unfortunately, an understanding of the risks comes too late for many who have initiated use (and often heavy use) in their teen years.

- The use of ***smokeless tobacco*** is seen as dangerous by 47%-53% of young adults and by even fewer seniors (41%).

Trends in Perceived Harmfulness Among Young Adults

- Nearly all of the important trends observed among seniors in perceived harmfulness can also be seen among young adults. (See Table 6-1.)

- The long-term increase in the perceived risk of regular ***marijuana*** use documented among seniors between 1980 and 1989 also occurred among young adults. The proportion of 19 to 22 year olds reporting "great risk" rose dramatically from 44% in 1980 (the first data point available) to 75% in 1989.

Among seniors, the shift over the same interval was from 50% to 78%. (Daily marijuana use dropped appreciably during this time in all of these age groups.) In 1992, however, the perceived dangers of regular marijuana use began to decline among seniors, 19 to 22 year olds, and 23 to 26 year olds. These declines ended in 1997 for the seniors, but continued through 1998 for the 19 to 22 year olds, no doubt because of a cohort effect. For the 19 to 22 year olds, perceived risk is at its lowest point since the early 1980s.

Since 1991, the younger the age group, the larger the decline in perceived risk. This resulted in the reversal of the relationship between perceived risk and age, discussed above.

- In general, young adults have been more cautious about ***heroin*** use than high school seniors. Among the seniors, there had been a downward shift from 1975 to 1986 in the proportion seeing great risk associated with trying heroin; then there was a sharp upturn in 1987, followed by a leveling through 1991, in turn followed by some fall off in the early 1990s before an increase beginning in 1996. Young adults, although their data do not extend back as far, also seem to have shown an increased caution about heroin use in the latter half of the 1980s, followed by a leveling in the 1990s. In 1996 and 1997, young adults' perceived risk increased some, as happened among the twelfth graders (as well as among the eighth and tenth graders). These various trends may reflect, respectively, (a) the lesser attention paid to heroin by the media during the late seventies and early eighties; (b) the subsequent great increase in attention paid to intravenous heroin use in the latter half of the 1980s because of its important role in the spread of AIDS; (c) the emergence in the 1990s of heroin so pure that people no longer needed to use a needle to administer it, resulting in lower perceived risk; and (d) the more recent 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 an anti-heroin campaign in the media launched by the Partnership for a Drug Free America in June, 1996.

- Among seniors and the young adult age groups, the danger associated with ***cocaine*** use on a regular basis grew considerably between 1980 and 1986. However, 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 see only these lower levels of use as relevant to them. (Nobody starts out planning to be a heavy user; further, cocaine was not believed to be addictive in the early 1980s.) 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 which occurred later that year, largely in response to the growing media frenzy about cocaine and crack cocaine, in particular, and the widely

publicized, cocaine-related deaths of Len Bias and others. After stabilizing for a few years, perceived risk began to fall off among seniors after about 1991, but not among the older age groups, once again suggesting lasting cohort differences were emerging. A decline began among the 19 to 22 year olds starting in 1994, likely as the result of generational replacement with the high school seniors who earlier had come to see cocaine as less dangerous. No such decline is so far observable in the two upper age strata.

- Trend data (available since 1987) on the risks perceived to be associated with use of ***crack*** show increases in the 1987 to 1990 interval for all age groups, followed by relatively little change in the older two age strata.

  Since 1992, the seniors have shown decreases in the perceived risk of experimental or occasional use of crack—perhaps reflecting the onset of "generational forgetting"—leaving them as perceiving considerably less risk than the other age groups. After 1994, the 19 to 22 year olds also showed a decline on these two measures, once again probably as the result of generational replacement.

- Perceived risk of harm from ***occasional heavy drinking*** (that is, having five or more drinks once or twice each weekend) increased among twelfth graders from 36% in 1980 to 49% in 1992; it has since declined to 43% in 1998. The older groups have shown smaller changes, though all increased slightly between 1988 and 1992 (by 2 to 5 percentage points), and then held fairly steady through 1998.

  Self-reported rates of occasional heavy drinking among twelfth graders shifted in ways corresponding to shifts in perceived risk over the longer term from 1980 to 1998. Similarly, the changes in perceived risk between 1988 and 1998 among the older groups have been accompanied by reciprocal changes in use.

- In the late 1980s and early 1990s, the data available from the young adult samples showed a modest increase in the proportions associating great risk with regular ***cigarette smoking***. For example, over the nine-year interval from 1984 to 1993, twelfth graders, 19 to 22 year olds, and 23 to 26 year olds all showed an increase of 6 or 7 percentage points in the proportion seeing great risk in pack-a-day smoking. After that, there was a slight dip in these three age groups in perceived risk, followed by some increase since 1996.

  The parallel changes in these beliefs across the different age groups are suggestive of a period effect, rather than a cohort effect, suggesting that all of these age groups were responding to common influences in the larger culture.

In recent years, the 18 year olds have consistently shown lower perceived risk than young adults, while tenth graders are lower still, and eighth 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 occurs after the proverbial "horse is out of the barn" and many young people already have become addicted.

- The perceived dangers of ***smokeless tobacco*** also have tended to be positively correlated with age (at least for age 18 and older). Since 1986 (when questions about smokeless tobacco were first included), there has been a substantial increase in perceived risk among twelfth graders and also among all three strata of young adults. For seniors, virtually all of the increase had occurred by 1991, but for the older age strata it continued.

PERSONAL DISAPPROVAL OF DRUG USE

The questions asked of high school seniors concerning the extent to which they personally disapprove of various drug-using behaviors also are asked of follow-up respondents, in one of the six questionnaire forms. Trends in the answers of young adults aged 19 to 22, 23 to 26, and 27 to 30 are contained in Table 6-2. Comparison data for twelfth graders are also provided for 1980 onward. (See also Table 8-4 in Chapter 8 of Volume I, for the longer-term trends in high school seniors' attitudes and beliefs about drugs.)

Extent of Disapproval by Young Adults

- In general, the attitudes of young adults related to the various drug-using behaviors, both licit and illicit, are highly similar to those held by twelfth graders. This means that the great majority disapprove of using, or even experimenting with, all of the ***illicit drugs other than marijuana***. For example, regular use of each of the following drugs is disapproved by 96% or more of young adults: ***LSD, cocaine, amphetamines, barbiturates,*** and ***heroin***. Even experimentation with each of these drugs is disapproved by 81% to 96% of the young adults. These attitudes seem to differ rather little as a function of age, at present.

- Even for ***marijuana***, more than half of young adults now disapprove of experimentation, between 68% and 72% disapprove of occasional use, and approximately 85% to 89% disapprove of regular use.

- Rates of disapproval for the various patterns of ***alcohol*** use listed on Table 6-2 are quite close to those observed among seniors. (Seniors are more likely to disapprove of experimentation: 25% for seniors vs. 15% to 22% for the three older groups.) Disapproval of simply trying alcohol is low in all age

groups, but it gets lower as one moves up the age spectrum, as has been true for some years.

- Disapproval for ***cigarette smoking*** at the rate of a pack or more per day is now lower among seniors than among young adults; but prior to 1993, that was not the case (see Table 6-2).

Trends in Disapproval by Young Adults

Prior to 1991, some important changes occurred in American young adults' attitudes, with a declining proportion finding the use of various drugs acceptable, even for adult use. However, since 1990, there has been little further systematic change in these attitudes. The rates of disapproval have remained fairly constant (in many cases at very high levels) and generally have not reversed, even though such a reversal did occur among secondary school students (see Volume I). The major exception occurs for the 19 to 22 year olds, where drops in disapproval of ***marijuana*** and ***alcohol*** use occurred for the first time in 1995 and have continued through 1998, no doubt as a result of generational replacement.

- Prior to 1991, the largest upward shift in disapproval occurred for ***marijuana***. The proportion of 19 to 22 year olds disapproving even experimentation with marijuana rose from 38% in 1980 to 60% in 1990. It was at its highest, 64%, in 1994 and declined to 56% by 1998. Although data are available for a shorter period for the 23 to 26 year olds, this group also showed the earlier increase in disapproval of experimenting with marijuana—from 41% in 1984 to 59% in 1991. Since then, disapproval rates for this age group declined only a bit to 55% by 1998. High school seniors showed a sharp decline in disapproval after 1992.

- Between about 1990 and 1996, there was some decline in disapproval of ***LSD*** use among seniors and 19 to 22 year olds, with less decline among 23 to 26 and 27 to 30 year olds. After 1996, disapproval began to rise among seniors, but showed some further decline among the 19 to 22 year olds—perhaps reflecting some cohort effect.

- Most of the disapproval statistics for ***heroin*** use, at all three levels of use, have remained very high and stable throughout the life of the study. There has, however, been a little slippage in heroin disapproval rates during the 1990s among seniors, through 1996.

- Among the 19 to 22 year olds, disapproval of regular ***cocaine*** use rose gradually from 92% in 1982 to 99% in 1990, where it has remained since (98% in 1998). All three young adult age bands (but not seniors) are now near the ceiling of 100%. Young adults 19 to 22, like seniors, showed a sizeable increase in their disapproval of *experimental* use of cocaine, with the proportion disapproving rising from 70% in 1982 to 94% by 1994.

Disapproval also rose among 23 to 26 year olds—from 70% in 1984 (when data were first available) to 92 % by 1995. Among seniors, there was some fall-off in disapproval, from 94% in 1991 to 88% by 1997. Among 19 to 26 year olds, a small fall-off began after 1995. Again, the lag in inflection points between seniors and 19 to 22 year olds suggests some lasting cohort differences in these attitudes.

- There were significant increases in disapproval of experimental use of ***amphetamines*** and ***barbiturates*** during the 1980s. Trying amphetamines once or twice was disapproved by 73%-74% of 19 to 26 year olds in 1984, compared to 84% by 1990, and the corresponding figures for trying barbiturates were 84%-85% in 1984 compared to 89%-91% by 1990. Since then, disapproval of amphetamine and barbiturate use slipped some among seniors after 1992, and among 19 to 22 year olds after 1994, with the 23-26 year olds following suit in 1996.

- The story for ***alcohol*** has become quite complicated. Between 1980 and 1992, an increasing proportion of high school seniors favored total abstention, with the percent disapproving even drinking once or twice rising from 16% in 1980 to 33% in 1992. (This figure has fallen back some, to 25% by 1998.) Among 19 to 22 year olds, there was a modest increase from 15% to 22% disapproving between 1985 and 1989, with no discernible trend since then. For the two oldest age groups, there has been little change in these attitudes. These differing trends may reflect the fact that the drinking age in all states was raised to age 21, mostly during the period 1984 to 1987; this would have the greatest effect on seniors, who may be incorporating the legal restrictions into their normative structure, and as they enter the second age band, bring these new norms with them. Put another way, these changes could reflect a cohort effect resulting from the laws that were prevailing when the cohort passed through late adolescence.

  Daily drinking (of one or two drinks) became more disapproved in the three youngest age bands (seniors through 26 year olds) until about 1990, but disapproval has declined some since then. There was a considerable increase in disapproval of ***occasional heavy drinking*** from the early 1980s for the two youngest age groups (who started out the most tolerant), and this continued through 1992 for seniors (who then showed some drop-off) and through 1994, among 19 to 22 year olds (who also then showed some drop-off). As Figure 5-14d illustrates, the prevalence of occasional heavy drinking declined substantially among seniors and 19 to 22 year olds between 1981 and the early 1990s, as norms became more restrictive. There was little or no change in the older age strata either in their levels of disapproval or in their rates of occasional heavy drinking.

- From 1984 through 1992 there was very little change in the proportions of high school seniors disapproving ***cigarette smoking*** at the rate of a pack or more per day (73% vs. 74%), but there has been some decline in disapproval since then (to 67% by 1996). Over the life of the study, disapproval among the young adults rose some for the 19 to 22 year olds, less so for the 23 to 26 year olds, and remained level in the oldest age band.

A FURTHER COMMENT: COHORT DIFFERENCES AND IMPLICATIONS FOR PREVENTION AND THEORY

It was noted above that the older age respondents are more likely than younger ones to see the use of ***marijuana, LSD, heroin, amphetamines, MDMA, ice, cocaine*** and ***barbiturates*** as dangerous. We have offered the 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 an important role in changing these key attitudes.[25] To the extent that the current 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 was greatest in the 1970s and early 1980s. In the early 1970s, LSD was alleged to cause brain damage and chromosomal damage, as well as bad trips, flashbacks, and behavior which could prove dangerous. Methamphetamine use was discouraged with the slogan "speed kills." There was a serious epidemic of heroin use in the early 1970s. The more recent cohorts in our study were not exposed to these experiences. While there may have been a secular trend toward greater perceived risk for drugs in general, in the case of LSD there may also have been a cohort effect (younger cohorts seeing less danger) that was enough to offset the secular trend among seniors, who have shown a net decrease in perceived risk since 1980.

This vicarious learning process has a very practical importance for national strategy for preventing future epidemics. As future cohorts of youngsters grow up with less opportunity for such vicarious learning, because fewer in their immediate social circles and fewer public role models are using these drugs and exhibiting the adverse consequences of use, the less opportunity these youngsters will have 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—e.g., through school prevention programs and public service advertising—they will become more susceptible to a new epidemic of use of the same or similar drugs.

Volume I, the companion volume to the present one, reports an increase in use of several drugs in eighth, tenth, and twelfth grades in 1994 through 1997, suggesting that this form of "generational forgetting"—in which replacement cohorts lose some of the knowledge held by their predecessors and thus become more vulnerable to using drugs—may have been taking place.

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[25]Johnston, L.D. (1991). Toward a theory of drug epidemics. *In* R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention*. Hillsdale, NJ: Lawrence Erlbaum. pp. 93-132.

TABLE 6-1

Trends in Perceived Harmfulness of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. How much do you think people risk harming themselves (physically or in other ways), if they...	Age Group	Percentage saying "great risk"*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Try marijuana once or twice	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	+1.8
	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	-1.4
	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	+1.6
	27-30									14.6	16.0	17.0	15.7	15.1	14.0	14.8	16.1	16.2	16.1	16.4	+0.3
Smoke marijuana occasionally	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	-0.3
	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	0.0
	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	+0.4
	27-30									24.2	25.7	28.7	27.4	27.5	26.8	28.1	28.3	28.1	26.0	25.8	-0.2
Smoke marijuana regularly	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	+0.4
	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	-7.3s
	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	-1.3
	27-30									67.5	69.1	69.2	67.5	68.8	69.4	65.6	69.2	67.3	65.0	63.6	-1.4
Try LSD once or twice	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	+2.7
	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	-1.4
	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	-0.9
	27-30									53.3	55.6	54.6	52.5	53.0	51.5	53.5	52.5	50.1	52.0	52.0	0.0
Take LSD regularly	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	-0.1
	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	-5.0
	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	-3.5
	27-30									89.1	91.2	92.0	87.1	88.5	89.0	89.2	88.4	87.0	87.2	90.5	+3.3
Try PCP once or twice	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	-2.0
	19-22								63.6	63.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26								64.8	63.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									65.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Try cocaine once or twice	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	+1.0
	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	-0.1
	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	-3.0
	27-30									45.3	53.0	51.6	52.6	51.8	54.7	53.5	56.4	53.6	54.6	60.5	+5.9
Take cocaine occasionally	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	-2.3
	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	-4.8
	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	-2.3
	27-30									62.6	66.6	66.6	69.1	69.9	69.1	69.9	70.0	67.8	73.8	73.2	-0.6
Take cocaine regularly	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	-0.8
	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	-2.9
	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	-0.4
	27-30									88.9	92.0	91.4	90.9	92.0	91.6	92.1	91.3	91.6	92.7	93.0	+0.3

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TABLE 6-1 (cont.)

Trends in Perceived Harmfulness of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. How much do you think people risk harming themselves (physically or in other ways), if they...	Age Group	Percentage saying "great risk"*																		'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Try crack once or twice	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	-1.8
	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	-2.6
	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	+2.6
	27-30									66.5	64.9	68.7	66.8	64.3	68.8	65.6	66.4	66.7	68.5	66.5	-1.9
Take crack occasionally	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	-1.6
	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	-0.1
	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	+3.4
	27-30									76.4	76.7	82.6	81.8	79.1	83.6	78.6	81.1	81.3	85.3	81.7	-3.5
Take crack regularly	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	-0.9
	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	-0.4
	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	+4.1s
	27-30									89.6	89.5	95.3	94.4	93.3	93.5	93.0	94.0	94.3	96.0	94.3	-1.6
Try cocaine powder once or twice	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	-2.9
	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	-0.8
	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	+0.5
	27-30									42.0	45.1	46.2	43.3	42.3	49.9	47.1	48.2	48.9	49.1	49.8	+0.7
Take cocaine powder occasionally	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	-2.3
	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	+2.4
	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	+4.2
	27-30									53.6	52.7	60.9	59.2	61.2	64.3	61.0	65.9	68.2	69.7	68.5	-1.3
Take cocaine powder regularly	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	-1.9
	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	-1.3
	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	+2.9
	27-30									85.1	86.7	92.7	91.1	91.5	92.5	90.7	92.7	91.7	93.0	92.3	-0.7
Try MDMA ("ecstasy") once or twice	18																		33.8	34.5	+0.7
	19-22										45.2	47.1	48.8	46.4	45.0	51.1	48.3	46.7	45.5	42.7	-2.8
	23-26										49.5	47.2	47.4	45.5	41.9	50.6	49.3	50.4	50.5	47.7	-2.8
	27-30										44.9	48.7	47.7	44.2	51.7	47.3	50.0	50.6	48.8	50.4	+1.6
Try heroin once or twice	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	+1.1
	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	-3.2
	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	0.0
	27-30									66.0	69.7	67.5	66.1	66.5	69.3	69.6	66.4	66.4	67.9	69.7	+1.9

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TABLE 6-1 (cont.)

Trends in Perceived Harmfulness of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. How much do you think people risk harming themselves (physically or in other ways), if they...	Age Group	Percentage saying "great risk"*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Take heroin occasionally	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	+0.6
	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	-4.3
	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	-2.5
	27-30									86.0	86.8	85.3	84.3	84.9	86.2	86.8	83.1	83.8	85.8	86.6	+0.8
Take heroin regularly	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	+0.2
	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	-1.3
	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	-1.0
	27-30									92.7	93.5	93.0	90.7	91.3	92.6	93.8	92.4	92.1	93.8	95.0	+1.2
Try amphetamines once or twice	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	+4.3ss
	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	+1.5
	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	+3.1
	27-30									35.2	37.5	36.9	36.5	36.2	34.0	37.5	36.0	36.2	34.5	37.6	+3.1
Take amphetamines regularly	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	+1.7
	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	-0.5
	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	-1.6
	27-30									80.6	82.9	83.3	79.4	80.3	79.8	78.4	77.7	75.6	77.4	81.1	+3.7
Try crystal meth ("ice")	18												61.6	61.9	57.5	58.3	54.4	55.3	54.4	52.7	-1.7
	19-22											57.8	58.6	57.7	57.5	61.4	58.9	61.1	56.4	55.8	-0.6
	23-26											56.5	56.0	55.6	52.0	61.0	57.8	64.1	60.7	58.2	-2.5
	27-30											59.6	57.2	52.7	60.3	57.9	58.5	59.1	59.8	59.9	+0.1
Try barbiturates once or twice	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	+2.1
	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	-3.7
	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	+3.0
	27-30									37.2	38.7	39.0	37.0	38.2	36.5	40.5	36.6	37.2	35.7	36.7	+1.1
Take barbiturates regularly	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	-0.5
	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	-4.5
	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	-1.3
	27-30									81.5	83.7	84.0	79.6	78.6	80.2	78.3	77.7	74.1	77.1	79.9	+2.8
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	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	+1.3
	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	+1.1
	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	+0.1
	27-30									5.0	6.3	4.4	6.6	5.6	4.7	4.1	6.7	4.7	4.0	6.2	+2.2

(Table continued on next page)

TABLE 6-1 (cont.)

Trends in Perceived Harmfulness of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. How much do you think people risk harming themselves (physically or in other ways), if they...	Age Group	Percentage saying "great risk"*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Take one or two drinks nearly every day	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	-0.5
	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	-2.1
	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	+0.8
	27-30									27.4	31.7	32.2	31.7	30.9	28.0	27.4	27.2	24.0	24.8	20.8	-4.0
Take four or five drinks nearly every	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	-0.9
	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	-1.0
	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	-5.8
	27-30									79.3	81.7	84.7	79.1	79.9	79.1	76.6	82.2	76.1	79.3	75.7	-3.5
Have five or more drinks once or twice	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	-0.2
	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	+5.4
	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	+3.7
	27-30									41.0	42.3	44.1	42.2	45.1	42.9	43.2	44.6	41.5	40.0	40.2	+0.2
Smoke one or more packs of cigarettes per day	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	+2.1
	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	+0.9
	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	-1.0
	27-30									72.8	75.2	77.8	75.4	77.6	75.0	75.3	75.6	73.0	80.3	80.9	+0.6
Use smokeless tobacco regularly	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	+2.3
	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	+0.9
	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	+2.2
	27-30									42.8	42.8	43.8	44.3	44.1	47.3	46.3	44.2	43.6	50.2	52.6	+2.4
Approximate Weighted N =	*18*	*3234*	*3604*	*3557*	*3305*	*3262*	*3250*	*3020*	*3315*	*3276*	*2796*	*2553*	*2549*	*2684*	*2759*	*2591*	*2603*	*2449*	*2579*	*2571*	
	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*	

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.

'NA' indicates data not available.

* Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

TABLE 6-2

Trends in Proportions Disapproving of Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	Percentage disapproving*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Try marijuana once or twice	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	+0.6
	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	-0.3
	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	+0.8
	27-30									49.0	50.9	53.8	54.6	51.9	56.8	55.7	57.5	54.1	59.0	55.7	-3.2
Smoke marijuana occasionally	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	+1.2
	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	-2.3
	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	+1.2
	27-30									65.3	67.1	68.9	73.0	67.2	72.2	69.4	72.5	70.5	74.5	72.4	-2.1
Smoke marijuana regularly	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	+2.4
	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	-2.8
	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	-0.5
	27-30									87.6	87.5	89.7	89.6	87.2	89.4	88.7	91.9	89.9	92.1	89.2	-2.9
Try LSD once or twice	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	+1.6
	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	-2.3
	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	-3.8
	27-30									91.0	87.2	89.7	87.9	85.6	88.8	88.2	87.4	88.7	88.7	87.3	-1.3
Take LSD regularly	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	+0.6
	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	-1.2
	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	+1.5
	27-30									98.8	97.1	98.9	98.9	97.5	98.5	98.7	98.6	98.1	97.5	97.4	-0.1
Try cocaine once or twice	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	+1.5
	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	-1.8
	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	-2.4
	27-30									82.1	81.0	85.5	86.9	83.9	85.7	86.6	86.6	88.3	89.2	90.3	+1.1
Take cocaine regularly	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	-0.4
	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	-0.3
	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	+1.7
	27-30									98.1	97.0	99.3	99.0	97.2	98.7	99.0	98.9	98.5	97.9	97.8	-0.1
Try heroin once or twice	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	+1.4
	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	-0.5
	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	-0.6
	27-30								.	97.9	95.8	97.5	96.6	94.8	97.3	94.7	96.3	96.0	96.9	95.9	-1.1

(Table continued on next page)

TABLE 6-2 (cont.)

Trends in Proportions Disapproving of Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	Percentage disapproving[a]																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Take heroin occasionally	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	+0.7
	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	+0.4
	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	+0.2
	27-30									99.2	97.3	99.0	98.9	97.0	98.9	98.7	98.9	98.0	98.7	97.6	-1.2
Take heroin regularly	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	+0.2
	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	+0.2
	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	+0.9
	27-30									99.4	97.6	99.4	99.0	97.8	99.0	99.4	99.1	98.6	98.4	98.1	-0.4
Try amphetamines once or twice	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	+1.2
	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	+1.3
	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	-2.1
	27-30									83.5	81.0	84.3	83.7	80.9	83.5	82.0	83.1	85.8	86.3	85.9	-0.4
Take amphetamines regularly	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	-0.3
	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	-1.1
	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	+1.1
	27-30									98.1	96.5	98.6	97.8	96.8	97.7	99.0	98.9	98.2	98.1	97.7	-0.4
Try barbiturates once or twice	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	-0.4
	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	-0.8
	23-26					83.9	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	-0.9
	27-30									90.5	88.3	88.4	88.8	86.6	88.9	87.6	88.0	89.4	88.8	88.4	-0.4
Take barbiturates regularly	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	-0.7
	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	0.0
	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	+1.2
	27-30									98.4	97.1	99.1	98.5	97.7	98.4	99.1	99.0	98.5	97.9	97.7	-0.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	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	-1.6
	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	+3.1
	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	+2.7
	27-30									19.5	19.1	18.7	18.8	17.9	19.5	18.6	18.2	16.1	17.4	15.2	-2.2
Take one or two drinks nearly every day	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	-0.6
	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	-2.9
	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	+1.8
	27-30									76.0	73.9	73.3	76.1	69.5	73.5	72.4	71.8	71.4	71.8	69.8	-2.0

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TABLE 6-2 (cont.)

Trends in Proportions Disapproving of Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	Percentage disapproving[a] 1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Take four or five drinks nearly every day	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	-1.9
	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	-1.5
	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	+2.3
	27-30									97.4	94.6	96.1	95.3	94.8	94.8	96.4	96.7	96.4	96.2	95.0	-1.3
Have five or more drinks once or twice each weekend	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	-1.2
	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	-3.4
	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	+2.8
	27-30								.	73.9	71.4	73.1	72.1	68.4	73.4	73.5	73.7	72.4	73.0	71.1	-1.9
Smoke one or more packs of cigarettes per day	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	+1.7
	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	-2.0
	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	+2.2
	27-30									72.8	69.4	73.5	71.2	70.7	73.8	72.3	73.9	72.7	74.3	71.7	-2.6
Approximate Weighted N =	*18*	*3261*	*3610*	*3651*	*3341*	*3254*	*3265*	*3113*	*3302*	*3311*	*2799*	*2566*	*2547*	*2645*	*2723*	*2588*	*2603*	*2399*	*2601*	*2545*	
	19-22	*588*	*573*	*605*	*579*	*586*	*551*	*605*	*587*	*560*	*567*	*569*	*533*	*530*	*489*	*474*	*465*	*480*	*470*	*446*	
	23-26					*542*	*535*	*560*	*532*	*538*	*516*	*524*	*495*	*538*	*514*	*475*	*466*	*449*	*423*	*401*	
	27-30									*526*	*509*	*513*	*485*	*512*	*462*	*442*	*450*	*430*	*453*	*449*	

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.

'NA' indicates data not available.

[a]Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

Chapter 7

THE SOCIAL MILIEU FOR YOUNG ADULTS

In Volume I, we examined the extent to which secondary school students are exposed to drug use of various kinds, their perceptions of the relevant norms in their peer groups, and the extent to which they perceive various drugs to be available to them. In this chapter, the same issues are addressed for the young adult population, many of whom are in social environments quite different from the ones to which they were exposed during their high school years.

Because all of these question sets are contained in only a single questionnaire form, and because the follow-up samples are much smaller than the in-school samples, the case counts are much lower than those discussed in most chapters. Therefore, the prevalence and trend estimates are more subject to fluctuation due to greater sampling error.

PEER NORMS AS PERCEIVED BY YOUNG ADULTS

Table 7-1 provides current levels and trends in perceived friends' disapproval of drug use among high school seniors, 19 to 22 year olds, 23 to 26 year olds, and 27 to 30 year olds. (These are the same age groupings discussed in Chapter 6.) Trend data are available since 1980, 1984, and 1988, respectively, for the three four-year age groupings.

The questions about how their close friends feel make use of the same answer scale (stated in terms of degree of disapproval of the use of the various drugs at different levels of use) as do the questions which ask about the respondent's own attitudes about those behaviors (discussed in Chapter 6). The list of drug-using behaviors is shorter here, and the questions appear on a different questionnaire form, and therefore have a different set of respondents. However, the results for perceived peer norms are generally quite consistent with those for personal disapproval; that is, the proportion saying that they personally disapprove of a drug-using behavior tends to be similar to the proportion saying that their close friends would disapprove of that same behavior. Exceptions are ***trying marijuana once or twice*** and ***smoking one or more packs of cigarettes per day***, where respondents have consistently reported their friends' attitudes as *more* disapproving than their own attitudes (especially in the oldest age band), and ***heavy weekend drinking***, where friends' attitudes are seen as *less* disapproving than their own. (By 1998 the youngest two age bands no longer reported their friends as more disapproving of cigarette smoking than they were.)

Current Perceptions of Friends' Attitudes

- The peer norms reported by young adults one to twelve years past high school are similar to those reported by high school seniors. That is, for each of the ***illicit drugs other than marijuana***, the great majority of young adults think

that their close friends would disapprove of their even trying such drugs once or twice (86% for ***amphetamines***, 86% for ***LSD*** and 90% for ***cocaine***).

- Well over half of the young adults (about 63%) now think their friends would disapprove of their even trying ***marijuana***, while over two-thirds (71%) think they would disapprove of occasional use and about 86% think they would disapprove of regular use.

- Two-thirds (67%) of young adults say their friends would disapprove if they were ***daily drinkers***, and over 9 out of 10 (91%) if they were ***heavy daily drinkers***, defined as taking four or five drinks nearly every day.

- Friends' disapproval of occasional ***heavy drinking*** is distinctly lower. Only 53% to 63% of any age group think their friends would disapprove of their having five or more drinks once or twice each weekend. The 19 to 22 year olds, the age group who exhibit the highest rate of such drinking, have the lowest level of perceived friends' disapproval; the two older age groups are considerably more disapproving.

- Peer disapproval of ***cigarette smoking*** is reasonably high in all four age bands: 69% of seniors say their friends would disapprove of pack-a-day smoking, 69% of the 19 to 22 year olds, 77% of the 23 to 26 year olds, and 82% of the 27 to 30 year olds. Clearly anti-smoking attitudes are weakest among the younger age bands.

Trends in Peer Norms

- Important changes in the social acceptability of drug-using behaviors among young adults' peers have occurred over the life of this study. Between 1980 and 1992, peer disapproval of ***marijuana*** use grew substantially in all of the young adult age bands. For example, among the 19 to 22 year olds, the proportion thinking their friends would disapprove if they even tried marijuana rose from 41% in 1980 to 65% in 1992. A similar peaking occurred for the 23 to 26 year olds around 1992, at 66%. In both age groups, disapproval subsequently declined. The oldest group, 27 to 30 year olds, has remained at about 65% since 1991.

  Friends' disapproval of more frequent use of marijuana also rose through the early 1990s, and has since declined, particularly among those under age 23. For example, among the 19 to 22 year olds, friends' disapproval of occasional marijuana use increased from 51% in 1980 to 74% in 1992, and is at 65% in 1998.

- There was a more gradual increase in peer disapproval levels for ***amphetamine*** use for all age groups through 1991, with definite declines through 1996 evident among the high school seniors.

- Peer disapproval of trying ***LSD*** showed very little change through 1991 in any of the age bands, but peer disapproval fell some in the 1990s, especially among the 18 year olds.

- Perceived peer norms regarding ***cocaine*** use were first measured in 1986. During the next five years, self-reported cocaine use declined substantially as peer norms shifted considerably toward disapproval. For example, by 1994, 95% of the 19 to 22 year olds thought their friends would disapprove of their even trying cocaine (vs. 76% in 1986). After 1994 , peer norms against use continued to strengthen a bit in the upper age bands but weakened slightly in the younger age groups, likely reflecting a cohort effect.

- Peer norms among seniors regarding ***alcohol*** use became somewhat more restrictive between 1981 and 1991, but have relaxed some since then. Among the young adults, friends' disapproval has followed a similar pattern, although at slightly lower levels.

- Peer norms regarding ***cigarette smoking*** became somewhat more restrictive among high school seniors in the early years of this study; peer disapproval rose from 64% in 1975 to 73% in 1979. There was little further net change through 1992 when friends' disapproval stood at 76%. However, peer disapproval of smoking slipped some, to 69% by 1995, where it has remained. Between 1982 and 1992, peer disapproval among 19 to 22 year olds rose a bit, from 75% to 79%, but it then dropped to 69% by 1998. Among 23 to 26 year olds disapproval increased a bit from 74% in 1984, to 83% by 1991 but dropped back to 77% by 1998. Despite substantial publicity about changing norms and new laws restricting smoking, there was rather little change in rates of perceived peer disapproval of cigarette smoking for some years, particularly among those of high school and college ages; and in the 1990s, rates of disapproval actually declined some in all of these age groups.

EXPOSURE TO DRUG USE BY FRIENDS AND OTHERS

Exposure to drug use is measured by two sets of questions, each appearing on a (different) single questionnaire form. The first set asks each respondent to estimate what proportion of his or her friends use each drug, while the second asks how often during the prior twelve months the respondent has been around people who were using each of a list of drugs "to get high or for kicks." The same questions are asked of high school seniors and their results are included for comparison purposes in Tables 7-2 and 7-3. We continue to deal with four-year age bands to increase the reliability of the

measures. At the end of each table is a summary of the weighted numbers of cases upon which each annual estimate is based. (The actual numbers of cases are somewhat higher.)

Exposure to Drug Use among Young Adults

- Relatively high proportions of young adults in all of these age bands have at least some friends who use ***some illicit drugs*** (Table 7-2). Currently, the proportion declines considerably with age, although this was not always the case. In 1998, the proportion is highest for high school seniors (85%), falls to 80% among 19 to 22 year olds, 68% for the 23 to 26 year olds, and 58% for the 27 to 30 year olds. The proportions who say that *most or all* of their friends use one or more of the illicit drugs, fell from 26% for seniors, to 17% for 19 to 22 year olds, to 10% for 23 to 26 year olds, to only 5% among 27 to 30 year olds—quite a dramatic difference.

- With regard to ***illicit drugs other than marijuana***, taken as a whole, considerably fewer report *any* of their friends so involved: 56% for seniors, 53% for 19 to 22 year olds, 35% for 23 to 26 year olds, and 34% for 27 to 30 year olds. (Note again the descending rates with increasing age after high school.) High school seniors also have the highest proportion saying that *most or all* of their friends use (9% vs. 1% - 4% among the young adult strata).

- With respect to individual illicit drugs, exposure among young adults ages 19 to 30 is greatest for ***marijuana***, with over three-quarters of 19 to 22 year olds, around two-thirds of 23 to 26 year olds, and over half of the 27 to 30 year olds reporting that at least some of their friends use. The next highest exposures are for ***LSD*** (29% among 19 to 22 year olds, declining to 13% among 27 to 30 year olds), ***cocaine*** (declining from 27% among 19 to 22 year olds to 19% in the older age bands), ***MDMA*** (26% among 19 to 22 year olds, declining to 9% among 27 to 30 year olds), and ***amphetamines*** (24% among 19 to 22 year olds, declining to 11% among 27 to 30 year olds) .

- The proportions of young adults who have some friends who use the other illicit drugs exceed 10% in at least one of the young adult age groups for the following drugs: ***steroids*** (7%-20%), ***inhalants*** (4%-16%), ***hallucinogens other than LSD*** (8%-19%), ***crack cocaine*** (6%-16%), ***cocaine*** (19%-27%), ***tranquilizers*** (9%-14%), ***narcotics other than heroin*** (8%-15%), ***quaaludes*** (4%-11%), and ***barbiturates*** (6%-15%). The exception is ***heroin*** (4%-9%).

- For all substances except ***cocaine***, the proportion of young adults having any friends who use decreases with age, consistent with the age-related differences in self-reported use. The steepest declines occur with ***marijuana, inhalants, MDMA, LSD***, and ***amphetamines***..

- For some years, ***cocaine*** was the one illicit drug that showed significantly higher rates of active use among adults than among high school seniors. That is no longer true, although there is still little drop-off with age in early adulthood; consequently, there is little difference associated with age in having friends who use (19% to 27% for all three young adult age groups).

- For ***crack***, however, the story is different. Use now descends sharply with age, although this was not true in the mid 1980s, when measures of crack use were first included in the surveys.

- In general it appears that some respondents who report that their friends use illicit drugs are not directly exposed to that use themselves, judging by the differences in proportions saying they have some friends who use (Table 7-2) and the proportions who say they have not been around people who were using during the prior year (Table 7-3).

- With respect to ***alcohol*** use, the great majority of young adults have at least *some* friends who ***get drunk at least once a week***, although this differs by age: 81% of the high school seniors, 82% of the 19 to 22 year olds, 74% of the 23 to 26 year olds, and 66% of the 27 to 30 year olds. The proportions who say *most or all* of their friends get drunk once a week differ more substantially by age: 32% of the seniors, 30% of the 19 to 22 year olds, 16% of the 23 to 26 year olds , and only 9% of the 27 to 30 year olds. In terms of direct exposure during the past year to people who were drinking alcohol "to get high or for 'kicks'," having some such exposure is almost universal in these four age groups: 92%, 92%, 89%, and 88%, respectively. (See Table 7-3.)

- In each of these four age groups, nearly all (81%-93%) have at least a few friends who ***smoke cigarettes***, with some fall off after age 22. At the other end of the scale, a third of seniors (34%) state that *most or all* of their friends smoke, while over a quarter (29%) of 19 to 22 year olds say the same. The proportions decline to 17% of the 23 to 26 year olds and 12% of the 27 to 30 year olds. This increase in the segregation of smokers from non-smokers may reflect the stratification of young people after high school as a function of educational attainment, which is highly correlated with cigarette smoking.

Trends in Exposure to Drug Use by Young Adults

Tables 7-2 and 7-3 also provide trend data on the proportions of friends using and the proportions directly exposed to drug use. Once again, trends are available for the 19 to 22 year olds since 1980, for the 23 to 26 year olds since 1984, and for the 27 to 30 year olds since 1988. Data for high school seniors since 1980 also have been included in these tables for comparison purposes.

- An examination of Table 7-3 shows that exposure to illicit drug use in the past 12 months gets progressively lower at higher ages for ***any illicit drug***, as well

as for a number of specific drugs. Some of the largest declines in exposure to use with age occur for ***marijuana, LSD, other hallucinogens, cocaine*** and ***amphetamines***. In general, these differences replicate across different historical periods, with the exception of cocaine which has only recently (since 1996) began to show a decline in exposure with increasing age.

- Until 1992, young adults' trends in exposure to use tended to parallel those observed for twelfth graders. Between 1980 and 1992, that meant a decreasing number of respondents being exposed to ***any illicit drug*** use (Table 7-3) or reporting any such use in their own friendship circle (Table 7-2). Since 1992, however, an important *divergence* among age groups in trends has emerged: twelfth graders have shown a substantial increase in both friends' use and exposure to use (and in self-reported use); the 19 to 22 year olds showed a similar rise, but lagged by a few years; while the oldest two age bands of young adults have shown practically no change. This pattern no doubt reflects the results of generational replacement along with the emergence of lasting cohort differences.

- With regard to ***marijuana***, it is particularly noteworthy that, while 34% of the 19 to 22 year olds in 1980 said *most or all* of their friends used marijuana, only 9% said the same in 1993. Clearly the number of friendship groupings in which marijuana use is widespread dropped dramatically over that interval. The figure has increased recently, however, and was up to 16% by 1996, where it has remained since.

- The proportion exposed to use of ***any illicit drugs other than marijuana*** did not begin to decline until after 1982. By 1991 there has been a considerable drop in such exposure in all four age groups. This drop appears to be due to decreases in exposure to the use of ***cocaine*** and ***amphetamines*** particularly, although there were decreases for ***barbiturates*** and ***tranquilizers***, as well. The levels then began to rise in the two youngest age bands, while at the same time they continued to decline in the two oldest age bands.

- Between 1987 and about 1992, there was a considerable drop in the proportion of all four age groups who said they had any friends who used ***crack***. (Self-reported use declined in the same period.) Since then the rates of friends' use have increased some in the two youngest age bands and decreased some in the two oldest ones.

- For all four age groups there were modest declines between 1987 and 1992 in the proportion saying that most or all of their friends drink ***alcohol***. Since 1992, there may have been a slight upward drift in the younger age bands.

- Among high school seniors, the proportion who said most or all of their friends smoked ***cigarettes*** declined appreciably between 1975 and 1981,

during the same period that self-reported use declined, after which neither measure showed much change until about 1992. Thereafter, substantial increases in both measures have occurred. Fully one-third (34%) of high school seniors now report that most or all of their friends smoke cigarettes, up from 21% in 1992. Among 19 to 22 year olds a decline in friends' use occurred between 1980 (or possibly earlier) and 1985, followed by a leveling, through 1994. The percentage saying most friends smoke increased from 22% in 1994 to 29% in 1998, the highest level observed since 1980. Among 23 to 26 year olds, a downturn was evident between at least 1984 (the first year for which data are available) and 1988, then reported friends' use leveled. These staggered changes illustrate that the "cohort effects" are moving up the age spectrum along with the cohorts.

- Nearly all of these changes across the various drugs parallel changes in self-reported use by these four age groups, reinforcing our trust in the validity of the self-report data, since there would presumably be less motivation to distort answers about the proportion of an unnamed set of friends who use a drug than about one's own use of it.

PERCEIVED AVAILABILITY OF DRUGS BY YOUNG ADULTS

Young adults participating in the follow-up survey receive identical questions to those asked of high school seniors about 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, yielding a weighted sample size for each four-year age band of about 400 to 600 cases per year. The data for the follow-up samples, which are grouped into four-year age bands, are presented in Table 7-4, along with the data for the twelfth graders. Sample sizes are presented at the end of Table 7-4.

Perceived Availability

- As was true with the high school seniors, very substantial proportions of the American young adult population have access to various illicit drugs. (We do not ask about access to alcohol and cigarettes, because we assume access to be universal.)

- ***Marijuana*** is the most available illicit drug, with 82%-90% of the young adult age strata saying it would be "fairly easy" or "very easy" to get. About the same proportion of twelfth graders (90%) have access.

- ***Amphetamines*** are the next most available (41%-56%), and they are even more available to twelfth graders (61%).

- ***Cocaine*** ranks next among young adults, with 47%-52% saying it would be fairly easy to get. ***Powered cocaine*** is available to 44% to 47%. ***Crack*** is

available to somewhat smaller proportions than powdered cocaine—from 33%-44% for all four age strata.

- ***LSD*** shows a high degree of availability among high school seniors (49%), then decreases with age to 33% for the 27 to 30 year olds. ***MDMA*** follows a similar pattern with high school seniors at 38% and 27 to 30 year olds at 26%.

- ***Hallucinogens other than LSD*** are reported as less available than LSD; 25%-34% in the three young adult strata, and 35% among twelfth graders say they could get it fairly easily. Again, availability declines with age.

- ***Barbiturates*** and ***tranquilizers*** are reported as available by sizeable proportions of young adults. Some 39%-43% say they could get barbiturates (compared with 41% of seniors), and 37%-40% say they could get tranquilizers (vs. 36% of seniors). The availability of tranquilizers seems to increase a bit with age in the late-20s.

- Almost a third of young adults (28%-35%) say they could get ***heroin*** fairly easily (vs. 36% of twelfth graders).

- About a third of young adults (32%-40%) say they can get ***other narcotics*** (vs. 43% of high school seniors). Availability declines some with age.

- ***Crystal methamphetamine*** (ice) is perceived to be available by one-quarter or more of all age groups (23%-31%).

- ***Steroids*** show declines in perceived availability with increasing age, ranging from 45% among high school seniors down to 31% among the 27 to 30 year olds.

Trends in Perceived Availability

- ***Marijuana*** has been almost universally available to all these age groups throughout the historical periods covered by the available data (for up to 24 years in the case of high school seniors). There was a slight decrease among high school seniors since the peak year of 1979 through 1991, and a slightly larger decrease from 1980 through 1991 among 19 to 22 year olds. Availability has risen some in nearly all strata since 1993, though by very little among the young adults. Perceived availability is now a bit higher for the younger age groups (90% for seniors, 82% for those age 27 to 30)—a reversal of the situation in the late 1980s.

- ***Cocaine*** availability moved up among all three young adult age groups over the 1984 to 1988 interval, reaching historic highs in 1988 and 1989. (High

school seniors showed a rise in availability in earlier years—from 1975 to 1980—followed by a leveling between 1980 and 1985. Availability was level during the latter period among 19 to 22 year olds, also.) From a policy perspective, it is worth noting that in all three age bands for which we have data, the perceived availability of cocaine *increased* in 1987—the same year that use actually dropped sharply. Between 1988 and 1989, in the two younger age strata (aged 18, and 19 to 22) the proportions who believed cocaine to be easily available were still increasing, whereas in the older age strata the proportions were beginning to decrease. In 1990 and 1991, all four groups reported decreased availability—quite parallel to the number who had friends who were users and personal use which both dropped substantially in these years and then leveled in 1992. Perceived availability of cocaine dropped to between 49% and 57% for all four age groups in 1993, with the declines ranging from 4 to 7 percentage points. These declines were statistically significant among all but the 19 to 22 year olds. From 1994 through 1998, there was a gradual decline in availability of cocaine among the older age groups.

- ***Crack*** availability peaked in 1988-1989 for all age groups (it was first assessed in 1987), declined through 1992, with little further change until 1995. Since 1995, crack availability has increased some among seniors, leveled among 19 to 22 year olds, and declined a bit in the two oldest strata. In the late 1980s, crack was most available to the older age strata, but the opposite is now true.

- The trends in ***LSD*** availability among young adults have some parallels to those for twelfth graders. Among twelfth graders, there was a drop of about 10 percentage points in the mid-1970s and a later drop in the interval 1980 to 1986. The latter drop, at least, was paralleled in the early data for 19 to 22 year olds. Then, since 1986, availability has increased considerably in all age bands. In 1995, it was at its highest level since these questions were introduced; however, availability is now down again, as of 1998 in all age groups except the 19 to 22 year olds.

- 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 until 1993, when high school seniors reported a significant increase in availability, but the young adult strata did not. There have been modest increases since then in all age groups except for the oldest group which has remained stable.

- The availability of ***MDMA*** (ecstasy) rose substantially in all the age groups, during the 1990s. (The questions were first introduced in 1989 and 1990.) Among the high school seniors, reported availability nearly doubled, from 22% in 1989 to 39% in 1998.

- ***Heroin*** availability varied within a fairly narrow range from 1980 to 1986 but then showed a modest increase among both high school seniors and the young adults through 1990 (through 1992 in the case of the seniors). It has since remained fairly stable across all age groups, although at impressively high levels.

- The availability of ***narcotics other than heroin*** slowly rose among all age groups between 1980 and 1989, followed by considerable stability among young adults, but some modest increase in recent years among twelfth graders.

- The reported availability of ***amphetamines*** peaked in 1982 for both twelfth graders and 19 to 22 year olds; since then it has fallen by 10 percentage points among twelfth graders and 17 percentage points among the 19 to 22 year olds. Since 1984, when data were first available, there has been a decline of 13 percentage points among the 23 to 26 year olds, as well. For the 27 to 30 year olds, reported availability decreased by 13 percentage points between 1988 and 1998.

- ***Barbiturates*** have exhibited a long-term decline in availability since about 1981 or 1982 in the two younger groups—by 15 percentage points among high school seniors and 22 percentage points among 19 to 22 year olds. Since 1984, when data were first available for 23 to 26 year olds, availability has declined by 10 percentage points. There also has been a decline for 27 to 30 year olds of about 11 percentage points since 1989.

- ***Tranquilizer*** availability also has declined long term among high school seniors, from 72% in 1975 to 36% in 1998. From 1980, when data were first available for 19 to 22 year olds, availability declined more sharply and from a higher level (from 67% to 37% in 1998) than among seniors, such that previous differences in availability between them were eliminated by 1992. The older age groups also showed an overall decline in the availability of tranquilizers through 1998.

- Data on ***steroid*** availability were first gathered in 1990, and availability appeared to peak in 1992, followed by a modest decline in all age groups. However, seniors showed a non-significant increase in 1998.

TABLE 7-1

Trends in Proportions of Friends Who Disapprove of Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. How do you think your close friends feel (or would feel) about you...	Age Group	Percentage saying friends disapprove*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Trying marijuana once or twice	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	+0.8
	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	-1.3
	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	+7.1s
	27-30									58.6	58.7	61.4	64.6	63.5	64.4	66.3	66.1	65.8	65.0	65.4	+0.4
Smoking 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	+0.5
	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	0.0
	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	+5.1
	27-30									67.8	69.4	71.9	73.7	76.0	75.1	76.4	73.8	75.6	72.4	74.9	+2.5
Smoking 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	+0.6
	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	-2.3
	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	+1.5
	27-30									85.4	86.0	88.4	89.2	88.7	88.2	88.9	89.7	89.6	87.8	90.8	+3.0
Trying LSD once or twice	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	+2.4
	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	-1.8
	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	+2.2
	27-30									88.8	89.7	92.3	91.1	91.4	89.9	91.2	89.7	89.3	88.5	88.7	+0.2
Trying cocaine once or twice	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	+1.5
	19-22							76.4	NA	84.8	87.7	89.2	92.3	91.9	92.4	94.7	91.7	91.5	91.8	90.0	-1.8
	23-26							70.8	NA	81.4	84.5	84.1	86.7	87.4	87.7	87.9	90.4	90.0	91.1	92.0	+0.9
	27-30									81.8	81.1	83.7	83.5	84.4	86.1	87.8	87.5	88.7	89.4	89.3	-0.1
Taking cocaine occasionally	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	+1.4
	19-22							84.9	NA	91.0	93.8	94.2	95.6	95.9	95.6	97.5	95.6	95.7	96.6	93.1	-3.5s
	23-26							81.7	NA	88.2	91.5	92.4	94.1	93.8	93.5	94.3	94.6	95.4	95.1	95.2	+0.1
	27-30									87.7	89.5	90.0	92.2	92.3	92.8	94.6	94.1	94.6	94.2	96.1	+1.9
Trying an amphetamine once or twice	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	+2.2
	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	87.1	86.0	84.5	84.0	-0.5
	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	+3.7
	27-30									82.7	84.1	84.9	84.6	84.7	84.1	85.9	85.5	85.6	85.9	85.8	-0.1

(Table continued on next page)

TABLE 7-1 (cont.)

Trends in Proportions of Friends Who Disapprove of Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

Q. How do you think your close friends feel (or would feel) about you...	Age Group	Percentage saying friends disapprove[a]																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Taking one or two drinks nearly every day	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	+0.8
	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	-6.2s
	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	-1.2
	27-30									71.0	68.0	70.4	71.9	68.8	73.2	70.9	68.8	65.7	67.3	66.7	-0.6
Taking four or five drinks nearly every day	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	+0.3
	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	-4.1
	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	+3.0
	27-30									92.8	92.0	92.9	92.7	92.7	93.9	94.0	92.9	91.9	93.8	92.1	-1.8
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	-0.9
	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	-3.6
	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	+4.4
	27-30									61.9	65.1	66.3	68.2	66.2	66.7	63.7	64.6	61.6	64.0	63.0	-1.0
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	+0.5
	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	-7.3s
	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	+0.7
	27-30									81.2	80.9	82.9	84.5	83.1	86.8	82.5	83.4	81.9	80.5	81.9	+1.4
Approximate Weighted N=	*18*	*2766*	*3120*	*3024*	*2722*	*2721*	*2688*	*2639*	*2815*	*2778*	*2400*	*2184*	*2160*	*2229*	*2220*	*2149*	*2177*	*2030*	*2095*	*2037*	
	19-22	*569*	*597*	*580*	*577*	*582*	*556*	*577*	*595*	*584*	*555*	*559*	*537*	*520*	*510*	*470*	*480*	*471*	*466*	*436*	
	23-26					*510*	*548*	*549*	*540*	*510*	*513*	*516*	*516*	*507*	*481*	*463*	*445*	*436*	*419*	*425*	
	27-30									*483*	*518*	*479*	*480*	*451*	*451*	*457*	*439*	*439*	*422*	*440*	

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.

[a]Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

TABLE 7-2

Trends in Proportions of Friends Using Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	'97-'98 change
Take any illicit drug*																					
% saying any friends	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	+1.2
	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	+2.6
	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	+0.7
	27-30									74.8	72.9	69.6	67.1	61.5	60.2	57.1	58.5	59.1	60.9	58.3	-2.6
% 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	+2.2
	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	+0.6
	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	-1.0
	27-30									8.6	6.4	5.9	2.9	5.8	5.0	5.6	6.1	3.6	4.5	5.3	+0.8
Take any illicit drug* other than marijuana																					
% saying any friends	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	+0.5
	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	+3.7
	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	+0.3
	27-30									55.9	55.0	49.7	47.2	37.7	38.5	33.9	37.7	36.4	33.9	34.1	+0.2
% 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	+1.9
	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	+0.2
	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	+0.2
	27-30									4.6	3.0	2.8	1.0	1.4	1.5	1.5	1.5	0.9	1.2	0.9	-0.3
Smoke marijuana																					
% saying any friends	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	+1.8
	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	+2.5
	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	+1.5
	27-30									71.8	68.2	65.1	62.6	58.0	57.4	52.3	55.7	55.1	58.3	55.5	-2.8
% 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	+1.3
	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	+0.3
	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	-0.8
	27-30									6.8	4.4	4.0	2.8	5.1	5.2	5.0	5.6	3.5	3.9	4.8	+1.0
Use inhalants																					
% saying any friends	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	-1.5
	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	+2.6
	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	-1.3
	27-30									4.6	3.5	2.9	2.5	3.3	2.9	3.5	4.0	4.1	3.6	3.8	+0.2
% 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	+0.8
	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	+0.5
	23-26					0.6	0.2	0.6	0.1	0.2	0.4	0.4	0.1	0.0	0.1	0.2	0.7	0.5	0.8	0.0	-0.8
	27-30									0.3	0.0	0.2	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0

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TABLE 7-2 (cont.)

Trends in Proportions of Friends Using Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	'97-'98 change
Use nitrites																					
% saying any friends	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	+1.0
	19-22	18.4	16.0	14.2	13.8	8.9	9.9	11.7	13.2	10.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26					10.8	7.8	8.0	7.9	5.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
% 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	+0.3
	19-22	0.3	0.4	0.9	0.6	0.6	0.6	0.4	0.4	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26					0.8	0.3	0.4	0.3	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Take LSD																					
% saying any friends	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	+0.3
	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	+4.7
	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	-3.0
	27-30									10.4	7.7	9.1	8.6	10.9	8.7	8.1	12.0	11.6	12.3	12.6	+0.3
% saying most or all	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	+1.0
	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	+1.1
	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	+0.4
	27-30									0.3	0.2	0.3	0.3	0.0	0.3	0.4	0.3	0.4	0.4	0.1	-0.3
Take other psychedelics																					
% saying any friends	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	27.4	+1.1
	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	19.1	+1.8
	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	11.7	-1.3
	27-30									10.6	7.4	7.1	6.8	7.9	7.1	6.6	7.9	7.5	6.8	7.8	+1.1
% 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	3.1	+0.5
	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	1.7	+0.6
	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	0.7	0.0
	27-30									0.2	0.1	0.3	0.2	0.0	0.2	0.3	0.1	0.2	0.3	0.2	0.0
Use PCP																					
% saying any friends	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	20.2	+0.5
	19-22	24.1	15.3	15.3	12.6	9.5	8.9	10.1	9.7	10.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26					11.6	6.8	7.4	6.9	5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									6.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
% 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	1.6	+0.2
	19-22	0.5	0.3	0.3	0.5	0.7	0.7	0.2	0.1	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26					0.6	0.0	0.4	0.0	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—

(Table continued on next page)

TABLE 7-2 (cont.)

Trends in Proportions of Friends Using Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	'97-'98 change
Take cocaine																					
% saying any friends	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	+2.7
	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	+4.7
	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	-1.0
	27-30									47.9	43.3	38.3	35.7	29.9	27.6	22.6	26.2	20.8	21.5	18.6	-2.9
% 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	+1.2s
	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	+0.7
	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	-0.2
	27-30									3.8	2.0	2.3	0.9	1.2	0.8	0.8	0.4	0.4	0.6	0.1	-0.5
Take crack																					
% saying any friends	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	+2.2
	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	+3.3
	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	0.0
	27-30									22.1	18.4	16.6	11.6	10.3	10.2	10.4	10.3	8.6	6.3	6.4	+0.1
% 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	+0.6
	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	+0.6
	23-26								0.8	0.9	0.8	0.5	0.1	0.1	0.5	0.2	0.0	0.3	0.5	0.4	-0.1
	27-30									1.2	0.9	0.9	0.3	0.0	0.6	0.3	0.1	0.2	0.2	0.1	-0.1
Take *MDMA* ("ecstasy")																					
% saying any friends	18											12.4	11.9	10.7	12.8	15.9	20.7	24.2	27.7	24.5	-3.2
	19-22										16.3	14.3	12.0	12.9	13.7	11.3	17.2	20.7	21.4	26.0	+4.6
	23-26										7.6	9.0	9.5	11.0	9.8	11.4	11.2	11.3	15.1	13.7	-1.3
	27-30										5.6	6.3	5.4	4.6	6.6	5.8	6.9	10.1	7.4	8.5	+1.1
% saying most or all	18											2.2	1.7	2.1	1.2	1.7	2.8	3.0	2.6	2.5	-0.1
	19-22										0.4	0.7	0.2	0.7	0.7	0.5	0.5	0.8	1.7	2.0	+0.3
	23-26										0.5	0.2	0.1	0.1	0.5	0.1	0.4	0.1	0.8	0.8	-0.1
	27-30										0.5	0.3	0.0	0.1	0.3	0.2	0.5	0.1	0.3	0.0	-0.3
Take heroin																					
% saying any friends	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	+0.9
	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	+2.0
	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	-0.4
	27-30									3.8	2.8	4.5	2.7	3.1	3.6	4.2	3.6	4.4	4.2	3.5	-0.7
% 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	+0.5
	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	+0.3
	23-26					0.4	0.2	0.2	0.0	0.2	0.4	0.2	0.3	0.4	0.1	0.2	0.2	0.0	0.7	0.0	-0.7
	27-30									0.2	0.1	0.2	0.2	0.0	0.2	0.3	0.0	0.0	0.0	0.1	+0.1

(Table continued on next page)

TABLE 7-2 (cont.)

Trends in Proportions of Friends Using Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	'97-'98 change
Take other narcotics																					
% saying any friends	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	+2.6
	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	+2.0
	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	-0.5
	27-30									12.1	8.6	9.1	9.3	7.5	8.2	8.0	7.7	9.5	7.9	8.3	+0.3
% 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	+1.5sss
	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	0.0	0.3	0.2	0.2	0.0	0.0	0.0	0.3	0.2	0.0	0.6	0.3	-0.3
	27-30									0.3	0.0	0.2	0.2	0.1	0.2	0.2	0.0	0.2	0.0	0.0	0.0
Take amphetamines																					
% saying any friends	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	+1.1
	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	+3.3
	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	-0.3
	27-30									26.1	21.6	19.3	17.0	15.3	14.0	13.1	13.7	15.5	12.9	11.0	-1.9
% 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	+1.0
	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	+0.5
	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	-0.2
	27-30									0.6	0.4	0.5	0.5	0.1	0.5	0.5	0.3	0.3	0.1	0.3	+0.2
Take barbiturates																					
% saying any friends	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	+2.4
	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	+2.7
	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	-0.5
	27-30									12.0	8.5	8.8	7.1	6.6	6.7	7.4	7.2	6.7	6.5	6.1	-0.4
% 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	+1.4ss
	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	-0.3
	23-26					0.4	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.3	0.2	0.0	0.0	0.8	0.0	-0.8
	27-30									0.2	0.0	0.4	0.2	0.2	0.2	0.0	0.0	0.3	0.0	0.0	0.0
Take quaaludes																					
% saying any friends	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	+1.3
	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	+1.4
	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	+0.1
	27-30									11.8	7.9	8.2	7.0	7.1	6.5	6.6	4.5	6.9	4.9	4.1	-0.8
% 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	+0.9s
	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	-0.1
	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	0.0	0.8	0.0	-0.8
	27-30									0.5	0.2	0.2	0.2	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0

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TABLE 7-2 (cont.)

Trends in Proportions of Friends Using Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	'97-'98 change
Take tranquilizers																					
% saying any friends	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	+1.8
	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	+2.0
	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	-1.1
	27-30									20.1	16.6	16.9	14.9	12.0	12.5	13.9	11.9	11.0	10.8	12.6	+1.8
% 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	+1.5sss
	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	-0.2
	23-26					0.4	0.3	0.5	0.0	0.3	0.4	0.2	0.3	0.1	0.4	0.2	0.0	0.0	1.1	0.1	-1.0
	27-30									0.5	0.3	0.4	0.2	0.1	0.2	0.4	0.0	0.2	0.0	0.0	0.0
Take steroids																					
% saying any friends	18											25.9	24.7	21.5	19.0	18.1	19.5	17.9	18.9	18.3	-0.6
	19-22										23.4	21.5	22.2	19.7	20.7	16.8	16.6	16.1	16.8	20.0	+3.3
	23-26										15.3	15.0	12.3	14.5	11.1	10.5	12.4	7.3	13.0	9.2	-3.8
	27-30										9.9	10.5	7.5	8.0	8.0	8.0	8.0	10.2	9.1	7.0	-2.1
% saying most or all	18											1.8	1.0	1.7	0.9	1.2	1.3	0.8	1.7	1.4	-0.3
	19-22										0.2	0.6	0.0	0.1	0.4	0.2	0.1	0.0	0.1	0.3	+0.2
	23-26										0.4	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.5	0.0	-0.5
	27-30										0.5	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Drink alcoholic beverages																					
% saying any friends	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	+0.5
	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	0.0
	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	+0.1
	27-30									96.1	96.0	95.2	94.4	95.6	93.4	93.3	93.3	93.1	95.1	93.1	-2.0
% 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	+0.1
	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	+5.6
	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	+0.8
	27-30									66.7	67.8	62.0	62.7	63.3	61.3	63.2	62.6	64.1	66.6	62.9	-3.6
Get drunk at least once a week																					
% saying any friends	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	-1.3
	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	+3.1
	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	+2.2
	27-30									66.3	61.8	65.4	65.2	65.5	64.5	62.7	67.1	66.7	65.4	65.5	+0.1
% saying most or all	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	+0.8
	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	+3.2
	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	-1.0
	27-30									5.2	6.3	6.7	6.6	5.9	6.7	6.4	7.9	8.6	7.7	9.3	+1.6

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TABLE 7-2 (cont.)

Trends in Proportions of Friends Using Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	'97-'98 change
Smoke cigarettes																					
% saying any friends	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	-0.4
	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	+1.3
	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	+3.2
	27-30									92.6	89.8	90.7	90.4	88.0	85.8	84.8	84.9	85.4	84.1	81.1	-3.0
% saying most or all	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	-0.5
	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	+3.7
	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	-0.2
	27-30									15.8	14.2	11.6	12.9	11.9	14.3	10.9	12.3	10.4	12.1	12.3	+0.2
Approximate Weighted N =	*18*	*2987*	*3307*	*3303*	*3095*	*2945*	*2971*	*2798*	*2948*	*2961*	*2587*	*2361*	*2339*	*2373*	*2410*	*2337*	*2379*	*2156*	*2292*	*2313*	
	19-22	*576*	*592*	*564*	*579*	*543*	*554*	*579*	*572*	*562*	*579*	*556*	*526*	*510*	*468*	*435*	*470*	*469*	*467*	*437*	
	23-26					*527*	*534*	*546*	*528*	*528*	*506*	*510*	*507*	*516*	*495*	*449*	*456*	*416*	*419*	*394*	
	27-30									*516*	*507*	*499*	*476*	*478*	*461*	*419*	*450*	*464*	*454*	*428*	

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.

'NA' indicates data not available.

'These estimates were derived from responses to the questions listed above. For the young adult sample, "any illicit drug" includes all of the drugs listed except cigarettes and alcohol.

TABLE 7-3

Trends in Exposure to Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Any illicit drug[a]																					
% saying any exposure	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	-1.6
	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	+3.8
	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	-4.8
	27-30									52.4	50.2	47.0	39.6	41.7	38.9	45.6	42.4	44.9	41.6	37.5	-4.1
% 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	-1.5
	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	-1.0
	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	-0.1
	27-30									13.7	12.0	10.8	8.2	10.5	9.0	12.5	8.5	10.1	10.3	8.5	-1.8
Any illicit drug[a] other than marijuana																					
% saying any exposure	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	-0.6
	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	+0.5
	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	+1.5
	27-30									35.8	33.7	31.5	25.8	26.6	24.2	25.8	21.1	21.8	21.4	15.4	-6.1s
% saying often exposed	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	-1.8
	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	-0.5
	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	0.0
	27-30									6.0	4.7	4.1	3.2	3.7	2.4	3.4	2.9	3.4	3.2	1.0	-2.2s
Marijuana																					
% saying any exposure	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	-1.3
	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	+3.7
	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	-4.2
	27-30									49.1	47.4	42.1	36.0	38.2	35.3	41.9	38.3	41.8	39.1	35.7	-3.4
% 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	-1.5
	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	-0.9
	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	+0.7
	27-30									10.9	9.8	8.5	6.7	8.9	7.6	10.7	7.4	9.1	8.9	8.1	-0.8
LSD																					
% saying any exposure	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	-2.8
	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	-1.3
	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	+2.2
	27-30									3.6	3.2	3.3	3.6	3.9	4.9	5.3	5.5	4.3	3.9	3.2	-0.7
% 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	-1.9ss
	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	+0.2
	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	-0.1
	27-30									0.3	0.2	0.5	0.2	0.2	0.5	0.5	0.2	0.2	0.0	0.0	0.0

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TABLE 7-3 (cont.)

Trends in Exposure to Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Other psychedelics																					
% saying any exposure	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	-1.9
	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	0.0
	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	+3.1
	27-30									5.0	3.4	3.4	3.4	2.1	3.7	3.4	4.2	3.2	2.9	2.6	-0.3
% 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	-1.1s
	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	-0.2
	23-26					0.1	0.3	0.5	0.6	0.8	0.1	0.4	0.4	0.0	0.2	0.4	0.3	0.3	0.2	0.0	-0.2
	27-30									0.2	0.4	0.5	0.3	0.1	0.5	0.2	0.3	0.2	0.5	0.0	-0.5
Cocaine																					
% saying any exposure	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	+1.0
	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	+2.8
	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	+2.1
	27-30									28.9	28.3	24.2	18.6	19.4	16.6	14.3	11.4	12.1	11.4	8.6	-2.8
% saying often exposed	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	-0.5
	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	+0.8
	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	-0.3
	27-30									4.4	3.9	2.9	2.2	2.0	1.2	1.5	1.4	1.9	1.6	0.8	-0.8
Heroin																					
% saying any exposure	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	-0.4
	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	+2.8
	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	+0.4
	27-30									2.1	1.4	1.5	0.9	1.0	2.0	2.0	1.7	1.5	1.3	1.4	+0.1
% 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	-0.3
	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	+0.3
	23-26					0.0	0.7	0.3	0.6	0.4	0.3	0.6	0.3	0.0	0.0	0.0	0.2	0.2	0.3	0.5	+0.2
	27-30									0.3	0.3	0.5	0.2	0.2	0.9	0.3	0.6	0.6	0.0	0.0	0.0
Other narcotics																					
% saying any exposure	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	+0.3
	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	+0.7
	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	+1.7
	27-30									6.5	6.5	5.8	5.5	3.7	5.6	5.9	5.7	4.7	4.9	3.6	-1.4
% saying often exposed	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	+0.3
	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	+0.2
	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	-0.2
	27-30									0.7	0.5	1.0	0.3	0.8	1.2	0.8	0.8	0.7	0.5	0.0	-0.5

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TABLE 7-3 (cont.)

Trends in Exposure to Drug Use
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Amphetamines																					
% saying any exposure	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	-1.1
	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	+0.3
	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	+3.0
	27-30									15.6	14.3	13.5	10.7	11.4	11.3	11.0	10.6	7.6	9.1	6.6	-2.5
% saying often exposed	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	-0.5
	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	-1.1
	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	+0.8
	27-30									2.0	2.0	1.2	0.8	0.8	1.3	0.7	1.6	1.8	1.0	0.2	-0.8
Barbiturates																					
% saying any exposure	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	0.0
	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	+1.8
	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	+3.6s
	27-30									8.0	6.8	5.9	5.4	5.2	5.7	4.5	5.2	3.5	3.8	2.7	-1.1
% 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	+0.2
	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	+0.5
	23-26					0.7	0.9	1.7	0.8	0.6	0.3	1.1	0.3	0.3	0.0	0.0	0.2	0.3	0.8	0.5	-0.3
	27-30									0.7	0.4	0.6	0.2	0.4	1.2	0.2	0.6	0.5	0.2	0.0	-0.2
Tranquilizers																					
% saying any exposure	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	-1.6
	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	+1.4
	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	+1.5
	27-30									15.0	11.6	11.1	9.7	10.3	10.4	9.0	11.2	9.6	9.6	6.1	-3.6s
% saying often exposed	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	-0.4
	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	+0.3
	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	+0.5
	27-30									1.4	0.3	1.7	0.8	1.3	1.3	1.0	1.1	0.8	1.2	0.2	-1.0
Alcoholic beverages																					
% saying any exposure	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	+0.8
	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	-1.3
	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	-4.0s
	27-30									87.1	88.4	86.2	87.7	87.3	86.6	86.2	89.3	89.2	86.4	88.4	+2.0
% 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	+0.6
	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	+3.8
	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	-5.2
	27-30									39.9	39.5	38.7	38.0	39.9	38.1	39.3	38.0	34.7	37.1	36.6	-0.5
Approximate Weighted N =	*18*	*3259*	*3608*	*3645*	*3334*	*3238*	*3252*	*3078*	*3296*	*3300*	*2795*	*2556*	*2525*	*2630*	*2730*	*2581*	*2608*	*2407*	*2595*	*2541*	
	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*	

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.

[a]These estimates were derived from responses to the questions listed above. For the young adult sample, "any illicit drug" includes all of the drugs listed except cigarettes and alcohol.

TABLE 7-4

Trends in Reported Availability of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
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	+0.8
	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	-0.7
	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	+3.1
	27-30									89.3	86.0	83.1	83.8	80.7	82.8	80.3	83.3	82.6	84.5	82.1	-2.4
Amyl & Butyl Nitrites	18	NA	NA	NA	NA	NA	NA	NA	23.9	25.9	26.8	24.4	22.7	25.9	25.9	26.7	26.0	23.9	23.8	25.1	+1.3
	19-22	NA	NA	NA	NA	NA	NA	NA	22.8	26.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26					NA	NA	NA	23.1	28.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									26.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
LSD	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	-1.9
	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	+3.4
	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	+1.1
	27-30									29.4	29.9	32.3	27.0	30.9	30.5	27.2	35.6	33.6	35.2	32.9	-2.3
PCP	18	NA	NA	NA	NA	NA	NA	NA	22.8	24.9	28.9	27.7	27.6	31.7	31.7	31.4	31.0	30.5	30.0	30.7	+0.7
	19-22	NA	NA	NA	NA	NA	NA	NA	21.7	24.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	23-26					NA	NA	NA	21.2	27.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
	27-30									24.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
MDMA	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.7	22.0	22.1	24.2	28.1	31.2	34.2	36.9	38.8	38.2	-0.6
	19-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26.6	24.9	27.1	23.9	27.0	29.3	33.4	35.6	39.4	+3.8
	23-26					NA	NA	NA	NA	NA	NA	21.4	23.1	26.4	24.0	26.0	27.8	28.7	31.1	30.1	-1.0
	27-30									NA	NA	27.1	20.8	22.2	22.8	21.9	27.1	29.3	24.3	26.4	+2.1
Some psychedelic other than LSD	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	+1.2
	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	+0.7
	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	+1.4
	27-30									28.6	29.6	30.8	24.9	24.8	25.4	24.7	29.3	25.9	28.0	25.2	-2.8
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	+2.8
	19-22	55.7	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	-2.0
	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	+4.9
	27-30									68.6	68.2	64.0	60.0	63.1	56.8	53.1	57.0	53.0	50.4	46.9	-3.5

(Table continued on next page)

TABLE 7-4 (cont.)

Trends in Reported Availability of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Crack	18	NA	NA	NA	NA	NA	NA	NA	41.1	42.1	47.0	42.4	39.9	43.5	43.6	40.5	41.9	40.7	40.6	43.8	+3.2
	19-22	NA	NA	NA	NA	NA	NA	NA	41.9	47.3	47.2	46.9	42.1	42.1	38.4	41.6	40.7	32.9	39.9	40.0	+0.1
	23-26					NA	NA	NA	44.5	53.0	49.9	46.9	42.0	42.6	42.5	42.4	42.3	37.9	37.2	38.4	+1.3
	27-30									46.5	46.8	46.8	43.1	45.2	45.8	41.1	44.7	39.9	36.5	33.3	-3.2
Cocaine powder	18	NA	NA	NA	NA	NA	NA	NA	52.9	50.3	53.7	49.0	46.0	48.0	45.4	43.7	43.8	44.4	43.3	45.7	+2.4
	19-22	NA	NA	NA	NA	NA	NA	NA	58.7	60.2	61.7	56.5	52.5	48.9	45.7	47.8	45.5	41.3	46.0	47.1	+1.1
	23-26					NA	NA	NA	64.9	69.1	60.1	58.6	53.2	56.4	50.5	49.7	49.6	45.9	43.6	44.4	+0.9
	27-30									63.5	62.8	57.9	55.8	56.8	55.0	48.9	52.9	48.4	45.1	43.9	-1.2
Heroin	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	+1.8
	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	+0.7
	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	+4.6
	27-30									23.6	27.4	29.5	22.1	25.6	28.5	24.4	30.7	29.5	30.0	28.3	-1.7
Some other narcotic	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	+3.9s
	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	+0.5
	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	+4.2
	27-30									31.6	36.2	36.1	29.0	31.8	33.0	34.8	36.9	37.2	35.2	32.2	-3.0
Amphetamines	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	+1.0
	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	+0.8
	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	+2.1
	27-30									54.3	58.6	55.3	54.4	50.4	52.9	48.3	53.7	51.7	48.1	41.4	-6.7s
"Ice"	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24.0	24.3	26.0	26.6	25.6	27.0	26.9	27.6	29.8	+2.2
	19-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24.0	21.8	22.5	20.9	24.7	25.5	25.4	29.3	31.0	+1.8
	23-26					NA	NA	NA	NA	NA	NA	22.3	20.0	21.3	22.9	24.5	24.7	24.7	25.8	30.2	+4.4
	27-30									NA	NA	27.3	19.7	22.0	21.2	21.7	25.8	26.1	25.1	22.6	-2.4
Barbiturates	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	+0.7
	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	-0.6
	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	+3.5
	27-30									43.2	44.5	44.2	38.5	37.8	39.7	37.4	39.9	41.2	39.1	33.9	-5.2

(Table continued on next page)

TABLE 7-4 (cont.)

Trends in Reported Availability of Drugs
Seniors (Age 18) and Young Adults in Modal Age Groups of 19-22, 23-26, and 27-30

(Entries are percentages)

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*																			'97-'98 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Tranquilizers	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	+0.8
	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	-1.0
	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	+3.0
	27-30									55.3	54.4	54.9	47.5	47.8	47.4	44.4	44.8	46.2	41.9	39.9	-2.0
Steroids	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	46.7	46.8	44.8	42.9	45.5	40.3	41.7	44.5	+2.8
	19-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44.1	44.8	46.3	41.7	40.9	41.8	40.8	39.2	39.2	0.0
	23-26					NA	NA	NA	NA	NA	NA	37.6	35.8	39.3	35.8	37.0	37.4	33.9	35.5	34.9	-0.5
	27-30									NA	NA	36.4	30.6	35.0	31.6	30.5	33.1	35.6	32.5	30.5	-2.0
Approximate Weighted N =	*18*	*3240*	*3578*	*3602*	*3385*	*3269*	*3274*	*3077*	*3271*	*3231*	*2806*	*2549*	*2476*	*2586*	*2670*	*2526*	*2552*	*2340*	*2517*	*2520*	
	19-22	*582*	*601*	*582*	*588*	*559*	*571*	*592*	*581*	*568*	*572*	*571*	*534*	*512*	*480*	*459*	*470*	*467*	*463*	*433*	
	23-26					*540*	*541*	*548*	*539*	*526*	*514*	*532*	*511*	*523*	*500*	*463*	*449*	*418*	*419*	*395*	
	27-30									*519*	*513*	*510*	*487*	*475*	*473*	*437*	*446*	*468*	*459*	*425*	

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.

'NA' indicates data not available.

*Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

Chapter 8

PREVALENCE OF DRUG USE AMONG COLLEGE STUDENTS

Every year since 1980, the Monitoring the Future has generated an excellent national sample of college students. (The absence of dropouts in the original high school senior samples should have practically no effect on the college sample, since very few dropouts go on to college.) Perhaps the major 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, we have decided to limit the age band to the most typical one for college attendance, i.e., one to four years past high school, which corresponds to the modal ages of 19 to 22 years old. According to statistics from the United States Bureau of the Census,[26] this age band should encompass about 69% of all undergraduate college students enrolled full-time in 1996, down some from the 79% covered in 1989. Although extending the age band to be covered by an additional two years would cover 77% of all enrolled college students, it would also reduce by two years the interval over which we could report trend data. Some special analyses conducted in 1985 indicated that the differences in *prevalence of use* estimates under the two definitions were extremely small. The annual prevalence of all drugs except cocaine shifted only about one- or two-tenths of a percent, based on comparisons made in 1985. Cocaine, which has the greatest amount of age-related change, would have had an annual prevalence rate only 0.8% higher if the six-year age span were included rather than the four-year age span. A replication of these analyses in 1997 yielded virtually the same results. Thus, for purposes of estimating all prevalence rates except lifetime prevalence, the four-year and six-year intervals are nearly interchangeable.

On the positive side, controlling the age band may be desirable for trend estimation purposes, because it controls for changes in the age composition of college students over the years. Otherwise, college students characterized in one year might represent a non-comparable segment of the larger population when compared to college students surveyed in another year.

College students are defined here as those follow-up respondents one to four years past high school who say they were registered as full-time students in a two- or four-year college at the beginning of March in the year in question. Thus, the definition encompasses only those who are one to four years past high school and are active, full-time undergraduate college students in the year in question. It excludes those who previously may have been college students or may have completed college.

Prevalence of use rates for college students and their same-age peers are provided in Tables 8-1 to 8-5. Having statistics for both groups makes it possible to see whether college students are above or below their age peers in terms of their usage rates. The college-enrolled sample now constitutes over half (56%) of the entire follow-up sample one to four years past high school. The differences reported here pertain to differences between those who are in college vs. those who are not, *among*

[26] U.S. Bureau of the Census. Available on Internet: http://www.census.gov.

high school graduates. If data from the missing high school dropout segment were available for inclusion as part of the noncollege segment any difference between the two groups likely would be enlarged; therefore, any differences observed here are only an indication of the direction and relative size of differences between the college and the *entire* noncollege-enrolled population, not an absolute estimate of them.

PREVALENCE OF DRUG USE: COLLEGE STUDENTS VS. THOSE NOT IN COLLEGE

- For all drugs except alcohol, lifetime prevalence of use among college students is lower than among their age-peers, but the degree of difference varies considerably by drug, as Table 8-1 shows. However, there is much less difference between the two groups on annual or 30-day prevalence of use rates (Tables 8-2 and 8-3).

- There is not a great deal of difference between those enrolled in college vs. their fellow high school graduates who are one to four years past high school in their annual prevalence of an overall index of ***any illicit drug*** use (college students at 38%, others at 36%), although college students are higher. However, college students are lower in their annual prevalence of ***any illicit drug other than marijuana*** (14% vs. 19%). In fact, at present the annual prevalence of most substances is lower among college students than among their age peers not in college. The major exceptions occur for ***any illicit drug, marijuana, MDMA,*** and ***alcohol.***

- Annual ***marijuana*** use is slightly higher among college students than among high school graduates of the same age (36% vs. 33%). However, their rate of current ***daily marijuana*** use is considerably lower (4.0% vs. 6.9%). (See Table 8-4 for the prevalence of current daily use.)

- ***Amphetamines*** and ***cocaine*** show the next largest absolute difference in annual prevalence among the illicit drugs. (5.1% for college students vs. 7.8% for those not in college for amphetamines and 4.6% vs. 7.1%, respectively, for cocaine.)

- The next largest absolute difference occurs for ***barbiturates***, with 2.5% of the college students vs. 4.6% of the others reporting use in the past year, followed by ***LSD*** at 4.4% vs. 6.1% and ***ice***, at 1.0% vs. 2.3%.

- College students are below their noncollege age peers in annual usage rates for ***crack*** (1.0% vs. 1.8%, respectively).

- Annual use of ***hallucinogens*** is less prevalent among college students than among their noncollege age peers, at 7.2% vs. 7.7%, respectively.

- ***Tranquilizers*** were used by fewer college students (3.9% annual prevalence) than 19-22 year olds not in college full-time (4.8%) in 1998.

- In 1998, use of ***heroin*** in the past year among college students was less than among those respondents not in college (0.6% vs. 0.9%).

- Usage rates for ***inhalants*** are only slightly lower among college students than among the noncollege group (3.0% vs. 3.5%). (See Table 8-2.)

- ***MDMA*** and ***narcotics other than heroin*** had similar usage rates among college students and their same-age peers (3.9% for MDMA among both groups, and 4.2% and 4.3%, respectively, for narcotics other than heroin.)

- In 1998, college students have higher prevalences than their age peers for lifetime, annual, and monthly use of ***alcohol*** (89% vs. 87% for lifetime, 85% vs. 81% for annual, and 68% vs. 60% for monthly).

  They also have a higher prevalence of ***occasions of heavy drinking*** (five or more drinks in a row in the past two weeks), which is 39% among college students vs. 35% among their age peers. In sum, college students are more likely to engage in occasional heavy drinking, most of it probably on the weekend, but they have a slightly lower rate of daily drinking (3.9%) than their age peers (5.5%).

- The largest absolute difference between college students and others their age occurs for ***cigarette smoking***. For example, their prevalence of daily smoking is only 18% vs. 30% for high school graduates the same age who are currently not full-time college students. Smoking at the rate of half-pack a day stands at 11% vs. 23% for these two groups, respectively. Recall that the high school senior data show the college-bound to have much lower smoking rates in high school than the noncollege-bound; thus, these substantial differences observed at college age actually preceded college attendance.[27]

GENDER DIFFERENCES IN PREVALENCE OF USE AMONG COLLEGE STUDENTS

Tabular data are provided separately for male and female college students and their same-age peers in Tables 8-1 to 8-5.

- Most of the gender differences among college students replicate those discussed earlier for all young adults one to fourteen years past high school, and they in turn replicate gender differences among secondary school students

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

for the most part. That means that among college students, males have higher annual prevalence rates for most of the illicit drugs. The rates for use of ***any illicit drug*** are 40% vs. 36%, for ***any illicit drug other than marijuana***, 17% vs. 12%, and for ***marijuana***, 39% vs. 34%. Large gender differences occur for ***hallucinogens*** (11% for males vs. 5% for females) and ***LSD*** specifically (6% vs. 3%).

- ***Daily marijuana*** use is considerably higher among male college students (6%) than among females (3%).

- The annual prevalence of use rate for ***alcohol*** is similar for male and female college students (84% vs. 85%, respectively), but the 30-day rate is somewhat higher among males (73% vs. 65%). Males are much higher on ***daily drinking*** (6% vs. 3%) and ***occasional heavy drinking*** as defined here (52% vs. 31%).

  Male college students also have higher rates of ***occasional heavy drinking*** (52%) when compared with their male counterparts who are not in college (47%). This difference occurs also for females (31% and 25%, respectively).

- ***Cigarette smoking*** is the one substance-using behavior that, in the past, reflected a gender difference among college students that was different than the one observed among their counterparts not in college. While the noncollege segment of this age group generally has shown a slightly higher rate of smoking among males than among females (e.g., in 1998, 27% of noncollege males smoked a half-pack or more per day compared to 20% of noncollege females), college women were as likely to be current smokers as college men. This continued to be true in 1998; for monthly cigarette use, male and female college students have similar rates (32% vs. 29%, respectively). There is now a larger difference between male and female college students in their prevalence of half-pack-a-day smoking (14% vs. 10%, respectively), although this generally was not the case prior to 1998.

TABLE 8-1

Lifetime Prevalence for Various Types of Drugs, 1998: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School

(Entries are percentages)

	Total		Males		Females	
	Full-time College	Others	Full-time College	Others	Full-time College	Others
Any Illicit Drug[a]	52.9	59.9	54.4	62.1	52.0	58.0
Any Illicit Drug[a] Other than Marijuana	24.8	33.5	27.3	35.9	23.3	31.7
Marijuana	49.9	56.6	52.8	58.6	48.1	54.9
Inhalants[b,c]	12.8	17.2	13.8	19.2	12.1	15.5
Hallucinogens[c]	15.2	19.5	19.2	22.4	12.7	17.2
LSD	13.1	18.4	15.9	21.3	11.4	16.0
Cocaine	8.1	13.0	9.8	14.1	7.0	12.1
Crack	2.2	5.2	2.2	5.1	2.1	5.2
MDMA ("Ecstasy")[d]	6.8	10.0	7.8	7.9	6.2	11.8
Heroin	1.7	2.3	2.2	2.4	1.4	2.2
Other Narcotics[e]	8.7	9.6	10.0	10.1	7.8	9.2
Amphetamines, Adjusted[e,f]	10.6	16.9	11.0	17.4	10.3	16.6
"Ice"[d]	2.2	5.2	2.7	5.4	1.9	5.1
Barbiturates[e]	5.7	8.9	6.7	8.1	5.1	9.6
Tranquilizers[e]	7.7	10.2	8.5	8.7	7.2	11.3
Alcohol	88.5	87.0	87.4	86.0	89.2	87.8
Cigarettes	NA	NA	NA	NA	NA	NA
Approximate Weighted N =	*1440*	*1120*	*570*	*500*	*880*	*610*

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

'NA' indicates data not available.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]This drug was asked about in five of the six questionnaire forms. Total N in 1998 for college students is approximately 1200.
[c]Unadjusted for known underreporting of certain drugs. See text for details.
[d]This drug was asked about in two of the six questionnaire forms. Total N in 1998 for college students is approximately 480.
[e]Only drug use which was not under a doctor's orders is included here.
[f]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 8-2

Annual Prevalence for Various Types of Drugs, 1998: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School

(Entries are percentages)

	Total		Males		Females	
	Full-time College	Others	Full-time College	Others	Full-time College	Others
Any Illicit Drug[a]	37.8	36.4	40.1	38.3	36.4	34.9
Any Illicit Drug[a] Other than Marijuana	14.0	19.0	17.0	20.3	12.1	18.0
Marijuana	35.9	32.9	38.8	34.9	33.9	31.2
Inhalants[b,c]	3.0	3.5	3.4	3.5	2.8	3.4
Hallucinogens[c]	7.2	7.7	10.9	10.7	4.8	5.3
LSD	4.4	6.1	6.3	8.4	3.2	4.2
Cocaine	4.6	7.1	6.0	7.5	3.6	6.7
Crack	1.0	1.8	0.9	1.7	1.1	1.8
MDMA ("Ecstasy")[d]	3.9	3.9	2.9	1.8	4.6	5.7
Heroin	0.6	0.9	1.0	0.9	0.4	0.9
Other Narcotics[c]	4.2	4.3	6.0	4.0	3.1	4.6
Amphetamines, Adjusted[c,f]	5.1	7.8	4.5	7.4	5.4	8.1
"Ice"[d]	1.0	2.3	1.3	3.2	0.8	1.6
Barbiturates[c]	2.5	4.6	2.9	3.6	2.3	5.5
Tranquilizers[c]	3.9	4.8	4.9	3.7	3.2	5.7
Alcohol	84.6	81.0	83.9	81.4	85.0	80.7
Cigarettes	44.3	49.5	45.6	51.6	43.5	47.8
Approximate Weighted N =	*1440*	*1120*	*570*	*500*	*880*	*610*

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

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]This drug was asked about in five of the six questionnaire forms. Total N in 1998 for college students is approximately 1200.
[c]Unadjusted for known underreporting of certain drugs. See text for details.
[d]This drug was asked about in two of the six questionnaire forms. Total N in 1998 for college students is approximately 480.
[e]Only drug use which was not under a doctor's orders is included here.
[f]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 8-3

Thirty-Day Prevalence for Various Types of Drugs, 1998: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School

(Entries are percentages)

	Total		Males		Females	
	Full-time College	Others	Full-time College	Others	Full-time College	Others
Any Illicit Drug[a]	19.7	21.0	23.1	24.1	17.6	18.4
Any Illicit Drug[a] Other than Marijuana	6.1	8.3	8.6	8.8	4.6	7.8
Marijuana	18.6	19.1	22.4	22.7	16.3	16.2
Inhalants[b,c]	0.6	1.3	0.8	1.1	0.6	1.4
Hallucinogens[c]	2.1	2.2	3.2	3.1	1.4	1.4
LSD	1.5	1.6	2.4	2.2	0.9	1.2
Cocaine	1.6	2.7	2.1	2.7	1.2	2.7
Crack	0.2	0.5	0.3	0.5	0.1	0.5
MDMA ("Ecstasy")[d]	0.8	1.5	0.6	0.5	0.9	2.4
Heroin	0.1	0.3	0.2	0.2	0.0	0.4
Other Narcotics[c]	1.1	1.3	2.0	1.4	0.5	1.2
Amphetamines, Adjusted[e,f]	1.7	3.2	1.6	3.0	1.7	3.3
"Ice"[d]	0.3	0.4	0.0	0.6	0.5	0.3
Barbiturates[c]	1.1	1.6	1.5	1.2	0.9	1.8
Tranquilizers[c]	1.3	1.4	2.4	1.1	0.6	1.6
Alcohol	68.1	60.4	72.9	68.7	65.0	53.6
Cigarettes	30.0	38.3	31.6	41.7	28.9	35.6
Approximate Weighted N =	*1440*	*1120*	*570*	*500*	*880*	*610*

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

'*' indicates a prevalence rate of less than 0.05% but greater than true zero.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]This drug was asked about in five of the six questionnaire forms. Total N in 1998 for college students is approximately 1200.
[c]Unadjusted for known underreporting of certain drugs. See text for details.
[d]This drug was asked about in two of the six questionnaire forms. Total N in 1998 for college students is approximately 480.
[e]Only drug use which was not under a doctor's orders is included here.
[f]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 8-4

Thirty-Day Prevalence of Daily Use for Various Types of Drugs, 1998: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School

(Entries are percentages)

	Total		Males		Females	
	Full-time College	Others	Full-time College	Others	Full-time College	Others
Marijuana	4.0	6.9	6.3	9.0	2.5	5.1
Cocaine	0.0	0.1	0.0	0.2	0.0	0.0
Amphetamines, Adjusted[a,b]	0.1	0.2	0.2	0.2	*	0.2
Alcohol						
Daily	3.9	5.5	5.8	8.7	2.7	2.9
5+ drinks in a row in past 2 weeks	38.9	35.0	51.5	47.4	30.9	24.9
Cigarettes						
Daily (any)	18.0	29.9	19.6	31.9	16.9	28.2
Half-pack or more per day	11.3	23.0	13.8	26.7	9.7	19.9
Approximate Weighted N =	*1440*	*1120*	*570*	*500*	*880*	*610*

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

'*' indicates a prevalence rate of less than 0.05% but greater than true zero.

[a]Only drug use which was not under a doctor's orders is included here.
[b]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 8-5

Lifetime, Annual, and Thirty-Day Prevalence of an Illicit Drug Use Index[a], 1998: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School

(Entries are percentages)

	Total		Males		Females	
	Full-time College	Others	Full-time College	Others	Full-time College	Others
	Percentage Reporting Use in Lifetime					
Any Illicit Drug	52.9	59.9	54.4	62.1	52.0	58.0
Any Illicit Drug Other than Marijuana	24.8	33.5	27.3	35.9	23.3	31.7
	Percentage Reporting Use in Last Twelve Months					
Any Illicit Drug	37.8	36.4	40.1	38.3	36.4	34.9
Any Illicit Drug Other than Marijuana	14.0	19.0	17.0	20.3	12.1	18.0
	Percentage Reporting Use in Last Thirty Days					
Any Illicit Drug	19.7	21.0	23.1	24.1	17.6	18.4
Any Illicit Drug Other than Marijuana	6.1	8.3	8.6	8.8	4.6	7.8
Approximate Weighted N =	*1440*	*1120*	*570*	*500*	*880*	*610*

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

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

Chapter 9

TRENDS IN DRUG USE AMONG COLLEGE STUDENTS

Beginning in the mid-1960s, illicit drug use increased dramatically among American college students, then spread quickly to their noncollege age peers, and eventually down the age spectrum to high school students, and even to middle school students. College students were thus the leading edge of social change in illicit drug use. As we shall see in this chapter, that role seems to have shifted to secondary school students in recent times, as the relapse of the epidemic in the nineties radiated up the age spectrum from early adolescence.

In this chapter we continue to use the same definition of college students: high school graduates one to four years past high school who are enrolled full-time in a two-year or four-year college at the beginning of March in the year in question. For comparison purposes, trend data are provided on the remaining follow-up respondents who are also one to four years past high school. (See Figures 9-1 through 9-14.) Because the rate of college enrollment declines steadily with number of years beyond high school, the comparison group is slightly older on the average than the college-enrolled group. It is also worth noting that the proportion of young adult high school graduates one to four years beyond high school who are enrolled full-time in college has increased considerably. In 1998, about 56% of the weighted number of respondents met our definition of college students, compared with only 38% in the 1980 survey.

The reader is reminded that the difference between the enrolled and other group shows the degree to which college students are above or below average for other high school *graduates* in this age band. Were we able to include the high school dropout segment in the calculation for the noncollege group, many differences with the college-enrolled likely would be accentuated.

For each year given, there are approximately 1,100-1,500 weighted respondents constituting the college student sample (see Table 9-5 for N's per year) and roughly 1,100-1,700 respondents constituting the "other" group one to four years past high school. Comparisons of the trends for these two groups are given below. Because it was not until 1980 that enough follow-up years had accrued to characterize young people one to four years past high school, the comparisons begin with that year.

TRENDS IN PREVALENCE 1980-1998: COLLEGE STUDENTS VS. THOSE NOT IN COLLEGE

- The proportion of college students using ***any illicit drug*** in the twelve months prior to the survey (i.e., the annual prevalence rate) dropped fairly steadily between 1980 and 1991 (from 56% to 29%) (see Table 9-2). In other words, illicit drug use fell by nearly half over the 11-year period 1980-1991. After 1991, there was a modest increase to 34% by 1997, before use jumped significantly to 38% in 1998. Their noncollege peers moved very similarly

across that 18-year interval. High school seniors also showed a very similar trajectory in the decline phase through 1991, but the rise in use since then among high school seniors has been distinctly sharper, as Figure 9-1 illustrates.

- Use of ***any illicit drugs other than marijuana*** declined fairly steadily among college students between 1980 and 1994, with annual prevalence dropping by nearly two-thirds from 32% to 12% (Table 9-2). This generally paralleled the trend for the noncollege group as well as for high school seniors. All three groups showed some increase in use during the 1990s—the high school seniors after 1992, the noncollege group after 1993, and the college students after 1995. However, the rise in use of illicit drugs other than marijuana was not as sharp among college students as it was in the two other groups (Figure 9-2).

- In general, among those enrolled in college, the trends during the 1980s for most individual classes of illicit drugs tended to parallel those for the noncollege group, as well as the trends observed among seniors. During the 1990s, however, there was more divergence in the trends, with the college students usually showing less increase than the high school seniors and, for some drugs, less increase than their age peers not in college.

- The annual prevalence of ***marijuana*** use among college students decreased steadily from 1981 through 1991, dropping by nearly half from 51% to 26.5%. Their noncollege peers showed a comparable decline over the same time interval (Figure 9-3a). Since 1991, annual prevalence has increased by nearly ten percentage points among college students, by seven percentage points among other young adults, and by fourteen percentage points among twelfth graders. College students showed a significant increase in marijuana use in 1998, as use declined or leveled in the other two groups.

- ***Daily marijuana*** use among college students (Figure 9-3b) fell significantly between 1980 and 1986, from 7.2% to 2.1%, as it did for those not in college and among high school seniors. (The latter two groups were able to show sharper declines because they started higher than the college students in 1980.) After 1986 the decline decelerated. The rate stood at 1.8% in 1994, the same rate as in 1991. In sum, the proportion of American college students who actively smoked marijuana on a daily basis dropped by about three-fourths between 1980 and 1991, leveled until 1994, and began increasing thereafter, reaching 4% in 1998. The other two groups showed considerably larger increases after 1993 than did college students.

- An appreciable and ongoing decline occurred for ***amphetamine*** use between 1981 and 1991 (Figure 9-10). Annual prevalence among college students dropped by more than eight-tenths, from 22% in 1981 to 4% in 1991.

Proportionately, this was a larger drop than among high school seniors, but fairly parallel to the overall change among age peers not in college. Use among college students and their noncollege age peers leveled for a year before beginning to increase in both groups after 1992 and 1993, respectively, but after some rise, use among both groups leveled off a bit after 1995. Over the years, those not in college consistently have reported a higher rate of amphetamine use than the college students, and since the mid-1980s high school seniors have reported higher rates still.

- During the early 1980s, one of the largest proportional declines observed among college students was for ***LSD*** (see Figure 9-6). Annual prevalence fell from 6.3% in 1982 to 2.2% in 1985. After 1985, use increased, reaching 5.7% by 1992. Following this increase, use has remained fairly level through 1997, while use among young adults not in college and high school seniors showed a considerable increase between 1993 and 1996. For whatever reason, college students did not show the same resurgence in LSD use in the mid-1990s that other young people did. By 1998, use among all these groups had begun to decline.

- When our college data was first available in 1980, ***barbiturate*** use (Figure 9-11) already was quite low among college students (at 2.9% annual prevalence), but it fell by more than half to 1.3% by 1985. This proportional decline was, once again, sharper than among high school students and less sharp than among the young adults not in college, both of whom started at a higher level of use. Annual prevalence remained essentially unchanged between 1985 and 1993 among all three groups (see Figure 9-11). All three groups then showed some increase in use between 1993 (or 1994 in the case of the college students) and 1997, and a leveling in 1998.

- Figure 9-12 shows that the annual prevalence of ***tranquilizer*** use among college students dropped by half in the period 1980-1984, from 6.9% to 3.5%, and again fell by half between 1984 and 1994, to 1.8% .[28] After this long period of decline, tranquilizer use began to increase, reaching 3.9% in 1998. Use in the noncollege segment dropped more sharply in the early 1980s, reducing the differences among the three groups. Tranquilizer use also dropped steadily among seniors, from 10.8% in 1977 to 2.8% in 1992, before rising to 5.5% by 1998.

- In 1994, the use of ***narcotics other than heroin*** (Figure 9-9) by college students was about half what it was in 1980 (2.4% in 1994 vs. 5.1% in 1980) as a result of a gradual decline over the interval. This trend closely parallels use among noncollege young adults and high school seniors. As with a

[28]The use of barbiturates and tranquilizers very likely was dropping during the latter half of the 1970s, judging by the trends among high school seniors.

number of other drugs, use among seniors began to rise after 1992, but use among college students did not begin to increase until after 1994.

- Like the high school seniors, college students showed a relatively stable pattern of ***cocaine*** use between 1980 and 1986, followed by a substantial decline in annual prevalence from 17% in 1986 to 2% in 1994—a drop of nearly nine-tenths (Figure 9-8). Their noncollege counterparts also showed a large decline from 19% in 1986 to 5.1% in 1994. Use among college students dropped more sharply than among their age-peers or among high school seniors, with the result that, since 1990, there has been little or no difference between high school seniors and college students in annual prevalence rates for cocaine and a larger proportioned difference between college students and their age-peers. Between 1994 and 1998 annual cocaine prevalence for college students increased significantly, from a 14-year low of 2.0% in 1994 to 4.6% in 1998. High school seniors and noncollege students have also shown an increase in annual prevalence of cocaine use since 1992 and 1993, respectively.

- College students have shown some shifts in ***alcohol*** use which are different from those observed either among their age- peers not in college or among high school seniors. As can be seen in Figure 9-13c, both the noncollege segment and the high school seniors showed fairly substantial declines from 1981 through 1990 in the prevalence of having ***five or more drinks in a row*** during the two weeks prior to the survey. (The seniors then showed further decline for three more years.) In contrast, the college students, showed no decline in binge drinking 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 heavy drinking dropped by 14 percentage points for high school seniors, by 11 percentage points for the noncollege 19 to 22 year olds, but by only 2 percentage points among college students. Since 1992 there has been no further divergence between college students and the other two groups and, if anything, some convergence as binge drinking held fairly steady among college students, but rose some among their age-peers and among twelfth graders.

  It is interesting to conjecture about why college students did not show much decline in heavy drinking for a decade (1981-1991) while their noncollege peers and high school seniors did. One possibility is that campuses provided some insulation to the effects of changes in the drinking age laws. Also, in college, individuals who are under the legal drinking age are mixed in with peers who are of legal age to purchase alcohol in a way that is no longer true in high schools and less true, perhaps, for those 19 to 22 who are not in college. Finally, a lot of alcohol advertising is directed at the college student population.

On the other hand, college students generally have had slightly lower rates of ***daily drinking*** than their age group taken as a whole, though by the early 1990s such differences nearly disappeared (Figure 9-13b). Daily drinking among the young adults not enrolled in college declined from 8.7% in 1981 to 6.5% in 1984, remained essentially unchanged through 1988, declined further (to 3.2% by 1994), and has since increased to 5.5% in 1998. The daily drinking estimates for college students—which appear a little less stable, perhaps due to smaller sample sizes in the 1980s—showed little or no decline between 1980 (6.5%) and 1984 (6.6%), but a considerable decline through 1995 to 3.0%, followed by some increase to 3.9% in 1998. High school seniors also showed a similar pattern of daily drinking with a long period of decline, followed by a somewhat earlier reversal, beginning in 1994.

- ***Cigarette smoking*** among American college students declined modestly in the first half of the 1980s. Thirty-day prevalence fell from 26% to 22% between 1980 and 1985, remained fairly stable through 1990, then increased gradually, reaching 30% in 1998. The ***daily smoking*** rate fell from 18.3% in 1980 to 12.7% in 1986 as the cohorts who had lower initiation rates by senior year replaced the earlier, heavier smoking cohorts. It remained fairly level through 1990 (12.1%), but then rose to 18% by 1998.

  While the rates of smoking consistently have been lower among college students than among those not in college, their trends diverged some after 1986, as smoking rates stabilized among college students but continued to decline among young adults not in college (Figure 9-14a). Both groups have shown an increase in smoking in the 1990s—from about 1991-1996, for the noncollege group, and from about 1989-1998 among the college students. High school seniors exhibited an increase from 1992-1997.

- For many drugs (***stimulants, barbiturates***, and ***tranquilizers***) differences between college students and their noncollege-age peers narrowed over the years. Much of this is due to overall declines in usage rates generally, but some may also reflect the increasing proportion of the age group going to college.

  The overall drug use trends among college students also are parallel, for the most part, to the trends among high school seniors, although declines in many drugs over the decade of 1980 to 1990 were proportionately larger among college students, and for that matter among all young adults of college age, than among high school seniors. Despite parallel trends to the early 1990s, the high school seniors have shown a larger, and often earlier increase in the use of a number of drugs in the years since; and as indicated in Volume I, the eighth and tenth graders in secondary school showed increases a year earlier than the seniors. It is clear that this most recent upsurge or "relapse phase" in the illicit drug epidemic did not originate on the nation's campuses, as did

the original epidemic. It originated among secondary school children, and the younger ones at that.

GENDER DIFFERENCES IN TRENDS AMONG COLLEGE STUDENTS

One trend which is not obvious from the figures included here is the fact that the proportion of college students who are female has been rising slowly. Females constituted 50% of our 1980 sample of college students compared to 61% of our 1998 sample. Given that substantial gender differences exist in the use of some drugs, we have been concerned all along 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 that population. For that reason, in particular, we have consistently presented separate trend lines for the male and female segments of the college student population. Differences in the trends observed for these two groups are illustrated in the lower panels of Figures 9-1 through 9-14, and are discussed below.

In general, trends in the use of the various drugs, and in the overall drug use indexes, have been highly parallel for male and female college students, as an examination of the relevant figures will show. The most noteworthy exceptions are mentioned below.

- Certain drug use measures showed a convergence of usage levels between the genders, mainly because they were converging toward zero. ***Daily marijuana*** use is one such example, with the decline among males between 1980 and 1986 narrowing the gap between the genders. Since 1986 there has been no further narrowing. In 1998, the rates were 6.3% vs. 2.5% for male and female college students, respectively. (See Figure 9-3b.)

- After 1986, ***cocaine*** use dropped more steeply for males than for females in general, and among male college students in particular, considerably narrowing the sizable gap between the genders (see Figure 9-8). Since 1991 both genders moved pretty much in parallel.

- Like a number of other drugs, ***methaqualone*** also showed a convergence in use through 1989, with use among males declining more than among females (no figure given).

- Amphetamine use (Figure 9-10) also showed some convergence in the early 1980s due to a greater decline among males. In fact, male and female college student use has been essentially equal for the past ten years.

- The annual prevalence of ***alcohol*** use has been virtually identical for the two genders throughout the duration of the study (Figure 9-13a), but males have consistently had higher rates of ***daily drinking*** and ***binge drinking*** (Figures 9-13b and 9-13c). From 1988 through 1994, binge drinking among college females decreased slightly (from 37% to 31%); but heavy drinking among

college males has declined more, from a high point in 1986 of 58% to a low of 47% in 1995 (see Figure 9-13c). There is a more recent indication of an increase in binge drinking among college males, but not among females, since 1995.

- Between 1980 and 1992, the 30-day prevalence of ***cigarette smoking*** was consistently higher among college females than males, despite decreases for both genders during the first half of the decade and increases for both genders from 1989 to 1993 (Figures 9-14a, 9-14b, and 9-14c). However, between 1980 and 1989 the gap in 30-day prevalence narrowed, because use by female college students declined some, while use by male college students did not. After 1989, the gap remained quite small, but the genders reversed position, with males catching up to, and passing females, in their rate of smoking by 1994. (A similar reversal occurred among seniors a few years earlier.) In 1998, 32% of college males report smoking in the prior 30 days vs. 29% of the college females.

  While the rise in smoking among college students has been longer-term and more gradual than in the other two groups, it nevertheless has been substantial, rising by nearly half between 1989 (21%) and 1998 (30%).

TABLE 9-1

Trends in Lifetime Prevalence of Various Types of Drugs Among College Students 1-4 Years Beyond High School

(Entries are percentages)

	Percentage who used in lifetime																		
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Approx. Wtd. N =	*(1040)*	*(1130)*	*(1150)*	*(1170)*	*(1110)*	*(1080)*	*(1190)*	*(1220)*	*(1310)*	*(1300)*	*(1400)*	*(1410)*	*(1490)*	*(1490)*	*(1410)*	*(1450)*	*(1450)*	*(1480)*	*(1440)*	
Any Illicit Drug[a]	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	+3.9s
Any Illicit Drug[a] Other than Marijuana	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	+0.4
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	+3.8s
Inhalants[b,c]	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	+0.4
Hallucinogens[c]	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	+1.4
LSD	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	+1.5
Cocaine	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	+2.5ss
Crack[d]	NA	NA	NA	NA	NA	NA	NA	3.3	3.4	2.4	1.4	1.5	1.7	1.3	1.0	1.8	1.2	1.4	2.2	+0.7
MDMA ("ecstasy")[e]	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.8	3.9	2.0	2.9	2.3	2.1	3.1	4.3	4.6	6.8	+2.2
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	+0.8s
Other Narcotics[f]	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	+0.5
Amphetamines[f]	29.5	29.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Amphetamines, Adjusted[f,g]	NA	NA	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	0.0
Crystal meth. (ice)[h]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0	1.3	0.6	1.6	1.3	1.0	0.8	1.6	2.2	+0.7
Sedatives[f]	13.7	14.2	14.1	12.2	10.8	9.3	8.0	6.1	4.7	4.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Barbiturates[f]	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	+0.5
Methaqualone[f]	10.3	10.4	11.1	9.2	9.0	7.2	5.8	4.1	2.2	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Tranquilizers[f]	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	+0.8
Alcohol[i]	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	+1.2
Cigarettes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—

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. 'NA' indicates data not available.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (until 1990), or tranquilizers not under a doctor's orders.

[b]This drug was asked about in four of the five questionnaire forms in 1980-1989, and in five of the six questionnaire forms in 1990-1998. Total N in 1998 (for college students) is 1200.

[c]Unadjusted for known underreporting of certain drugs. See text for details.

[d]This drug was asked about in two of the five questionnaire forms in 1987-1989, and in all six questionnaire forms in 1990-1998.

[e]This drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1998. Total N in 1998 (for college students) is 480.

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

[g]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[h]This drug was asked about in two of the six questionnaire forms. Total N in 1998 (for college students) is 480.

[i]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.

TABLE 9-2

Trends in Annual Prevalence of Various Types of Drugs Among College Students 1-4 Years Beyond High School

(Entries are percentages)

	Percentage who used in last twelve months																			
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
Approx. Wtd. N =	*(1040)*	*(1130)*	*(1150)*	*(1170)*	*(1110)*	*(1080)*	*(1190)*	*(1220)*	*(1310)*	*(1300)*	*(1400)*	*(1410)*	*(1490)*	*(1490)*	*(1410)*	*(1450)*	*(1450)*	*(1480)*	*(1440)*	
Any Illicit Drug[a]	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	+3.7s
Any Illicit Drug[a] Other than Marijuana	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	-1.8
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	+4.3s
Inhalants[b,c]	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	-1.0
Hallucinogens[c]	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	-0.5
LSD	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	-0.6
Cocaine	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	+1.2
Crack[d]	NA	NA	NA	NA	NA	NA	1.3	2.0	1.4	1.5	0.6	0.5	0.4	0.6	0.5	1.1	0.6	0.4	1.0	+0.6
MDMA ("ecstasy")[e]	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.3	2.3	0.9	2.0	0.8	0.5	2.4	2.8	2.4	3.9	+1.5
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	+0.3
Other Narcotics[f]	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	0.0
Amphetamines[f]	22.4	22.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Amphetamines, Adjusted[f,g]	NA	NA	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	-0.7
Crystal meth. ("ice")[h]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.1	0.2	0.7	0.8	1.1	0.4	0.8	1.0	+0.2
Sedatives[f]	8.3	8.0	8.0	4.5	3.5	2.5	2.6	1.7	1.5	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Barbiturates[f]	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	-0.5
Methaqualone[f]	7.2	6.5	6.6	3.1	2.5	1.4	1.2	0.8	0.5	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Tranquilizers[f]	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	+0.1
Alcohol[i]	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	+2.1
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	+0.7

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 a percentage of less than 0.05% but greater than true zero. 'NA' indicates data not available.

[a] Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (until 1990), or tranquilizers not under a doctor's orders.

[b] This drug was asked about in four of the five questionnaire forms in 1980-1989, and in five of the six questionnaire forms in 1990-1998. Total N in 1998 (for college students) is 1200.

[c] Unadjusted for known underreporting of certain drugs. See text for details.

[d] This drug was asked about in two of the five questionnaire forms in 1987-1989, and in all six questionnaire forms in 1990-1998.

[e] This drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1998. Total N in 1998 (for college students) is 480.

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

[g] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[h] This drug was asked about in two of the six questionnaire forms. Total N in 1998 (for college students) is 480.

[i] 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.

TABLE 9-3

Trends in Thirty-Day Prevalence of Various Types of Drugs Among College Students 1-4 Years Beyond High School

(Entries are percentages)

	Percentage who used in last thirty days																			
Approx. Wtd. N =	1980 *(1040)*	1981 *(1130)*	1982 *(1150)*	1983 *(1170)*	1984 *(1110)*	1985 *(1080)*	1986 *(1190)*	1987 *(1220)*	1988 *(1310)*	1989 *(1300)*	1990 *(1400)*	1991 *(1410)*	1992 *(1490)*	1993 *(1490)*	1994 *(1410)*	1995 *(1450)*	1996 *(1450)*	1997 *(1480)*	1998 *(1440)*	'97-'98 change
Any Illicit Drug[a]	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	+0.5
Any Illicit Drug[a] Other than Marijuana	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	-0.7
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	+1.0
Inhalants[b,c]	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	-0.1
Hallucinogens[c]	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	0.0
LSD	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	+0.4
Cocaine	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	-0.1
Crack[d]	NA	NA	NA	NA	NA	NA	NA	0.4	0.5	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	-0.1
MDMA ("ecstasy")[e]	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3	0.6	0.2	0.4	0.3	0.2	0.7	0.7	0.8	0.8	0.0
Heroin	0.3	0.0	0.0	0.0	*	*	0.0	0.1	0.1	0.1	0.0	0.1	0.0	*	0.0	0.1	*	0.2	0.1	-0.1
Other Narcotics[f]	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	-0.2
Amphetamines[f]	13.4	12.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Amphetamines, Adjusted[f,g]	NA	NA	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	-0.4
Crystal meth. ("ice")[h]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0	0.3	0.5	0.3	0.1	0.2	0.3	+0.1
Sedatives[f]	3.8	3.4	2.5	1.1	1.0	0.7	0.6	0.6	0.6	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Barbiturates[f]	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	-0.1
Methaqualone[f]	3.1	3.0	1.9	0.7	0.5	0.3	0.1	0.2	0.1	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Tranquilizers[f]	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	+0.1
Alcohol[i]	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	+2.3
Cigarettes	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	+1.7

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 a percentage of less than 0.05% but greater than true zero. 'NA' indicates data not available.

[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (until 1990), or tranquilizers not under a doctor's orders.

[b]This drug was asked about in four of the five questionnaire forms in 1980-1989, and in five of the six questionnaire forms in 1990-1998. Total N in 1998 (for college students) is 1200.

[c]Unadjusted for known underreporting of certain drugs. See text for details.

[d]This drug was asked about in two of the five questionnaire forms in 1987-1989, and in all six questionnaire forms in 1990-1998.

[e]This drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1998. Total N in 1998 (for college students) is 480.

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

[g]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[h]This drug was asked about in two of the six questionnaire forms. Total N in 1998 (for college students) is 480.

[i]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.

TABLE 9-4

Trends in Thirty-Day Prevalence of Daily Use of Various Types of Drugs Among College Students 1-4 Years Beyond High School

(Entries are percentages)

	Percentage who used daily in last thirty days																			'97-'98
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	change
Approx. Wtd. N =	*(1040)*	*(1130)*	*(1150)*	*(1170)*	*(1110)*	*(1080)*	*(1190)*	*(1220)*	*(1310)*	*(1300)*	*(1400)*	*(1410)*	*(1490)*	*(1490)*	*(1410)*	*(1450)*	*(1450)*	*(1480)*	*(1440)*	
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	+0.2
Cocaine	0.2	0.0	0.3	0.1	0.4	0.1	0.1	0.1	0.1	*	0.0	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Amphetamines[a]	0.5	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Amphetamines, Adjusted[a,b]	NA	NA	0.3	0.2	0.2	*	0.1	0.1	*	*	0.0	0.1	0.0	0.1	0.1	0.1	*	0.2	0.1	0.0
Alcohol																				
Daily[a]	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	-0.6
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	-1.7
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	+2.8s
Half-pack or more per 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	+2.3s

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

NOTES: For all drugs not included here (but in tables 9-1 through 9-3), thirty-day prevalence of daily use is below 0.05% in all years. 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 a percentage of less than 0.05% but greater than true zero. 'NA' indicates data not available.

[a]Only drug use which was not under a doctor's orders is included here.
[b]Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.
[c]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.

TABLE 9-5

Trends in Lifetime, Annual, and Thirty-Day Prevalence of an Illicit Drug Use Index[a] Among College Students 1-4 Years Beyond High School, by Gender

(Entries are percentages)

	1980[b]	*1981*[b]	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	'97-'98 change
										Percentage reporting use in lifetime										
Any Illicit Drug	*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	+3.9s
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	+2.3
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	+5.2s
Any Illicit Drug Other than Marijuana	*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	+0.4
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	0.0
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	+1.0
										Percentage reporting use in last twelve months										
Any Illicit Drug	*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	+3.7s
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	+1.8
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	+5.4s
Any Illicit Drug Other than Marijuana	*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	-1.8
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	-1.1
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	-2.0
										Percentage reporting use in last thirty days										
Any Illicit Drug	*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	+0.5
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	-0.3
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	+1.5
Any Illicit Drug Other than Marijuana	*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	-0.7
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	+0.8
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	-1.5
										Approximate Weighted N										
All Respondents	*1040*	*1130*	*1150*	*1170*	*1110*	*1080*	*1190*	*1220*	*1310*	*1300*	*1400*	*1410*	*1490*	*1490*	*1410*	*1450*	*1450*	*1480*	*1440*	
Males	*520*	*530*	*550*	*550*	*540*	*490*	*540*	*520*	*560*	*580*	*620*	*640*	*680*	*660*	*590*	*610*	*560*	*630*	*570*	
Females	*520*	*600*	*610*	*620*	*570*	*600*	*650*	*700*	*750*	*720*	*780*	*770*	*810*	*830*	*820*	*840*	*890*	*860*	*880*	

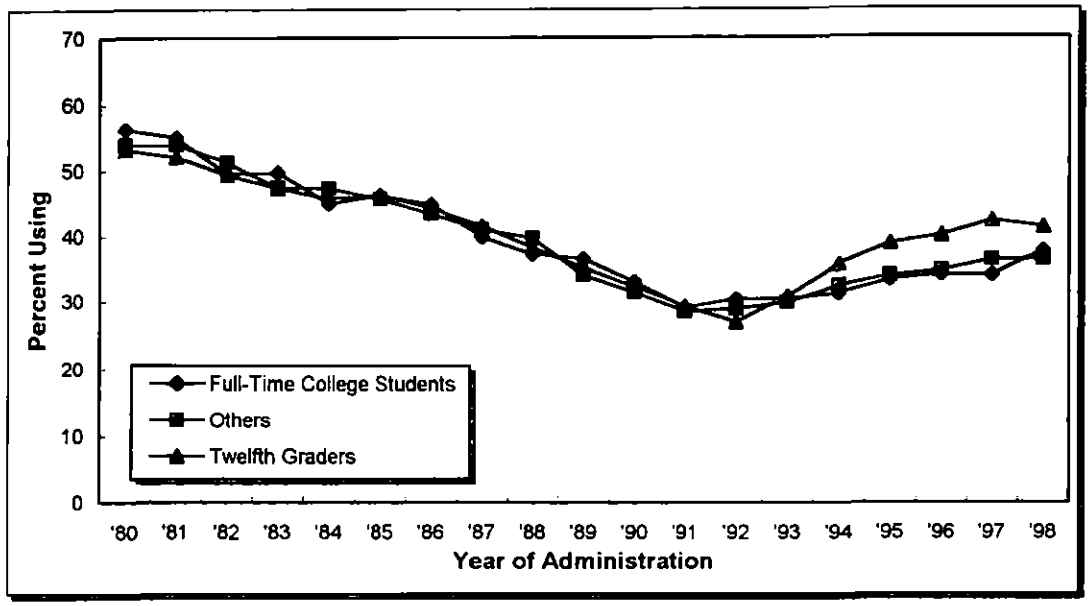
Source: The Monitoring the Future Study, the University of Michigan.

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.

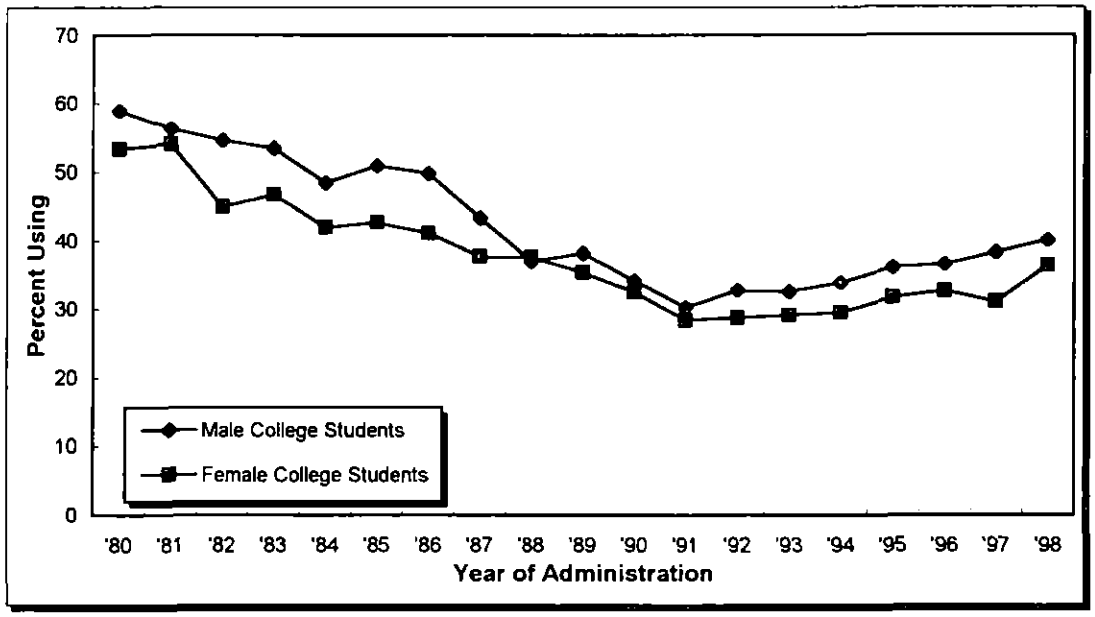
[a]Use of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.
[b]Revised questions about amphetamine use were introduced in 1982 to exclude more completely the inappropriate reporting of non-prescription stimulants. The data in italics are therefore not strictly comparable to the other data.

Figure 9-1

Any Illicit Drug: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



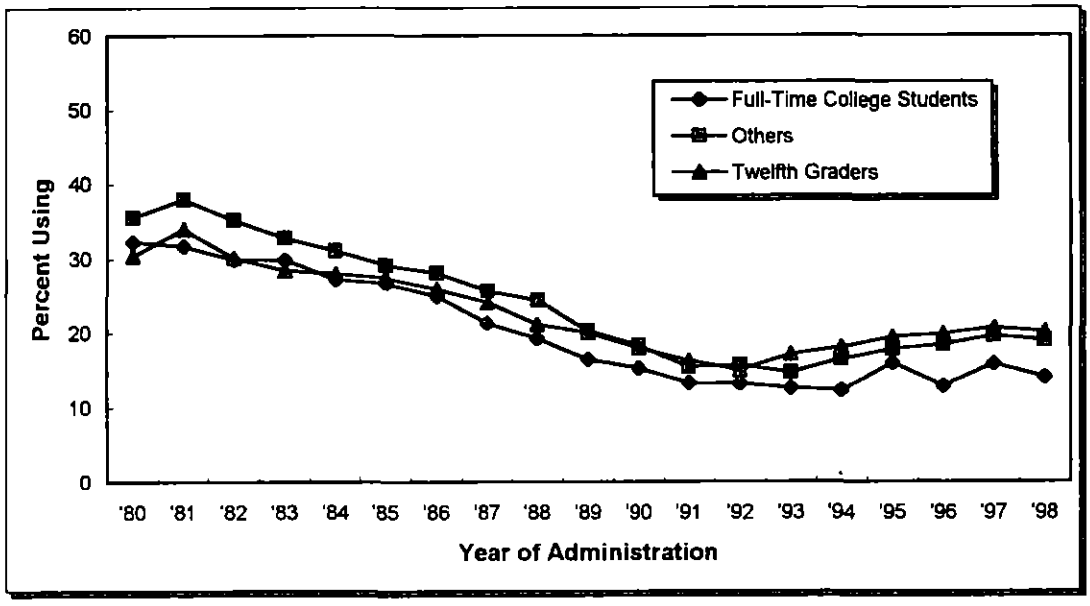
Any Illicit Drug: Trends in Annual Prevalence
Among Male and Female College Students



NOTE: "Others" refers to high school graduates 1-4 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. Others
1-4 Years Beyond High School



Any Illicit Drug Other than Marijuana: Trends in Annual Prevalence Among Male and Female College Students

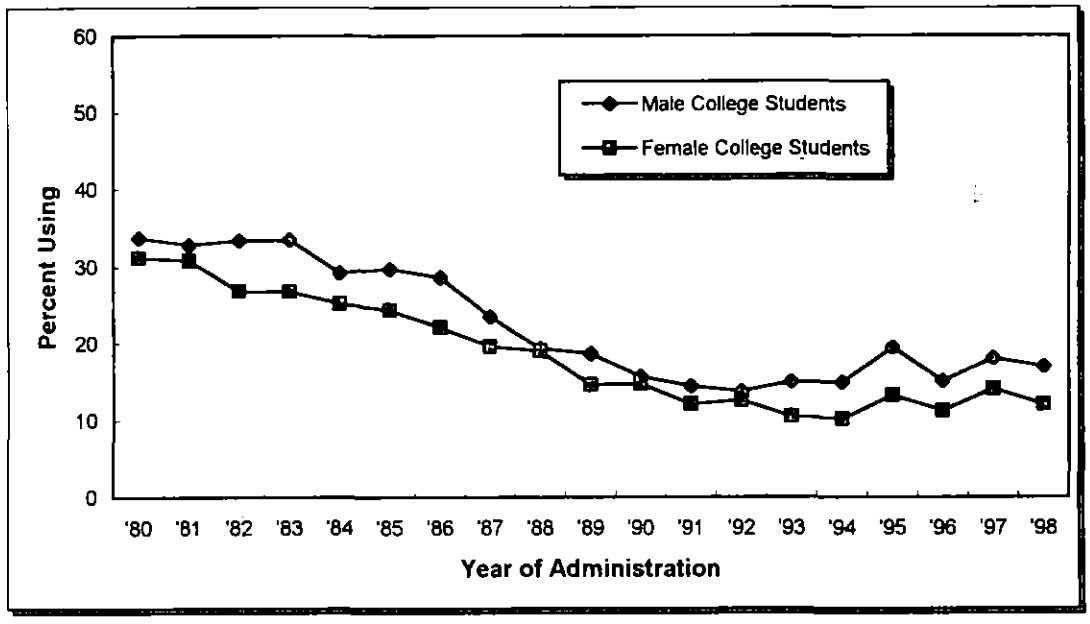
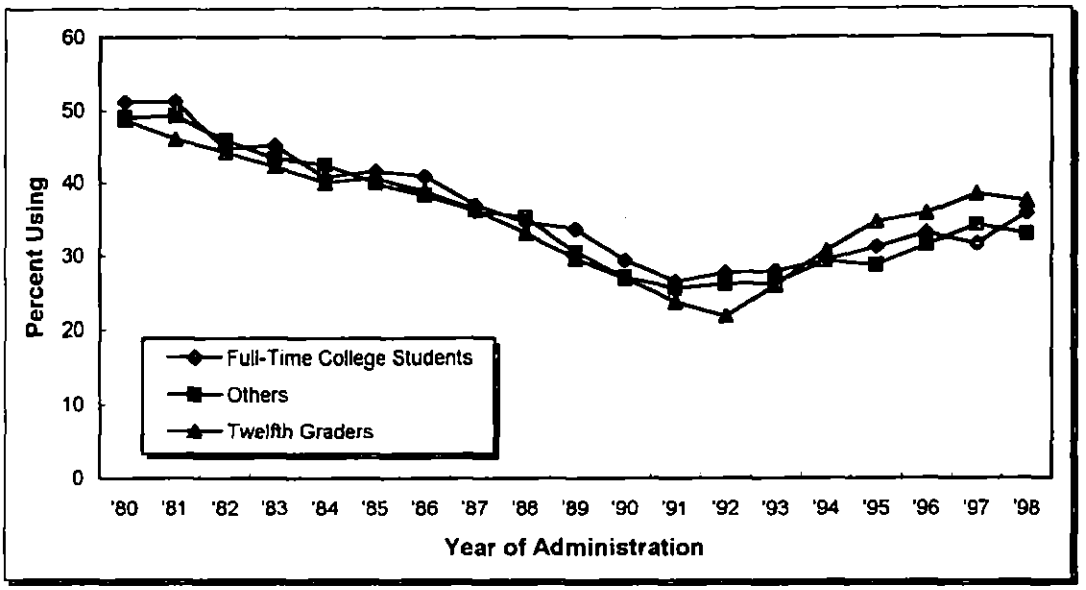


Figure 9-3a

Marijuana: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Marijuana: Trends in Annual Prevalence
Among Male and Female College Students

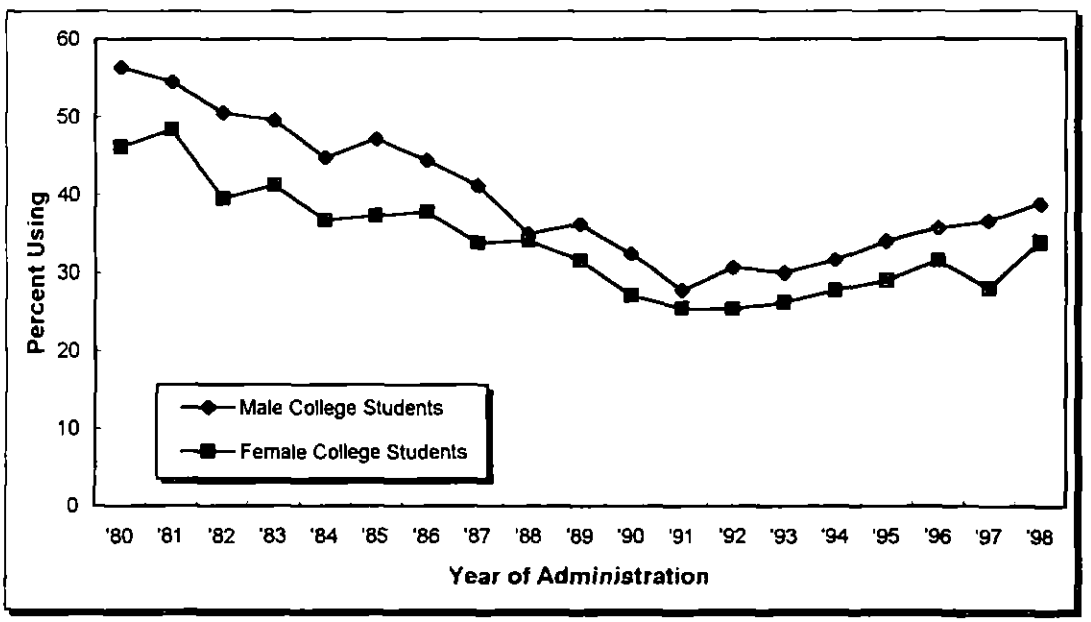
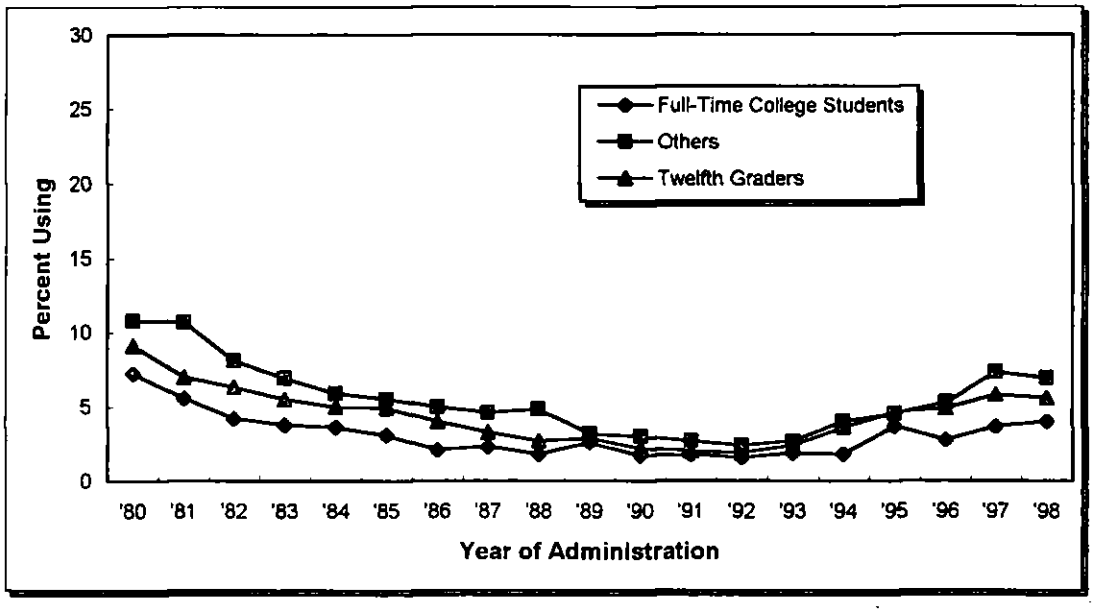


Figure 9-3b

Marijuana: Trends in Thirty-Day Prevalence of Daily Use
Among College Students Vs. Others
1-4 Years Beyond High School



Marijuana: Trends in Thirty-Day Prevalence of Daily Use
Among Male and Female College Students

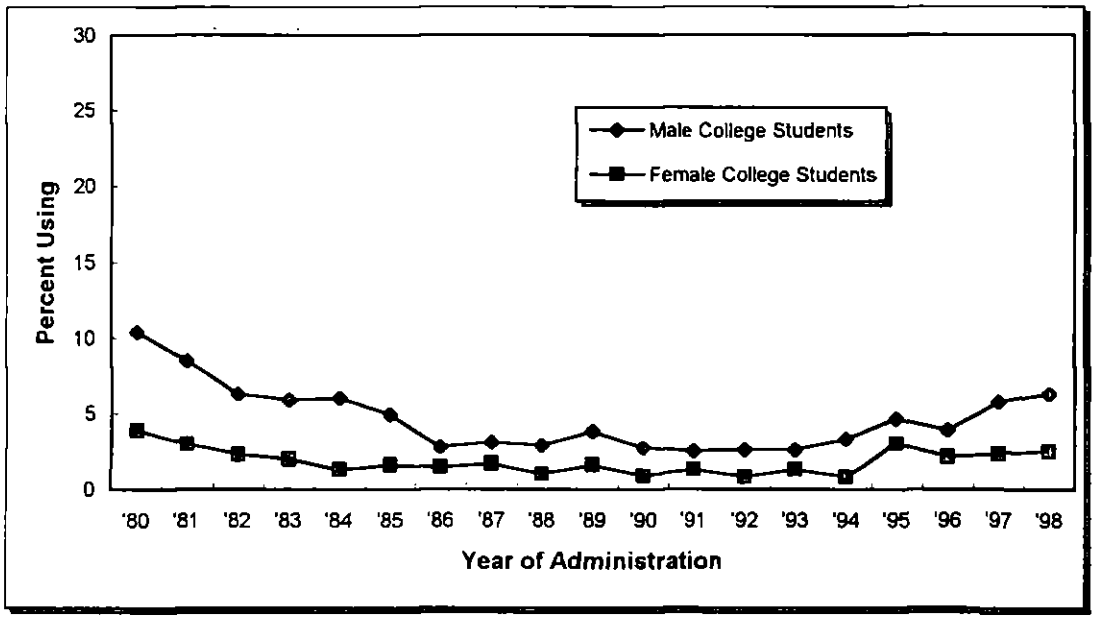
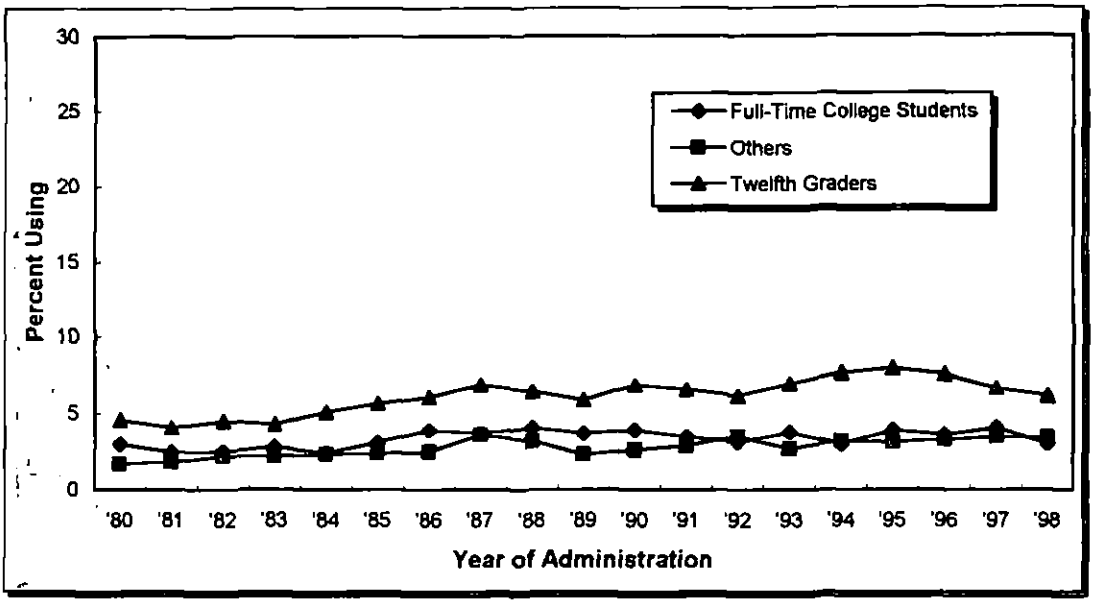
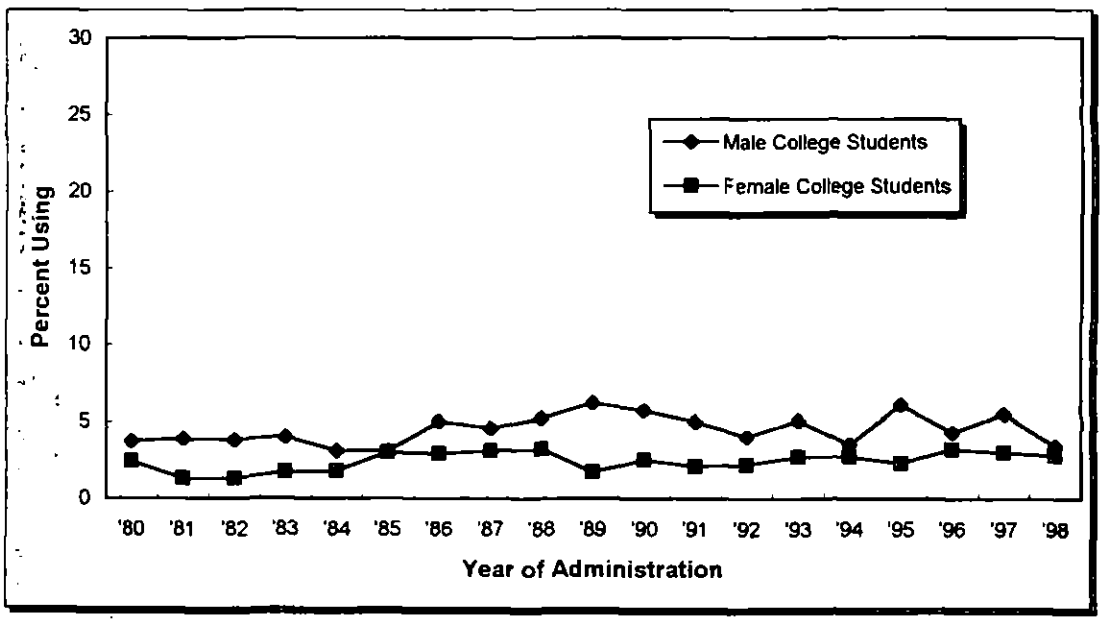


Figure 9-4

Inhalants*: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



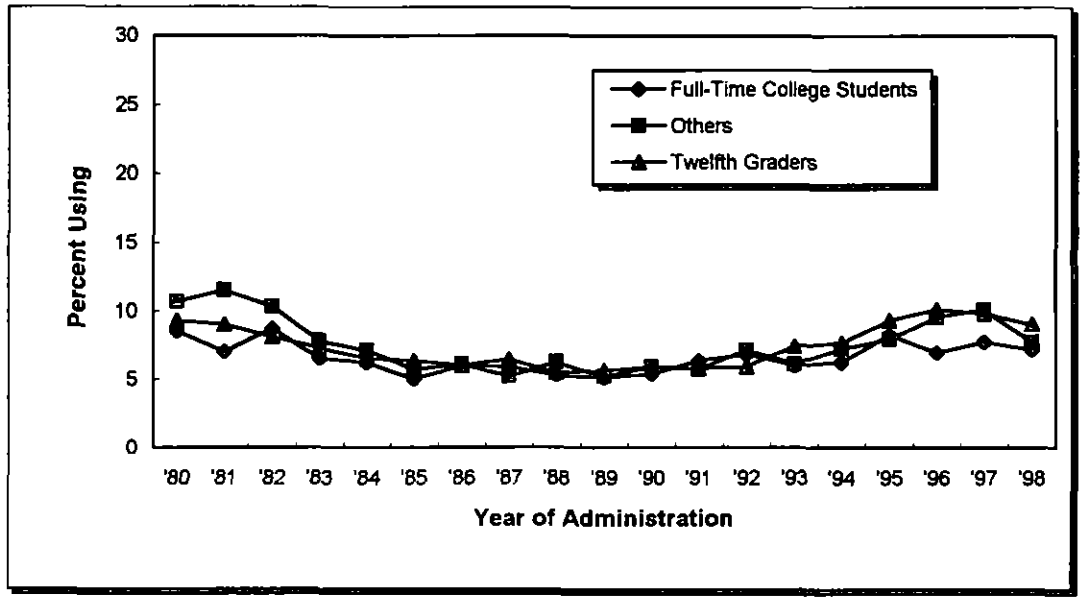
Inhalants*: Trends in Annual Prevalence
Among Male and Female College Students



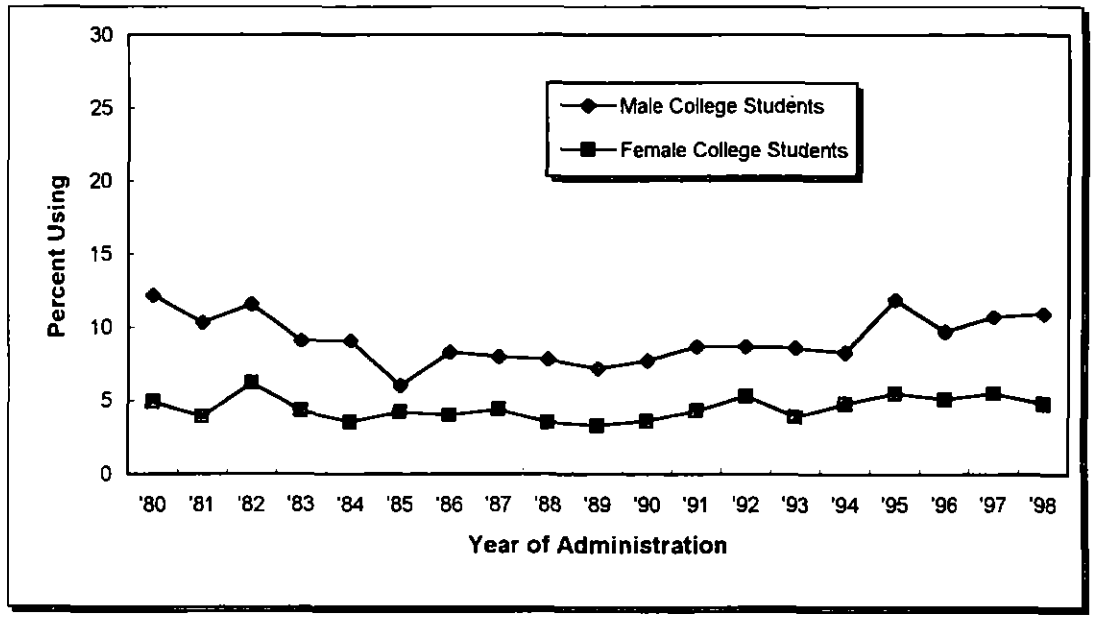
*Unadjusted for the possible underreporting of amyl and butyl nitrites.

Figure 9-5

Hallucinogens*: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



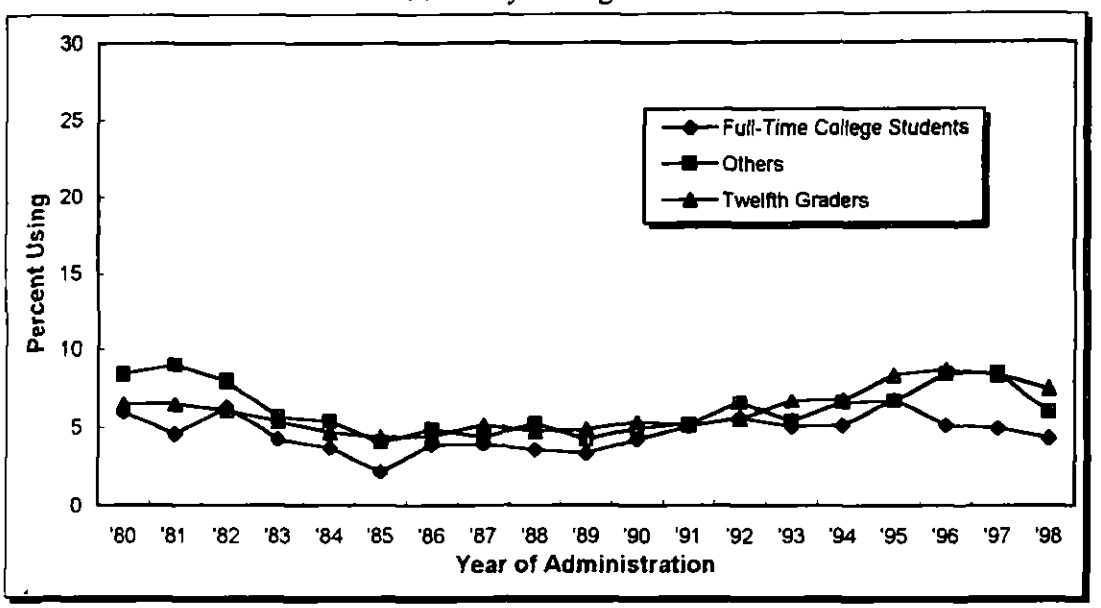
Hallucinogens*: Trends in Annual Prevalence
Among Male and Female College Students



*Unadjusted for the possible underreporting of PCP.

Figure 9-6

LSD: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



LSD: Trends in Annual Prevalence
Among Male and Female College Students

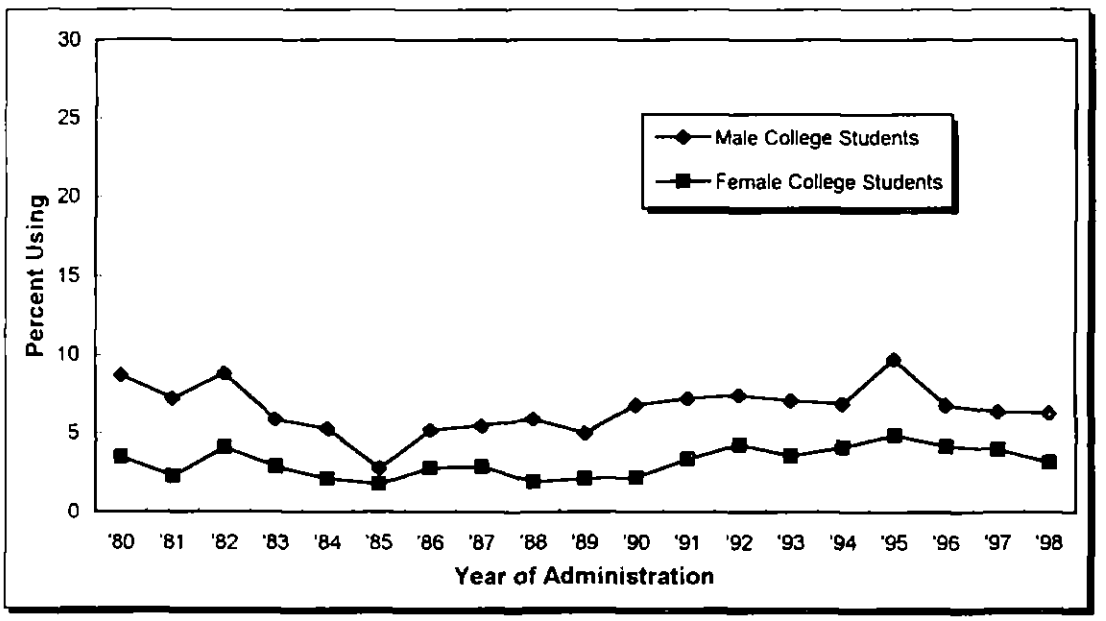
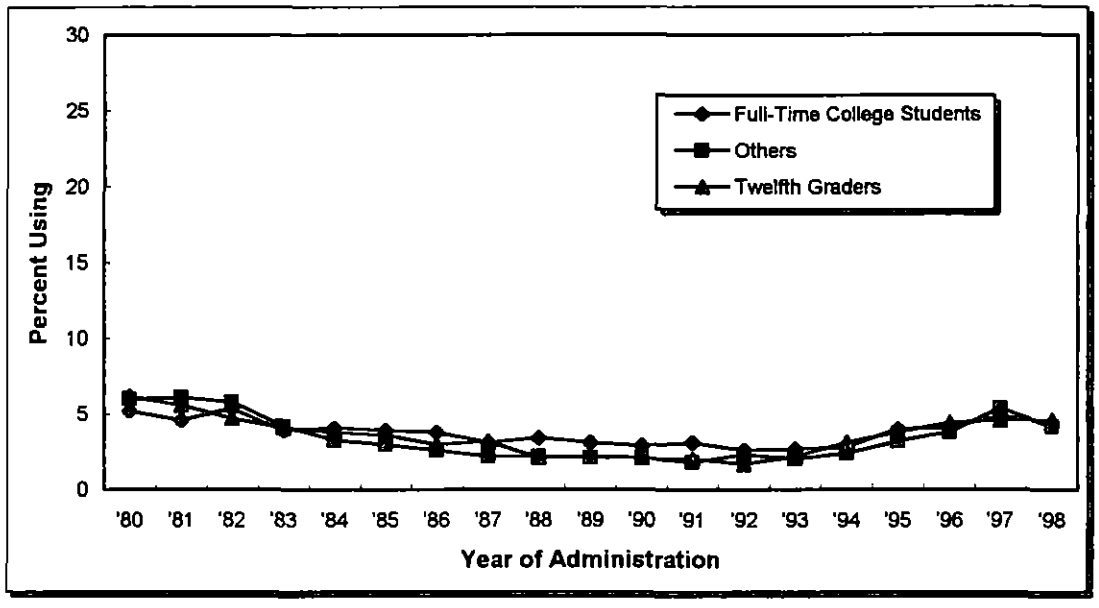


Figure 9-7

Hallucinogens Other than LSD: Trends in Annual Prevalence Among College Students Vs. Others
1-4 Years Beyond High School



Hallucinogens Other than LSD: Trends in Annual Prevalence Among Male and Female College Students

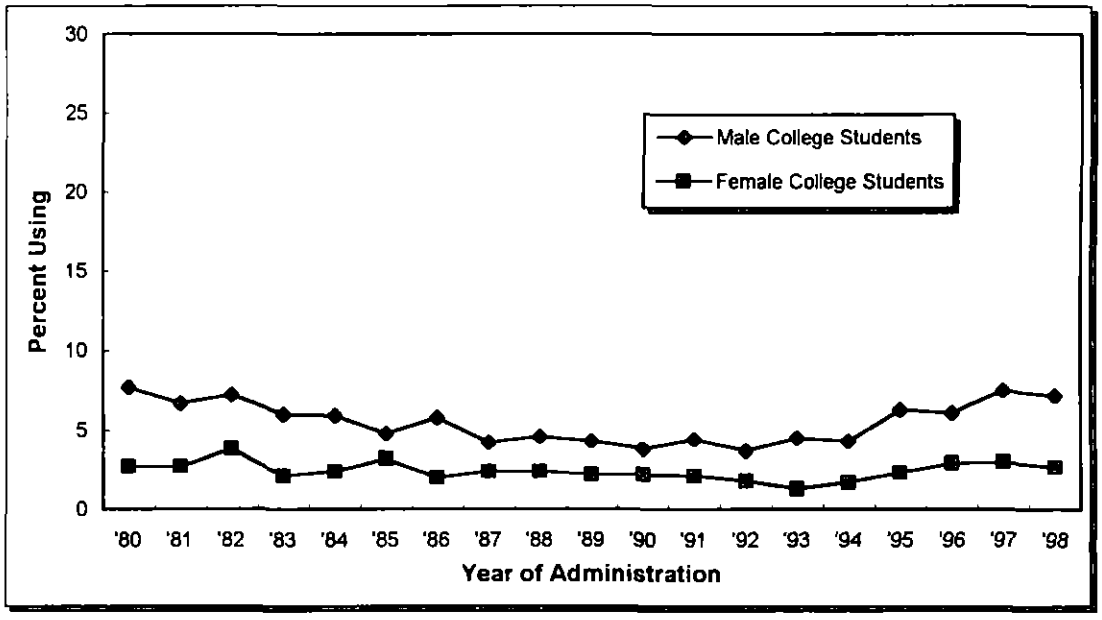
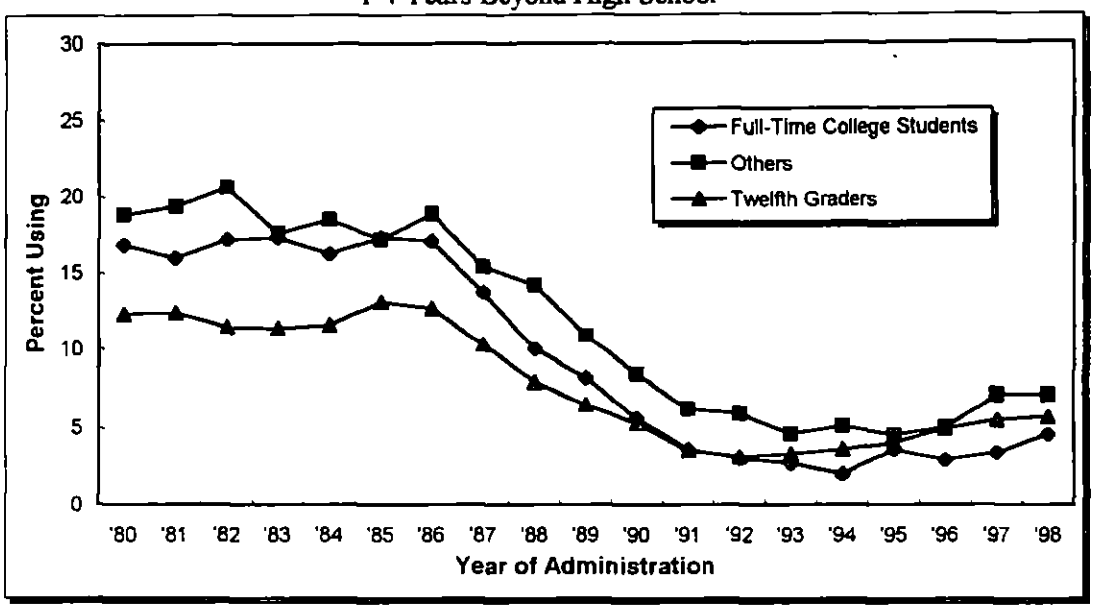


Figure 9-8

Cocaine: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Cocaine: Trends in Annual Prevalence
Among Male and Female College Students

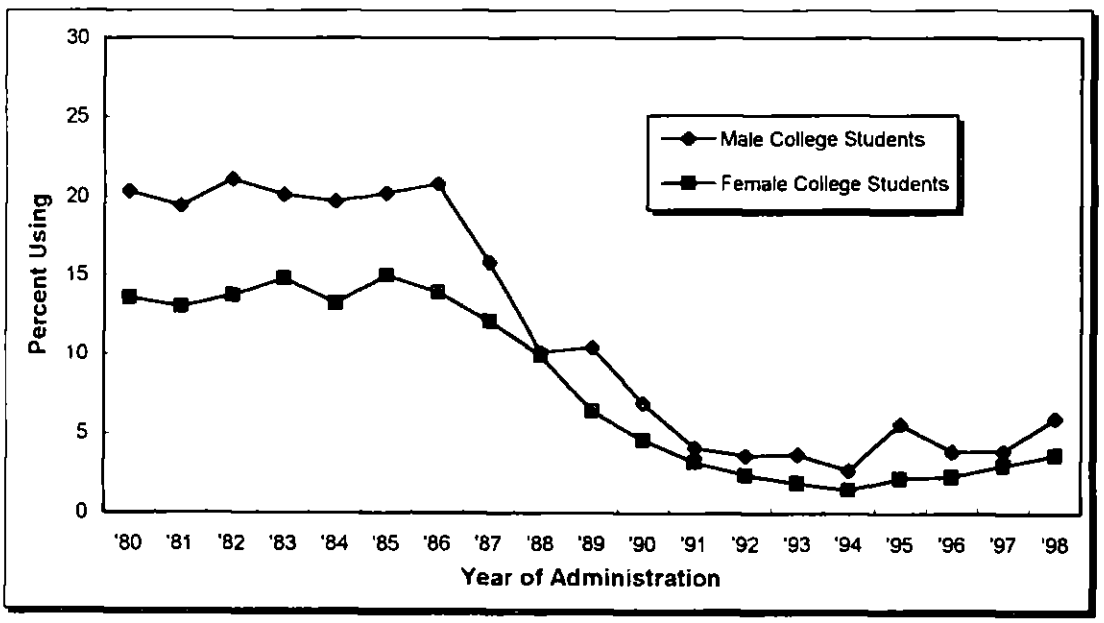
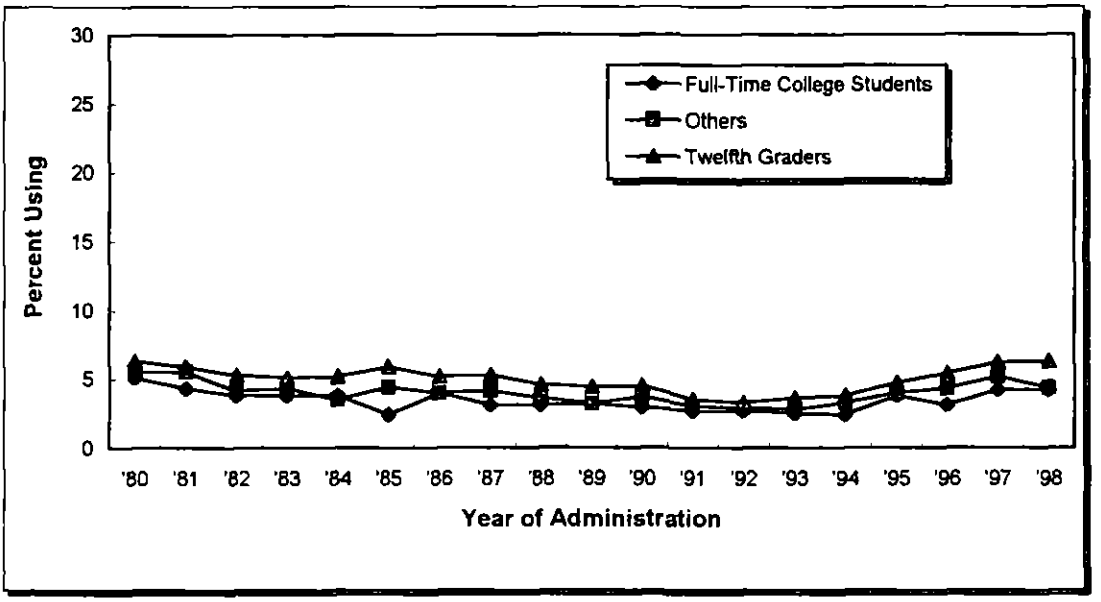


Figure 9-9

Narcotics Other Than Heroin: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Narcotics Other Than Heroin: Trends in Annual Prevalence
Among Male and Female College Students

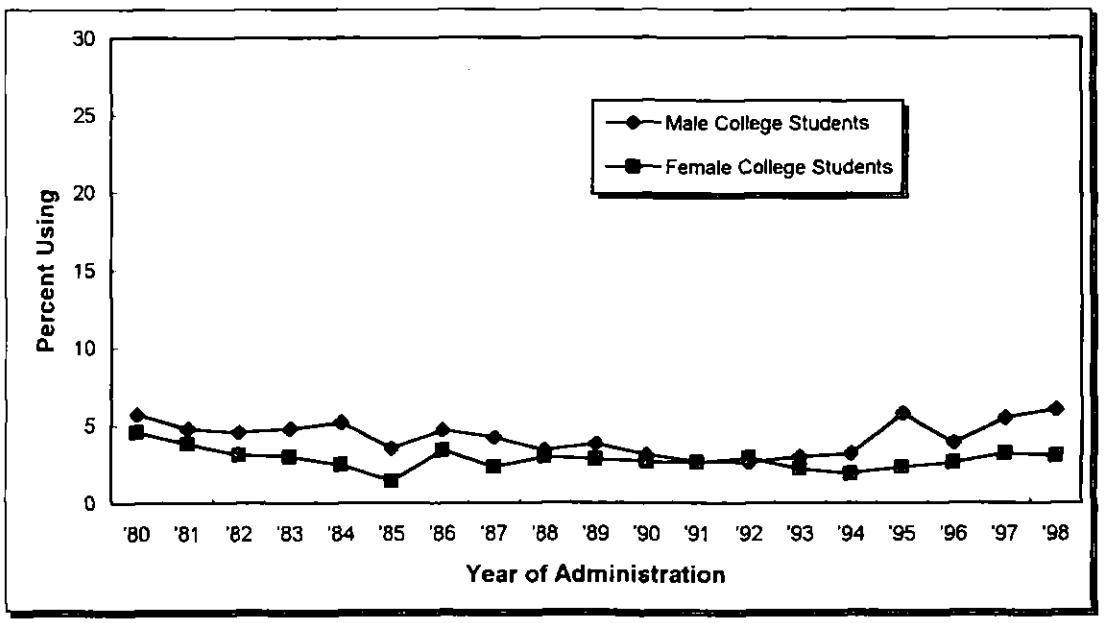
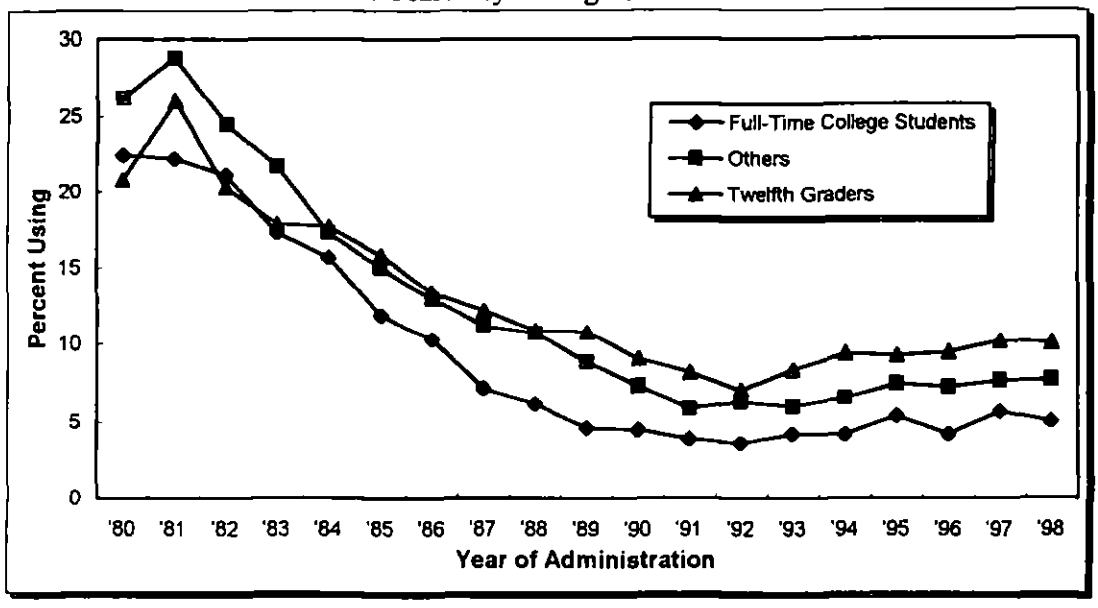


Figure 9-10

Amphetamines: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Amphetamines: Trends in Annual Prevalence
Among Male and Female College Students

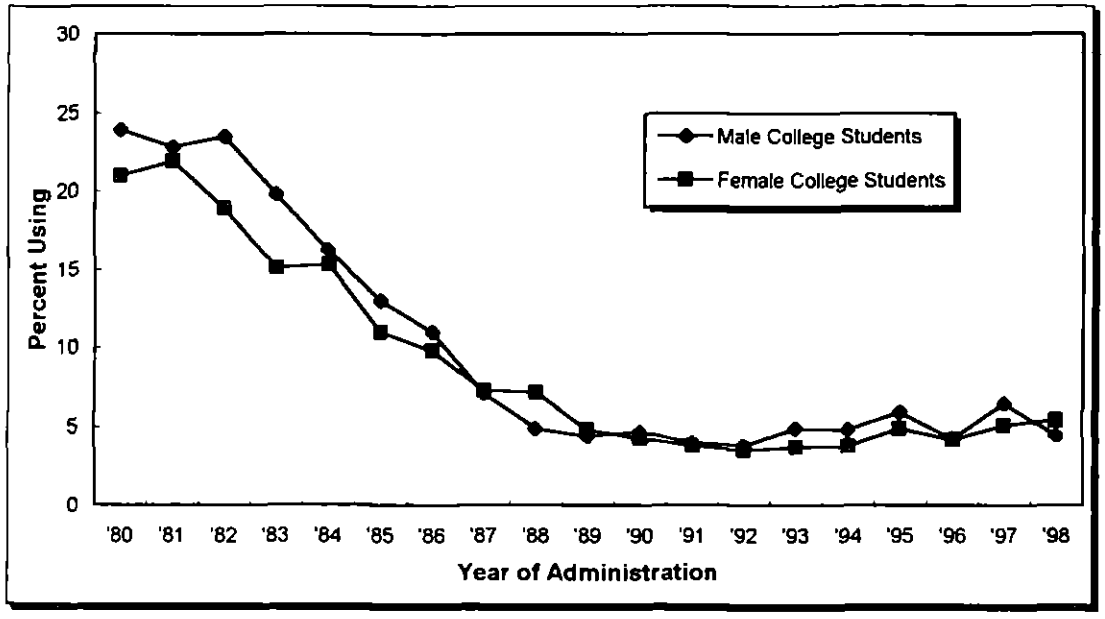
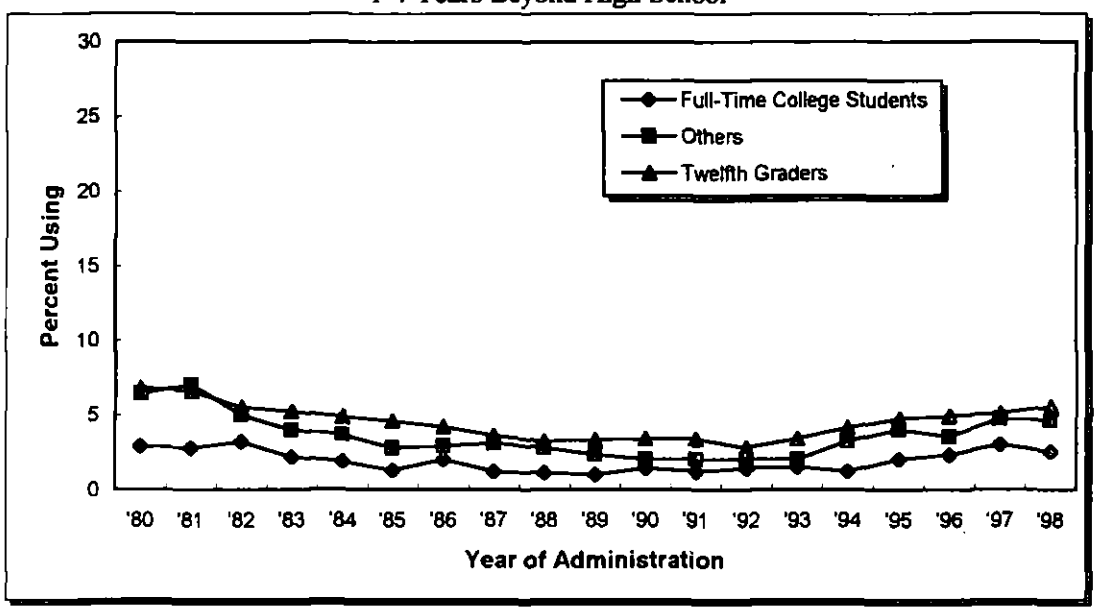


Figure 9-11

Barbiturates: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Barbiturates: Trends in Annual Prevalence
Among Male and Female College Students

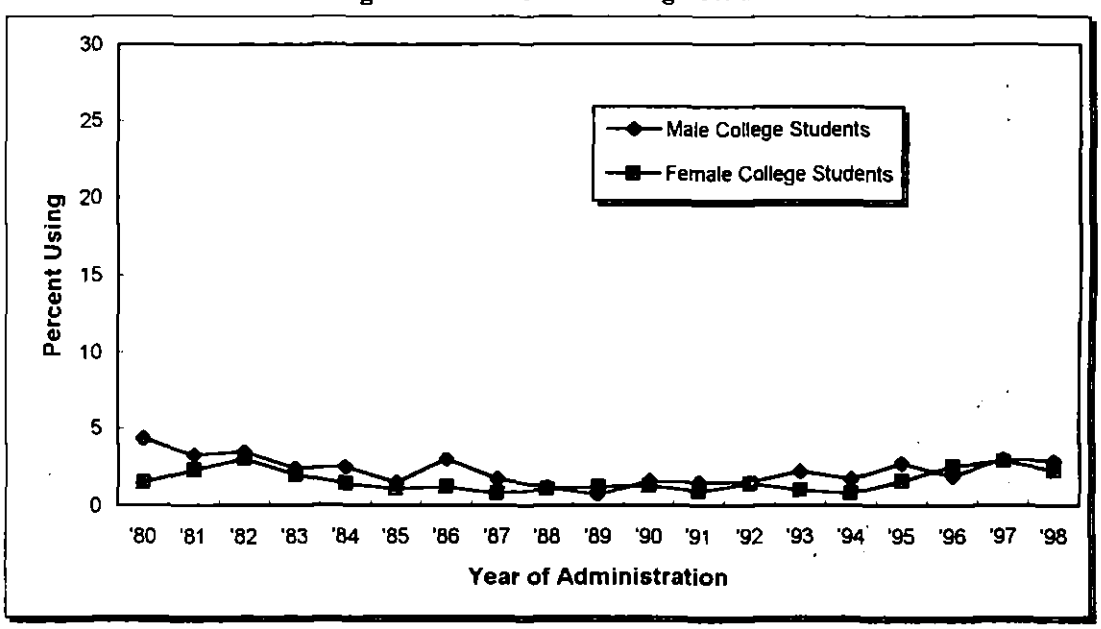
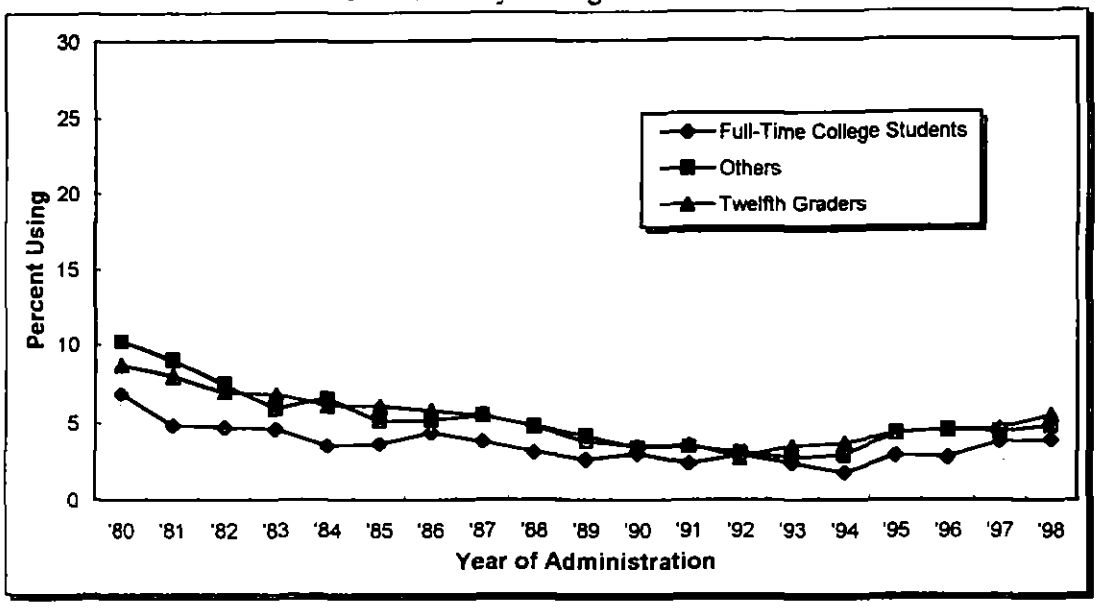


Figure 9-12

Tranquilizers: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Tranquilizers: Trends in Annual Prevalence
Among Male and Female College Students

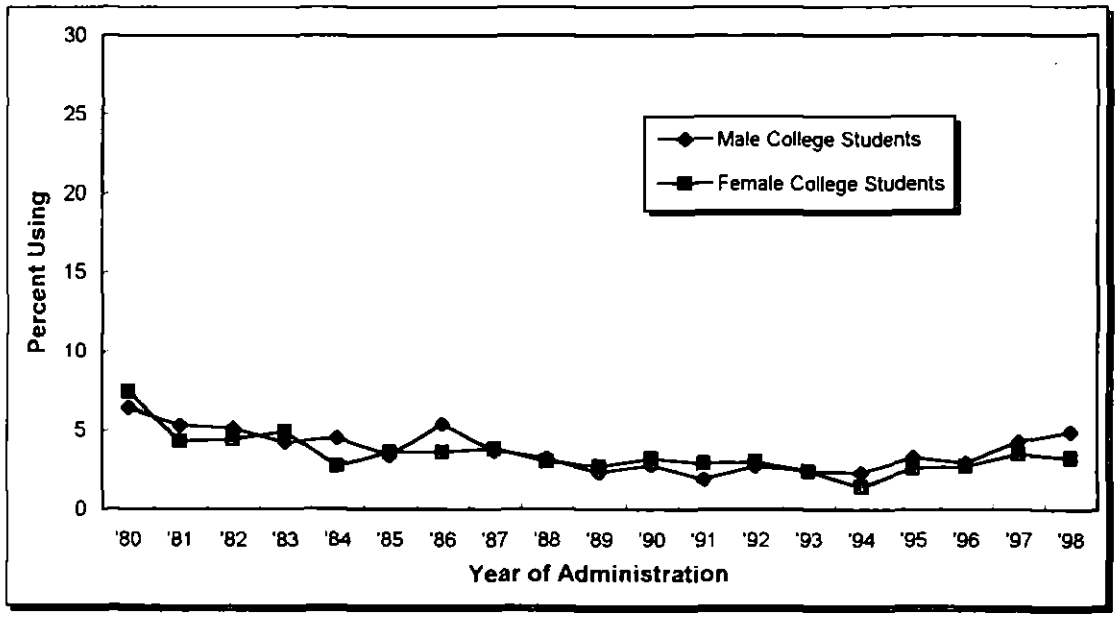
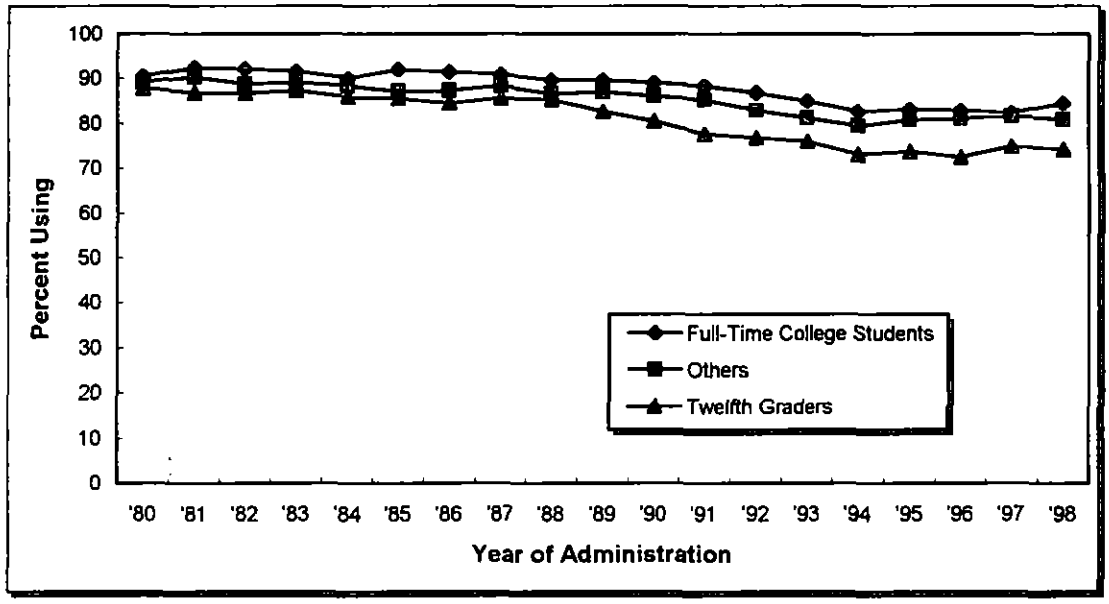


Figure 9-13a

Alcohol: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Alcohol: Trends in Annual Prevalence
Among Male and Female College Students

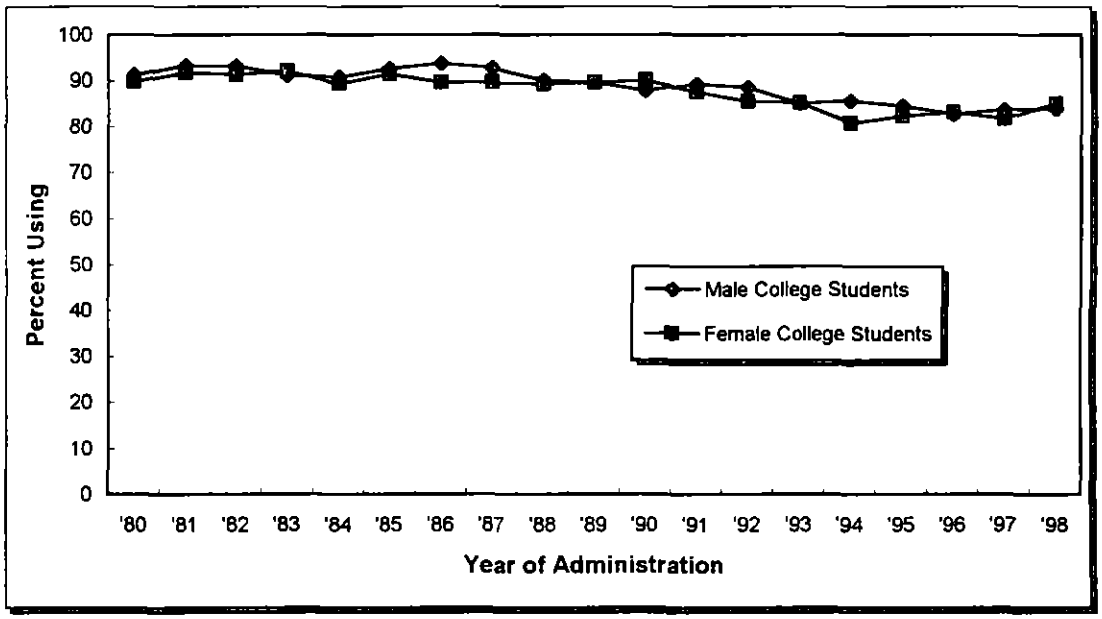
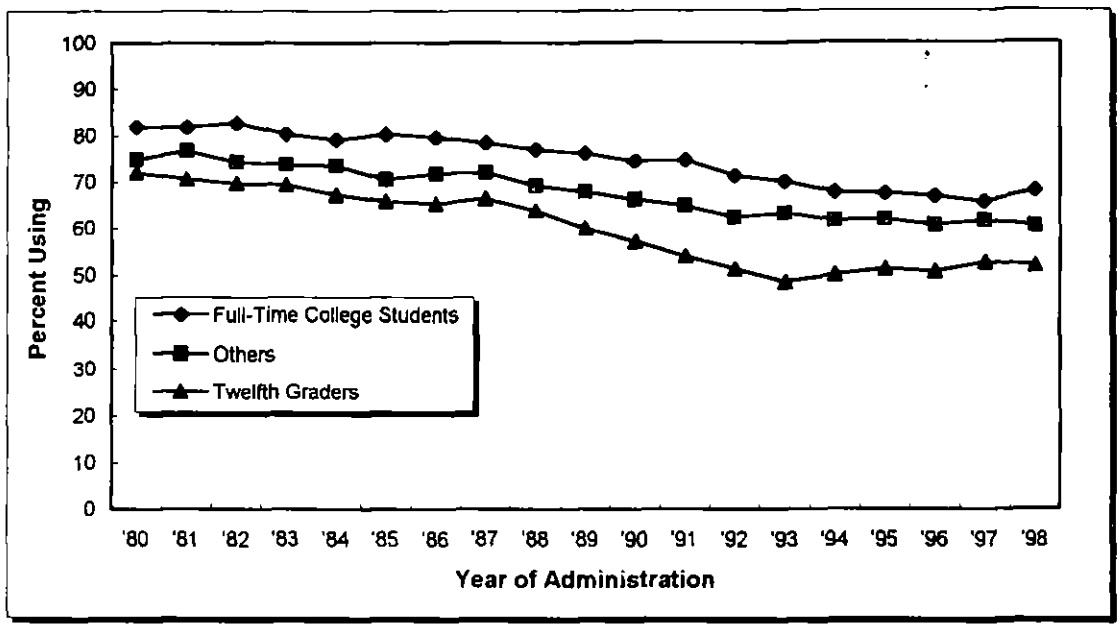


Figure 9-13b
Alcohol: Trends in Thirty-Day Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Alcohol: Trends in Thirty-Day Prevalence of Thirty-Day Use
Among Male and Female College Students

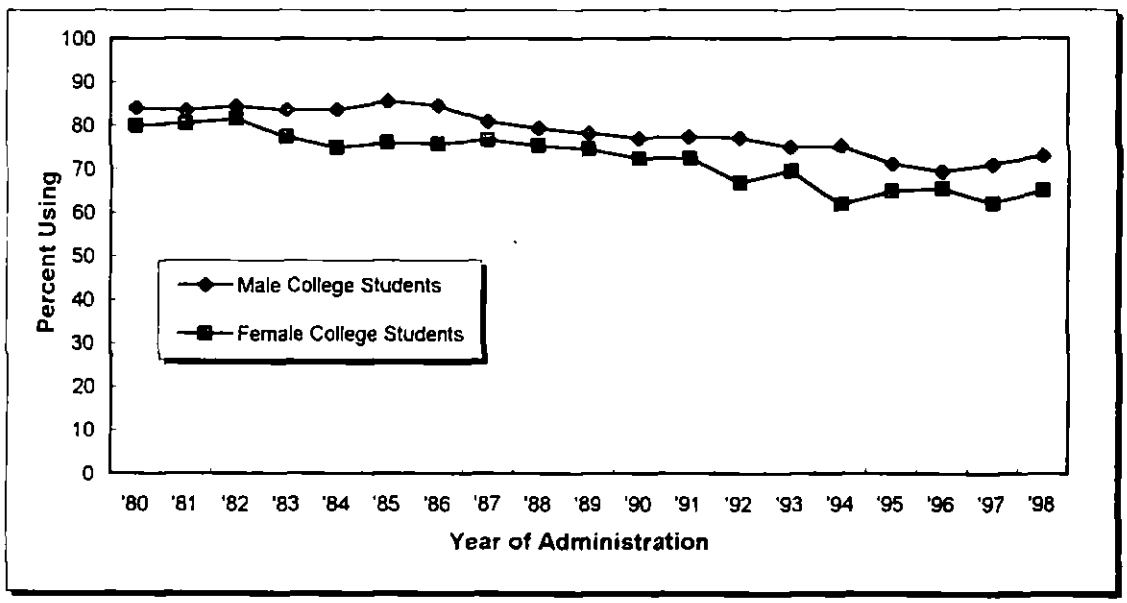
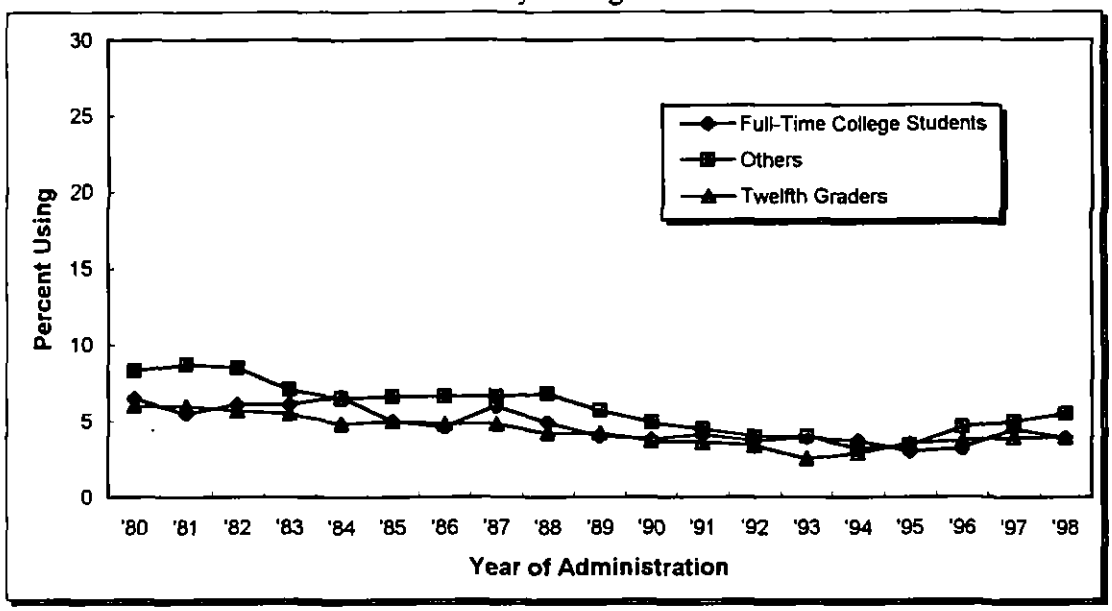


Figure 9-13c

Alcohol: Trends in Thirty-Day Prevalence of Daily Use
Among College Students Vs. Others
1-4 Years Beyond High School



Alcohol: Trends in Thirty-Day Prevalence of Daily Use
Among Male and Female College Students

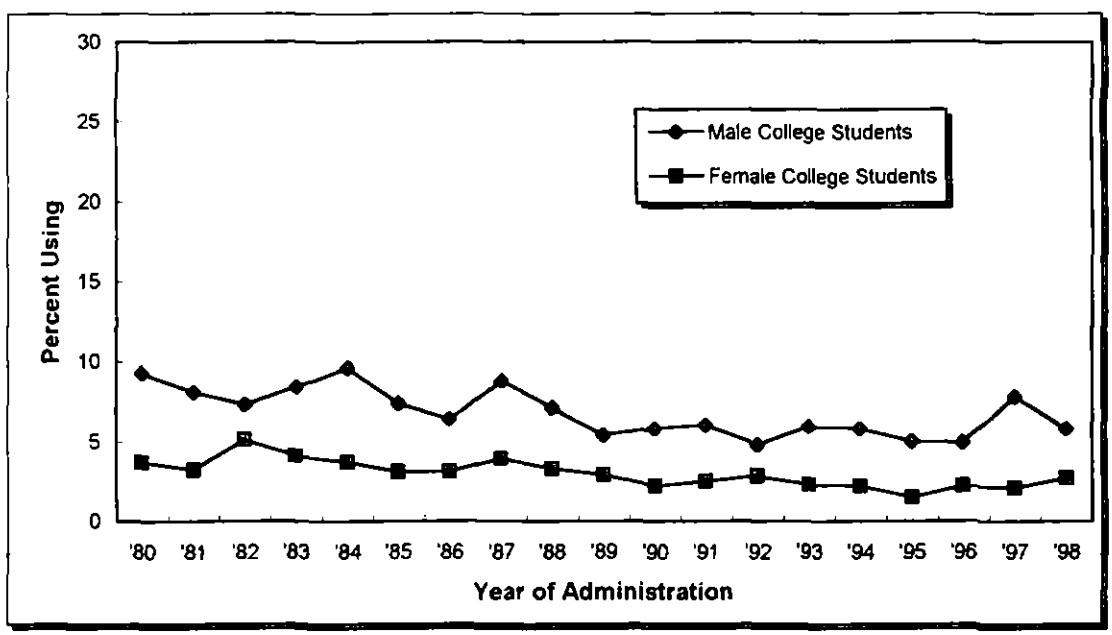
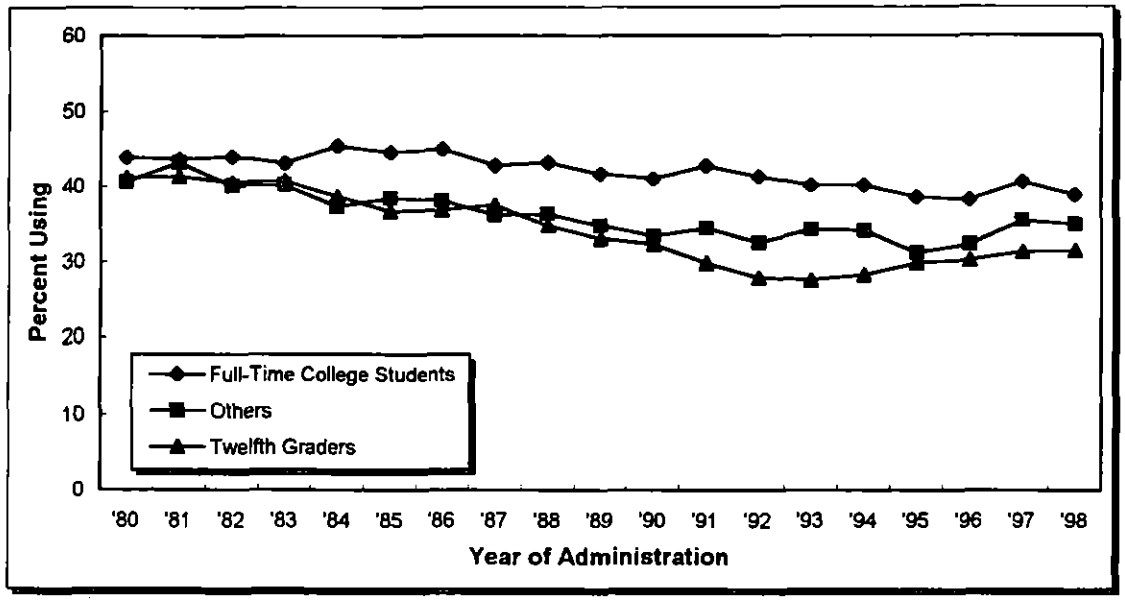


Figure 9-13d

Alcohol: Trends in Two-Week Prevalence of Five or More Drinks in a Row Among College Students Vs. Others
1-4 Years Beyond High School



Alcohol: Trends in Two-Week Prevalence of Five or More Drinks in a Row Among Male and Female College Students

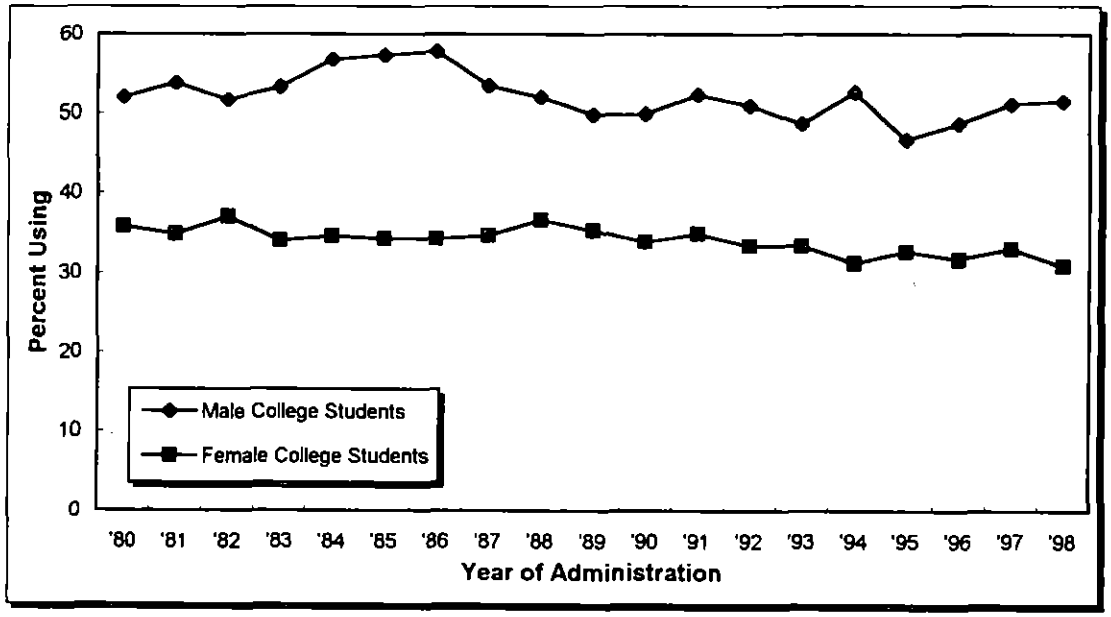
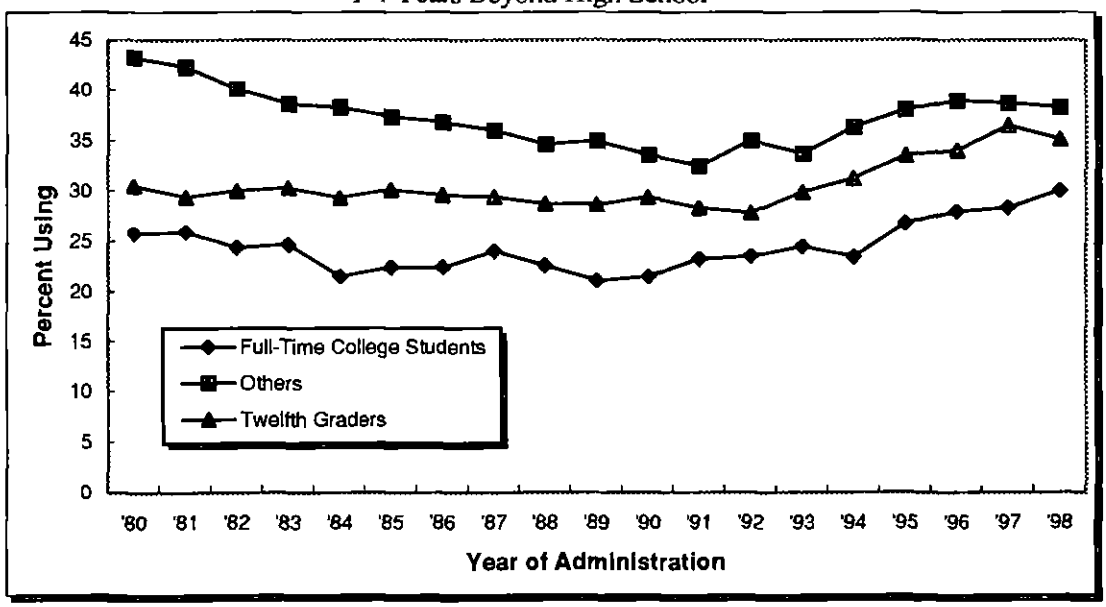


Figure 9-14a

Cigarettes: Trends in Thirty-Day Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Cigarettes: Trends in Thirty-Day Prevalence
Among Male and Female College Students

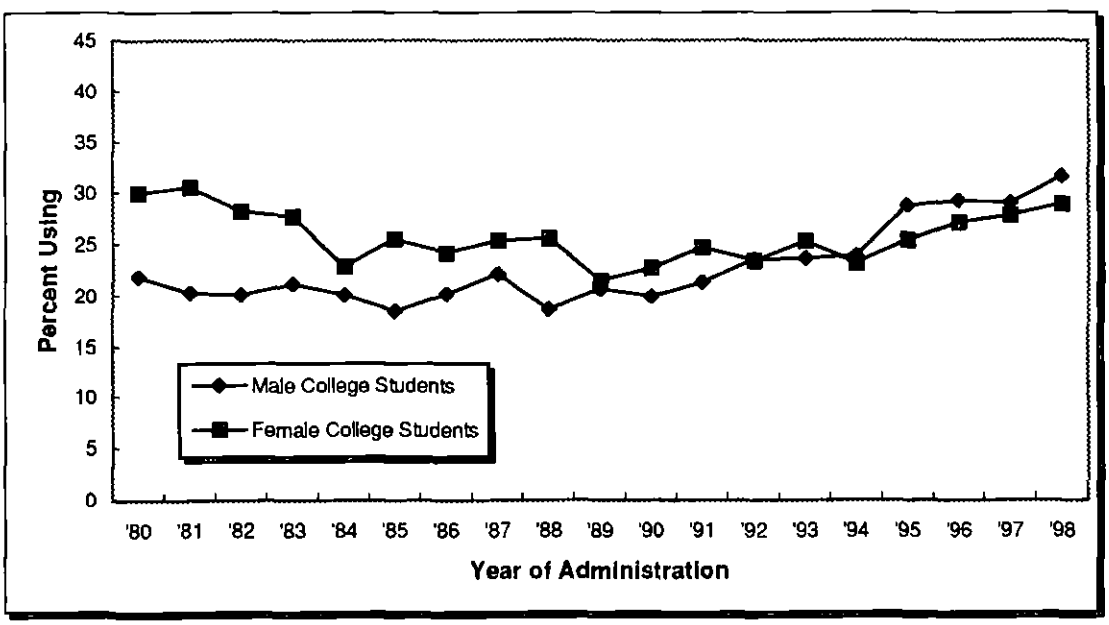
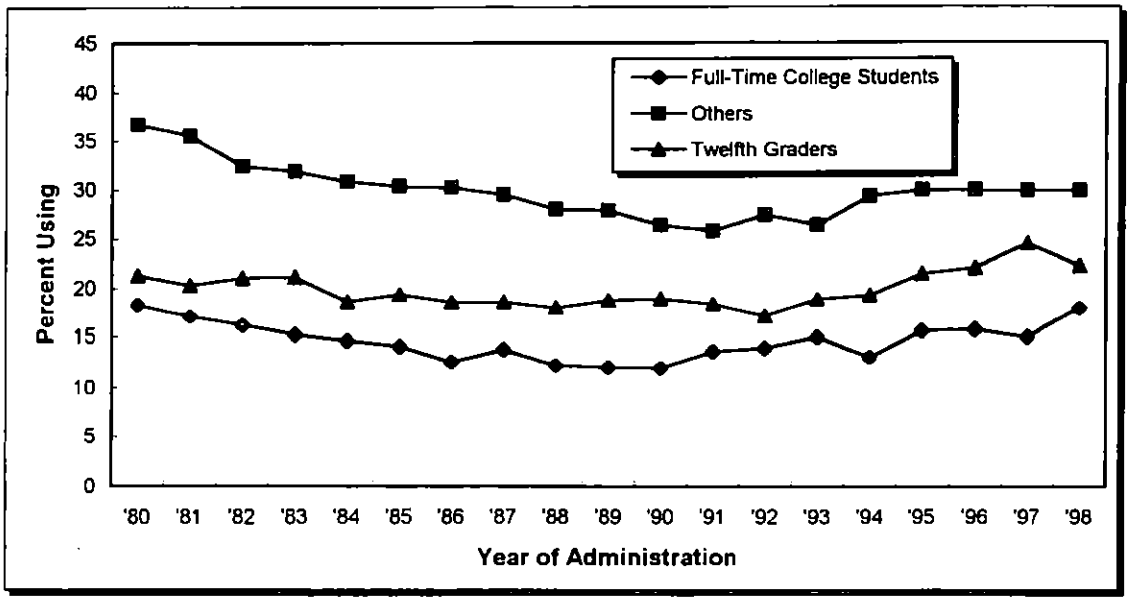


Figure 9-14b

Cigarettes: Trends in Thirty-Day Prevalence of Daily Use
Among College Students Vs. Others
1-4 Years Beyond High School



Cigarettes: Trends in Thirty-Day Prevalence of Daily Use
Among Male and Female College Students

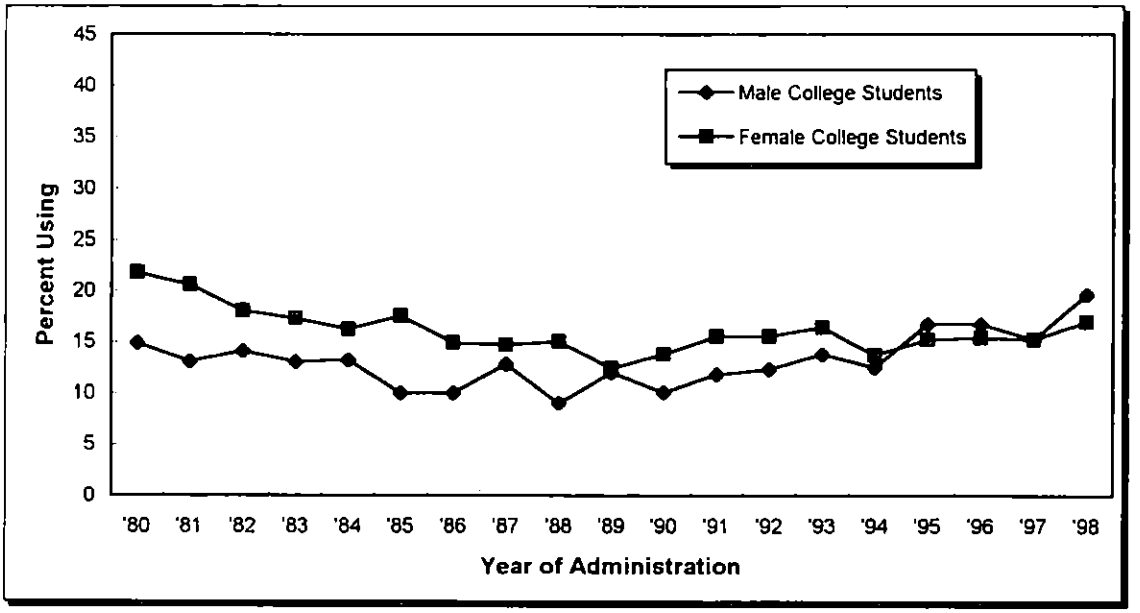
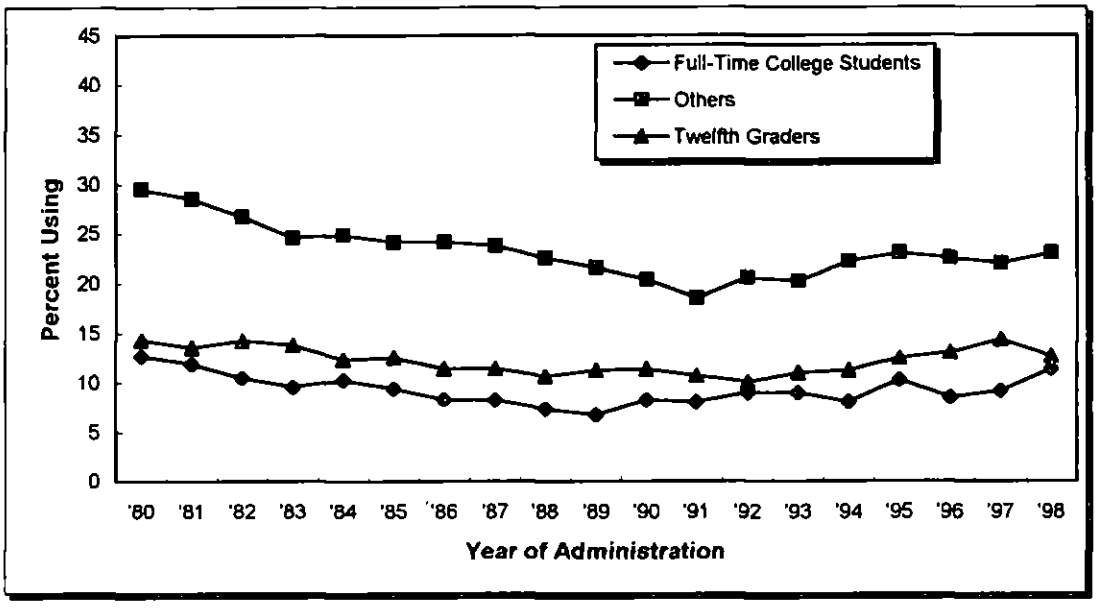
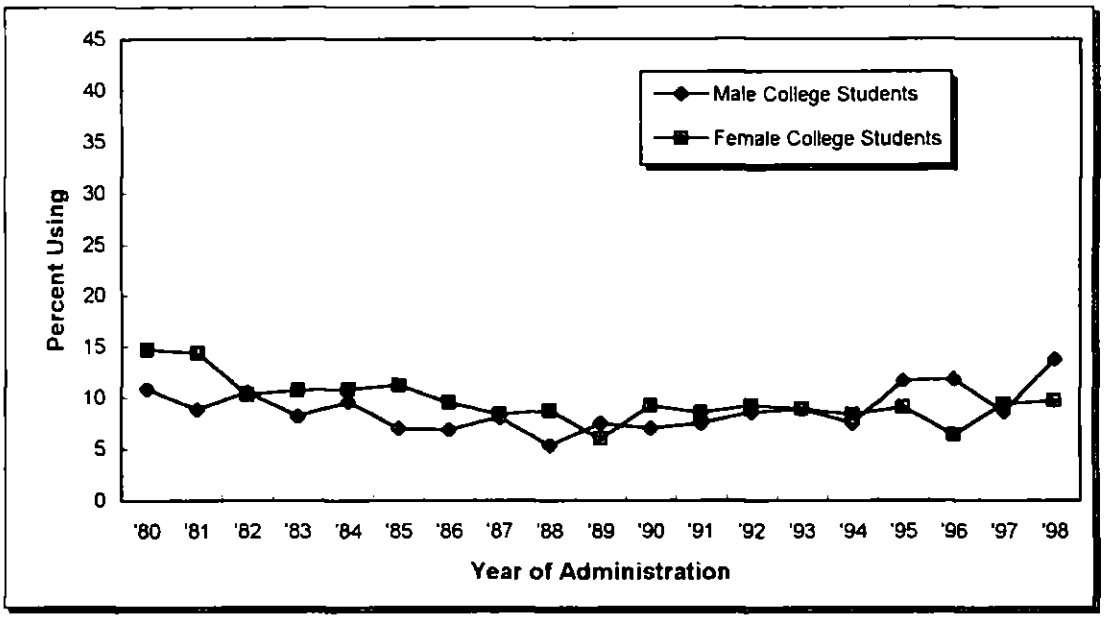


Figure 9-14c

Cigarettes: Trends in Thirty-Day Prevalence of Smoking a Half-Pack or More per Day Among College Students Vs. Others
1-4 Years Beyond High School



Cigarettes: Trends in Thirty-Day Prevalence of Smoking a Half-Pack or More per Day Among Male and Female College Students



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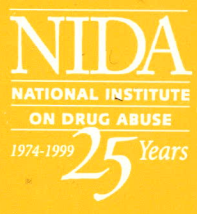

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