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ABSTRACT

This document contains volume I of a two-volume report presenting the results of the 17th national survey of drug use and related attitudes among American high school seniors and the 12th national survey of American college students. Volume I contains the results from the secondary school samples of 8th, 10th, and 12th graders. Chapter 1 provides an introduction to the report. Chapter 2 contains an overview of key findings, looking at trends in illicit drug use, alcohol use, and cigarette smoking, and the drug use of 8th and 10th graders. A summary of trends notes that, over the last 10 years, there have been appreciable declines in the use of a number of the illicit drugs among seniors. Chapter 3 describes the study design and procedures; chapter 4 considers the prevalence of drug use among 8th, 10th, and 12th graders; chapter 5 examines trends in drug use among high school seniors; and chapter 6 focuses on drug use at earlier grade levels. Chapter 7 concentrates on the degree and duration of drug highs. Chapter 8 explores attitudes and beliefs about drugs and chapter 9 considers the social milieu. Other findings from the study, including findings on the use of nonprescription stimulants and the use of marijuana on a daily basis are presented in chapter 10. Prevalence and trend estimates adjusted for absentees and dropouts are appended. Thirty-four tables and 32 figures are included. (NB)

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**SMOKING, DRINKING, AND ILLICIT DRUG USE
AMONG AMERICAN SECONDARY SCHOOL STUDENTS,
COLLEGE STUDENTS, AND YOUNG ADULTS, 1975-1991**

Volume I
Secondary School Students

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

U.S. DEPARTMENT OF EDUCATION
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Volume I
Secondary School Students

by

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1992

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Chapter 1

INTRODUCTION

This two-part report presents the results of the seventeenth national survey of drug use and related attitudes among American high school seniors and the twelfth national survey of American college students. This year's report also presents for the first time results from the newly-added national surveys of eighth and tenth grade students. Volume I contains the results from the secondary school samples of eighth, tenth, and twelfth graders. The results from college students and young adults are reported in Volume II. All of these data derive from the ongoing national research and reporting program entitled *Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth*, which is conducted at the University of Michigan's Institute for Social Research and has been funded through a series of research grants from the National Institute on Drug Abuse. The study is sometimes referred to as the High School Senior Survey, since each year a representative sample of all seniors in public and private high schools in the coterminous United States is surveyed. However, it also includes representative samples of young adults from previous graduating classes who are administered follow-up surveys by mail, and representative samples of American college students one to four years past high school also have been encompassed by these follow-up samples each year since 1980. Finally, in 1991 annual surveys of eighth and tenth grade students were added; thus the term National High School Senior Survey has become increasingly outdated.

SURVEYS OF HIGH SCHOOL SENIORS

Two of the major topics which continue to be included in this present series of annual reports are the prevalence of drug use among American high school seniors, and trends in use by seniors since the study began in 1975. Distinctions among important demographic subgroups in the population are made. In fact, this year racial/ethnic comparisons are included for the first time. Also reported are data on grade of first use, trends in use at lower grade levels, intensity of drug use, attitudes and beliefs among seniors concerning various types of drug use, and their perceptions of certain relevant aspects of the social environment.

SURVEYS OF EIGHTH AND TENTH GRADE STUDENTS

Because results from eighth and tenth grade students are available only for 1991, no trend data are yet available for them. However, the cross-sectional results for them—in terms of use, attitudes and beliefs, characteristics of the social milieu, etc.—are included here and are integrated with the data from twelfth graders so that cross-grade comparisons are facilitated. In general, the annual surveys of eighth and tenth grade students use procedures and measures which closely parallel those for high school seniors, except that fewer questionnaire forms (two instead of six) and, therefore, fewer variables are measured on the younger students.

These lower grades were added in compliance with requests in the national strategy on drug abuse, but the logic for this expansion had become quite compelling in any case. The use of drugs clearly had radiated downward in the age spectrum, making the early and middle adolescent years those in which the initiation of drug use was likely to take place. In addition, prevention efforts, which have expanded very considerably in recent years, are being implemented primarily in these earlier age groups; there is a considerable need for national comparison data on drug use trends with which to compare the results of evaluations being done on many of these studies. We are hopeful that the inclusion of these grades will not only improve our general understanding of the etiology of drug use at these earlier stages, but also will be helpful in both the design and evaluation of the prevention programs being developed to influence young people in these grades.

SURVEYS OF COLLEGE STUDENTS AND YOUNG ADULTS GENERALLY

Data on the prevalence and trends in drug use among young adults who have completed high school are also incorporated into this report series. These data are reported primarily in Volume II, though a brief summary of them is given in Chapter 2, "Overview of Key Findings." The period of young adulthood (late teens to the late twenties) is particularly important because this tends to be the period of peak use for many drugs. The continuing epidemic of cocaine use among young adults also makes this an age group of particular policy importance.

The Monitoring the Future study design calls for continuing follow-up panel studies of a subsample of the participants in each participating senior class, beginning with the class of 1976. Thus, data were gathered in 1991 on representative samples of the graduating classes of 1976 through 1990, corresponding to modal ages of 19 to 33. Comprehensive results from this population are presented in Volume II.

Two chapters in Volume II present data on college students specifically. This segment of the young adult population has not been well represented in other national surveys, because many college students live on campus, in dormitories, fraternities, and sororities, and these group dwellings are not included in the national household survey population. Trends are presented on drug use among college students since 1980, the first year in which a good national sample of college students one to four years past high school was available from the follow-up survey. Thus the 1991 study constitutes the twelfth national survey of American college students in this series.

CONTENT AREAS COVERED IN THIS REPORT

Initially, eleven separate classes of drugs were distinguished for this series of reports: marijuana (including hashish), inhalants, hallucinogens, cocaine, heroin, opiates other than heroin (both natural and synthetic), stimulants (more specifically, amphetamines), sedatives, tranquilizers, alcohol, and tobacco. This particular organization of drug use classes was chosen to heighten comparability with a parallel series of publications based on the National Institute on Drug Abuse's national household surveys on drug abuse. Separate statistics are also presented here for several sub-classes of drugs within these more general classes: PCP and LSD (both hallucinogens), barbiturates and methaqualone (both sedatives), the amyl and butyl nitrites (both inhalants), and crack and other

cocaine. Trend data for PCP and nitrites are available only since 1979 when questions about the use of these drugs were added to the study because of increasing concern over their rising popularity and possibly deleterious effects. For similar reasons, "crack" cocaine was added to the 1986 survey and the questions on crack were expanded in 1987. MDMA or "ecstasy" was added in 1989 (to follow-up surveys only) and crystal methamphetamine ("ice") was added in 1990. Barbiturates and methaqualone, which constitute the two components of the "sedatives" class as used here, have been separately measured from the outset. Data for them have been presented separately because their trend lines are substantially different. A somewhat different class of drugs—anabolic steroids—was added in 1989 because of its dangers and its increasing illicit use among young people.

For drugs other than alcohol, cigarettes, and nonprescription stimulants, practically all of the information reported here deals with illicit use. Respondents are asked to exclude any occasions on which they used any of the psychotherapeutic drugs under medical supervision. (Some data on the medically supervised use of such drugs are contained in the full 1977, 1978, 1981, and 1983 volumes, and a separate article gives trends in the medical use of these drugs.¹)

Throughout this report we have chosen to focus considerable attention on drug use at the higher frequency levels rather than simply reporting proportions who have ever used various drugs. This is done to help differentiate levels of seriousness, or extent, of drug involvement. While there still is no public consensus on what levels or patterns of use constitute "abuse," there is surely a consensus that higher levels of use are more likely to have detrimental effects for the user and society than are lower levels. We have also introduced indirect measures of dosage per occasion, by asking respondents the duration and intensity of the highs they usually experience with each type of drug. Chapter 7 of this report deals with those results.

For both licit and illicit drugs, separate chapters are devoted to age of first use; the students' own attitudes and beliefs; the attitudes, beliefs, and behaviors of others in their social environment; and perceived drug availability. Some of these variables have proven to be important explanators of the secular trends in use which have been observed.

Chapter 10, "Other Findings from the Study," deals with the use of nonprescription stimulants including diet pills, stay-awake pills, and the "look-alike" pseudo-amphetamines. Questions on these substances were placed in the survey beginning in 1982 because the use of such substances appeared to be on the rise, and also because their inappropriate inclusion by some respondents in their answers about amphetamine use were affecting the observed trends. This chapter continues to present trend results on those nonprescription substances.

Trend results from a set of questions on the use of marijuana at a daily or near-daily level are also presented in Chapter 10. These questions were added to enable us to develop a more complete individual history of daily use over a period of years, and they reveal some very interesting facts about the frequent users of this drug.

¹Johanson, L. D., O'Malley, P. M., & Bachman, J. G. (1987). Psychotherapeutic, licit, and illicit use of drugs among adolescents: An epidemiological perspective. *Journal of Adolescent Health Care*, 8, 36-51.

The content of two chapters in Volume II ("Attitudes and Beliefs About Drugs Among Young Adults," and "The Social Milieu for Young Adults") parallel the topics covered for high school seniors in Volume I; namely, perceived risks of various drugs, personal disapproval of various forms of drug use, exposure to the use of various drugs through friends and others, perceived norms in their own friendship circles, and perceived availability of various drugs.

PURPOSES AND RATIONALE FOR THIS RESEARCH

Perhaps no area has proven more clearly appropriate for the application of systematic research and reporting than the drug field, given its rapid rate of change, its importance for the well-being of the nation, and the amount of legislative and administrative intervention which continues to be addressed to it. Young people are often at the leading edge of social change—and this has been particularly true in the case of drug use. The massive upsurge in illicit drug use during the last twenty-five years has proven to be primarily a youth phenomenon, with onset of use most likely to occur during adolescence. Young adults in their twenties are also among the age groups at highest risk for illicit drug use: indeed, the widespread epidemic of the last twenty years really began on the nation's college campuses. From one year to the next particular drugs rise or fall in popularity, and related problems occur for youth, for their families, for governmental agencies, and for society as a whole. This year's findings show that changes continue to take place.

One of the major purposes of the Monitoring the Future series is to develop an accurate picture of the current drug use situation and trends—this in itself is a formidable task, given the illicit and illegal nature of most of the phenomena under study. Having a reasonably accurate picture of the basic size and contours of the problem of illicit drug use among young Americans is a prerequisite for rational public debate and policy making. In the absence of reliable *prevalence* data, substantial misconceptions can develop and resources can be misallocated. In the absence of reliable data on *trends*, early detection and localization of emerging problems are more difficult, and assessments of the impact of major historical and policy-induced events are much more conjectural.

The study also monitors a number of factors which may help to *explain* the observed changes in drug use. Some of them are presented in this series of volumes, including peer norms regarding drugs, beliefs about the dangers of drugs, perceived availability, and so on. In fact, monitoring these factors has made it possible to examine a central policy issue for the country in its war on drugs—namely the relative importance of supply reduction effects vs. demand reduction effects in bringing about some of the observed declines in drug use.

In addition to accurately assessing prevalence and trends and trying to determine the causes of them, the Monitoring the Future study also has many important research objectives which are not addressed in this series of volumes. Among these other objectives are: helping to determine which 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 which are associated with drug use and abuse; determining how drug use is affected by major transitions in social environment—such as

entry into military service, civilian employment, college, unemployment, or in social roles—marriage, pregnancy, parenthood; determining the life course of the various drug using behaviors from early adolescence to middle adulthood; 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, and one which its cohort-sequential research design is especially well-suited to make. Readers interested in publications dealing with any of these other areas should write the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248.

Chapter 2

OVERVIEW OF KEY FINDINGS

This monograph reports findings from the ongoing research and reporting project entitled *Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth*. Each year since 1975, in-school surveys of nationally representative samples of high school seniors have been conducted. Beginning in 1991, surveys of eighth and tenth grade students also have been conducted. In addition, each year since 1976, representative subsamples of the participants from each previous graduating class have been surveyed by mail.

Findings on the prevalence and trends in drug use and related factors are presented in this report for high school seniors and also for young adult high school graduates 19–32 years old. Trend data are presented for varying time intervals, covering up to sixteen years in the case of the high school senior population. For college students, a particularly important subset of this young adult population on which there currently exist no other nationally representative data, we present detailed prevalence and trend results (since 1980) in Volume II of this report. The high school dropout segment of the population—about 15%–20% of an age group—is of necessity omitted from the coverage of these populations, though this omission would have little effect on the coverage of college students. An appendix to this report discusses the likely impact of omitting dropouts from the sample coverage at senior year. 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 emerge from these three national populations—secondary school students, college students, and all young adults through age 32 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. However the detailed findings on college students and all young adults are presented separately in Volume II of this report, which is to be published a few months subsequent to Volume I.

TRENDS IN ILLICIT DRUG USE

- In 1991, we saw a continuation of the longer-term gradual decline in the proportion of all three populations involved in the use of *any illicit drug*, with the proportion reporting use in the past year among high school seniors dropping from the 1990 level by 3% (to 29% in 1991), among college students also dropping by 4% (to 29% in 1991), and among all young adults 19 to 28 by 4% (to 27% in 1991).

The proportion of these populations using *any illicit drug other than marijuana* in the prior year also fell, by 2% among seniors (to 16% in 1991), by 2% among college students (to 13%), and by 2% among all young adults (to 14%). Clearly, despite the improvements, large proportions of our young people are fairly recent users of drugs which are for the most part both illegal and dangerous.

- The use of *crack* cocaine appeared to level in 1987 at relatively low prevalence rates, at least within these populations. (This occurred despite the fact that the crack phenomenon continued a process of diffusion to new communities that year.) In 1991, lifetime prevalence for seniors continued to decline (to 3.1%, down from 5.4% in 1987), and annual prevalence declined to 1.5% (down from 3.9% in 1987). Among young adults one to ten years past high school, lifetime prevalence is slightly higher (4.8%, down from 6.9% in 1988) and annual prevalence is slightly lower (1.2%, down from 3.1% in 1988) than among seniors.

In 1991, college students one to four years past high school showed an annual crack prevalence of 0.5% (down from 2.0% in 1987 but down only 0.1% in 1991). Their annual prevalence is now a fraction of that observed among their age-mates not in college (1.3%). In high school, annual crack prevalence among the college-bound is also lower than among those not bound for college (1.1% vs. 2.3%).

There is now rather little regional variation in crack use with annual prevalence among seniors highest in the West (1.8%), followed by the North Central (1.5%), the Northeast (1.3%), and the South (1.2%). All regions have exhibited a decline. Use is now lower in the large cities and the nonmetropolitan areas (both at 1.2%) than in the smaller cities at 1.7%.

We believe that the particularly intense media coverage of the hazards of crack cocaine, which took place quite early in what could have been a considerably more serious epidemic, likely had the effect of "capping" that epidemic early by deterring many would-be users and by motivating many experimenters to desist use. While 3.1% of seniors report ever having tried crack, only 0.7% report use in the past month, indicating noncontinuation by 77% of those who try it. The overall downward trend can be explained both in terms of lower initiation rates among students and higher noncontinuation rates.

- *Cocaine* in general began to decline a year earlier than crack, the annual prevalence rate between 1986 and 1987 dropping by roughly four-tenths in all three populations studied.² As we had predicted earlier, the decline occurred when young people began to see experimental and occasional use—the type of use they are most

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

likely to engage in—as more dangerous; and this happened 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 cocaine-related deaths in 1986 of sports stars Len Bias and Don Rogers.

In 1991, this broad decline continued, with annual prevalence falling from 5.3% to 3.5% among seniors, from 8.6% to 6.2% among young adults one to ten years past high school, and from 5.6% to 3.6% among college students. In sum, annual prevalence of cocaine use has now fallen by more than two-thirds among all three populations.

Having risen substantially since 1986, the perceived risk of using cocaine in general showed no further change in 1991. Perceived risk for crack in particular actually dropped in 1991—perhaps due to much less public attention being paid to the drug. However, student disapproval of cocaine use continued to climb. Through 1989, there was no decline in perceived availability; in fact, it rose steadily after 1984 suggesting that decreased availability played no role in bringing about the substantial downturn in use. After 1991, however, perceived availability dropped by nearly 8% among seniors, which may be explained by the greatly reduced proportions of seniors who say they have any friends who use, since friendship circles are an important part of the supply system.

As with all the illicit drugs, lifetime cocaine prevalence climbs with age, actually exceeding 30% by age 27. Unlike all of the other illicit drugs, active use—i.e., annual prevalence or monthly prevalence—also climbs substantially after high school.

- The declines in crack and cocaine use in 1991 were accompanied by a further decline for a number of other drugs as well. The annual prevalence of *marijuana* use among seniors continued its long decline, and fell significantly to the lowest level since the study began (24%, down 3% from 1990 and down by more than half from a peak level of 51% in 1979.) A similar decrease occurred among college students (27%, down 3% from 1990 and down from a peak level of 51% in 1980) and among all young adults one to ten years past high school (down 2.3% to 24%; data before 1986 not available). *Daily marijuana use* fell non-significantly among seniors (down 0.2% to 2.0%) and young adults (down 0.2% to 2.3%); it rose slightly among college students (up 0.1% to 1.8%). For seniors, this represents more than a three-quarters overall drop in daily use from the peak level of 10.7%, observed in 1978. College students have dropped by three-fourths from our first reading of 7.2% in 1980.
- Another widely used class of illicit drugs showing a continuing decline in 1991 is *stimulants*. Declines in use continued among all three populations as part of a longer-term trend that began in

1982. Since 1982, annual prevalence has fallen from 20% to 8% among seniors and from 21% to 4% among college students. Annual prevalence is also 4% among young adults, but long-term trends are not yet available for 19–28 year olds.

- Concurrent with this drop in illicit amphetamine use is an increase in the use of over-the-counter *stay-awake pills*, which usually contain caffeine as their active ingredient. Their annual prevalence among seniors nearly doubled in eight years, from 12% in 1982 to 23% in 1990. No further change was seen in 1991, which had a 22% prevalence. Increases have also occurred among the young adult population (where annual prevalence is up by about one-third, to 21%, among the 19 to 22 year olds.)

The other two classes of nonprescription stimulants—the “*look-alikes*” and the over-the-counter *diet pills*—have actually shown some fall-off among both seniors and young adults in recent years. Still, among seniors some 28% of the females have tried diet pills by the end of senior year, 14% have used them in the past year, and 6% in just the past month.

- *LSD* use has been fairly constant in recent years among seniors (at about 5% annual prevalence), following a period of some decline. However, among college students there has been a statistically significant increase across the 1989–1991 interval, from 3.4% to 5.1%. Among all young adults the increase over that two year interval was from 2.7% to 3.8%.
- *PCP* use fell sharply, from an annual prevalence of 7.0% in 1979 to 2.2% in 1982 among high school seniors. It reached a low point of 1.2% in 1988, increased a bit to 2.4% in 1989, and then fell back to 1.4% by 1991. For the young adults, the annual prevalence rate is now only 0.3%.
- The annual prevalence of *heroin* use has been very steady since 1979 among seniors at 0.5% to 0.6%. (Earlier, it had fallen from 1.0% in 1975.) The decline to 0.4% in 1991 was not statistically significant. The heroin statistics for young adults and college students have also remained quite stable in recent years at low rates (about 0.1% to 0.2%).
- The use of *opiates other than heroin* had been fairly level over most of the life of the study. Seniors have had an annual prevalence rate of 4% to 6% since 1975. In 1991, however, the first recent significant decline (from 4.5% to 3.5%) was observed. Young adults in their twenties have generally shown a very gradual decline from 3.1% in 1986 to 2.5% in 1991.

- A long and substantial decline, which began in 1977, has occurred for *tranquilizer* use among high school seniors. Annual prevalence now stands at 3.6% compared to 11% in 1977. For the young adult sample, annual prevalence has now declined to 3.5% and for the college student sample to 2.4%.
- The long-term gradual decline in *barbiturate* use, which began at least as early as 1975, when the study began, halted in 1989; the annual prevalence among seniors fell to 3.3% compared to 10.7% in 1975. It remains at 3.4% in 1991. Annual prevalence of this class of sedative drugs is even lower among the young adult sample (1.8%), and lower still among college students specifically (1.2%).
- *Methaqualone*, another sedative drug, has shown quite a different trend pattern. Its use rose steadily among seniors from 1975 to 1981, when annual prevalence reached 8%. It then fell rather sharply to 0.5% by 1991. Use also fell among all young adults and among college students, which had annual prevalence rates of only 0.3% and 0.2%, respectively in 1989—the last year in which they were asked about this drug. In recent years, shrinking availability may well have played a role in this drop, as legal manufacture and distribution of the drug ceased.
- In sum, four classes of illicitly used drugs which have had an impact on appreciable proportions of young Americans in their late teens and twenties are *marijuana*, *cocaine*, *stimulants*, and *LSD*. In 1991, among high school seniors, they show annual prevalence rates of 24%, 4%, 8%, and 5%, respectively. Among college students in 1991, the comparable annual prevalence rates are 27%, 4%, 4%, and 5%; and for all high school graduates one to ten years past high school (the “young adult” sample) they are 24%, 6%, 4%, and 4%. It is worth noting that LSD has climbed in the rankings because it has not declined during a period in which cocaine, amphetamines, and other drugs have declined appreciably.

College-Noncollege Differences

- *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 a number of drugs which are about average for their age group, including *any illicit drug*, *marijuana* specifically (although their rate of *daily marijuana use* is about two-thirds what it is for the rest of their age group, i.e., 1.8% vs. 2.7%), *inhalants*, *hallucinogens*, *heroin*, *LSD* and *opiates other than heroin*. For several categories of drugs, however, college students have rates of use which are below those of their age peers, including *any illicit drug other than marijuana*, *cocaine*, *crack* cocaine specifically, *stimulants*, and *barbiturates*. They actually have a slightly higher rate of use for *MDMA* or “ecstasy.”

Since college-bound seniors had below average rates of use on all of these illicit drugs while they were in high school, their eventually attaining parity on many of them reflects some closing of the gap. As results from the study published elsewhere have shown, the "catching up" may be explainable more in terms of differential rates of leaving the parental home and of getting married than in terms of any direct effects of college *per se*. (College students are more likely to have left the parental home and less likely to have gotten married than their age peers.)

- In general, the trends since 1980 in illicit substance use among American college students have been found to parallel those of their age peers not in college. That means that for most drugs there has been a decline in use over the interval. Further, all young adult high school graduates through age 28, as well as college students taken separately, show trends which are highly parallel for the most part to the trends among high school seniors, although declines in the active use of many of the drugs over the past half decade have been proportionately larger in these two older populations than among high school seniors.

Male-Female Differences

- Regarding sex differences in the three populations, 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 1991, for example, is reported by 3.0% of males vs. 0.9% of females; among all young adults by 3.6% of males vs. 1.4% of females; and among college students, specifically, by 2.5% of males vs. 1.3% of females. The only exceptions to the rule that males are more frequently users of illicit drugs than females occur for **stimulant** and **tranquilizer** use in high school, where females are at the same level or slightly higher. The sexes also attain near parity on stimulant and tranquilizer use among the college and young adult populations.

TRENDS IN ALCOHOL USE

- Regarding **alcohol** use in these age groups, several findings are noteworthy. First, despite the fact that it is illegal for virtually all high school students and most college students to purchase alcoholic beverages, experience with alcohol is almost universal among them (88% of seniors have tried it) and active use is widespread. Most important, perhaps, is the widespread occurrence of **occasions of heavy drinking**—here measured by the percent reporting five or more drinks in a row at least once in the prior two-week period. Among seniors this statistic stands at 30% and among college students it stands at 43%.

- Regarding trends in alcohol use, during the period of recent decline in the use of marijuana and other illicit drugs there appears not to have been any “displacement effect” in terms of any increase in alcohol use among seniors. (It was not uncommon to hear such a displacement hypothesis asserted.) If anything, the opposite seems to be true. Since 1980, the monthly prevalence of alcohol use among seniors has gradually declined, from 72% in 1980 to 54% in 1991. *Daily use* declined from a peak of 6.9% in 1979 to 3.6% in 1991; and the prevalence of drinking *five or more drinks in a row* during the prior two-week interval fell from 41% in 1983 to 30% in 1991.

College-Noncollege Differences

- The data from college students show a quite different pattern in relation to alcohol use. They show less drop-off in monthly prevalence since 1980 (about 7%), and no clearly discernible change in *daily use* or in *occasions of heavy drinking*, which is at 43% in 1991—higher than the 30% among high school seniors. Since both their noncollege-age peers and high school students have been showing a net decrease in occasions of heavy drinking since 1980, the college students stand out in having maintained a very high rate of binge or party drinking. Since the college-bound seniors *in* high school are consistently less likely to report occasions of heavy drinking than the noncollege-bound, this reflects their “catching up and passing” their peers after high school.
- In most surveys from 1980 onward, college students have had a *daily drinking* rate (4.1% in 1991) which is slightly lower than that of their age peers (4.5% in 1991), suggesting that they are somewhat more likely to confine their drinking to weekends, on which occasions they tend to drink a lot. Again, college men have much higher rates of daily drinking than college women: 6.0% vs. 2.5%. The rate of daily drinking has fallen considerably among the noncollege group from 8.7% in 1981 to 4.5% in 1991.

Male-Female Differences

- There remains a quite substantial sex difference among high school seniors in the prevalence of *occasions of heavy drinking* (21% for females vs. 38% for males in 1991); this difference generally has been diminishing very gradually since the study began over a decade ago.
- There also remain very substantial sex 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. 35% of college females. However, there has been little change in the differences between 1980 and 1991.

TRENDS IN CIGARETTE SMOKING

- A number of important findings have emerged from the study concerning *cigarette smoking* among American adolescents and young adults. Of greatest importance is the fact that by late adolescence sizeable proportions of young people still are establishing regular cigarette habits, despite the demonstrated health risks associated with smoking. In fact, since the study began in 1975, cigarettes have consistently comprised the class of substance most frequently used on a daily basis by high school students.
- While the *daily smoking* rate for seniors did drop considerably between 1977 and 1981 (from 29% to 20%), it has dropped very little in the ten years since (by another 1.8%), despite the appreciable downturn which has occurred in most other forms of drug use (including alcohol) during this period. And, despite all the adverse publicity and restrictive legislation addressed to the subject during the 1980's, the proportion of seniors who perceive "great risk" to the user of suffering physical (or other) harm from pack-a-day smoking has risen only 5% since 1980 (to 69% in 1991). That means that nearly a third of seniors still do not feel there is a great risk associated with smoking. As we will see below, even smaller proportions of the younger students associate much risk with smoking.

Age and Cohort-Related Differences

- Initiation of daily 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.
- 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 were daily smokers in high school, nearly three-quarters were daily smokers 7 to 9 years later (based on the 1985 survey), despite the fact that in high school only 5% of them thought they would "definitely" 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. And with the addition of eighth and tenth grade to the 1991 survey, we now know that younger children are even more likely than older ones to underestimate the dangers of smoking.

College-Noncollege Differences

- A striking difference exists between college-bound and noncollege-bound high school seniors in terms of smoking rates. For example, smoking half-pack or more a day is nearly three times as prevalent among the noncollege-bound (19% vs. 7%). 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 18% and 8%, respectively.

Male-Female Differences

- In 1991, among college students, females have slightly higher probabilities of being daily smokers.

DRUG USE IN EIGHTH AND TENTH GRADES

To this point the discussion has focused primarily on trends in use, because of their great policy importance. Since eighth and tenth grade students were surveyed for the first time in 1991, a discussion of changes at those grade levels is not yet possible, though we suspect that most of the trends would parallel those observed among seniors. (The major exception may occur for cigarettes, change in which we have shown to be explainable more by class cohort than by historical period.) However, a number of interesting findings emerge from these earlier grade levels. Table 4, in this volume, gives the prevalence rates for all drugs by all prevalence periods for the eighth, tenth, and twelfth grade samples. Among the most noteworthy findings are these:

- By eighth grade, which corresponds to a modal age of 13, 70% of youngsters report having tried *alcohol* and more than a quarter (27%) say they have already been drunk at least once.
- *Cigarettes* have been tried by nearly half of eighth graders (44%) and 14%, or one in seven, say they have smoked in the prior month. Only 53% say they think there is great risk associated with being a pack-a-day smoker.
- *Inhalants* have been used by more than one in every six eighth graders (18%) and 4.4% say 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 one in every ten eighth graders (10%) but has been used in the prior month by only 3%. Today, some 42% of eighth graders see great risk associated with even trying marijuana.

- A surprisingly large number of eighth graders say they have tried prescription-type *stimulants* (10.5%), though only 2.6% say they have used in the prior 30 days. These figures may be exaggerated by the inclusion of non-prescription stimulants, however.
- Consistent with the retrospective reports from seniors, which have been included in this series in previous years, relatively few eighth graders say they have tried most of the other illicit drugs yet.
- However, the large numbers who have already begun use of the so-called "gateway drugs" (cigarettes, alcohol, and marijuana) suggests that a substantial number of eighth grade students are already at risk, proceeding further along the fairly orderly progression of involvement.
- The lifetime prevalence rates in 1991 were: 3.8% for *tranquilizers*, 3.2% for *hallucinogens*, 2.3% for *cocaine*, 1.3% for *crack cocaine* specifically, and 1.2% for *heroin*. Some 1.9% indicated that they had tried *steroids*; 3% of the eighth grade boys reported such use.

Racial/Ethnic Comparisons

While we have published articles elsewhere on ethnic differences in drug use, this is the first volume in this series to include prevalence and trend data for the three largest ethnic groupings—whites, blacks, and Hispanics taken as a group. (Sample size limitations simply do not allow finer breakdowns unless many years are combined.) Further, 1991 is the first year in which we have eighth and tenth grade data, on which ethnic comparisons would be less likely to be affected by differential dropout rates among the three groups, than would be true for seniors. A number of interesting findings emerge in these comparisons, and the reader is referred to Chapters 4 and 5 for a full discussion of them.

- Black students show lower usage rates on most drugs, licit and illicit, than do white students; and this is true across grade levels. In some cases, the differences are quite large.
- Black students have a much lower prevalence of *daily cigarette smoking* (for example, 5% vs. 21% in senior year), due to the fact that their smoking rate continued to decline after 1983 or so, while the rate for whites stabilized.
- In twelfth grade, *binge drinking* is much less likely to be reported by black students (12%) than by white (33%) or Hispanic students (30%).
- In twelfth grade, of the three groups, whites have the highest rates of use on a number of drugs, including *marijuana*, *inhalants*, *hallucinogens*, *LSD* specifically, *barbiturates*, *methaqualone*, *amphetamines*, *tranquilizers*, *opiates other than heroin*, *alcohol*, and *cigarettes*.

- However, in senior year, Hispanics have the highest usage rate for a number of the most dangerous drugs: *cocaine, crack, other cocaine, PCP, heroin, ice, and steroids*. 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 lifetime prevalence for Hispanics, whites, and blacks is 17%, 9%, and 8% for *marijuana*; 19%, 18%, and 11% for *inhalants*; 5%, 3%, and 1% for *hallucinogens*; 51%, 46%, and 35% for *cigarettes*; 19%, 13%, and 10% for *binge drinking*; etc. In other words, Hispanics have the highest rates of use for nearly all drugs in eighth grade, but not in twelfth, which suggests that their higher dropout rate may change their relative ranking by twelfth grade. There also may be a tendency to begin use earlier—a hypothesis yet to be tested.
- With regard to trends, seniors in all three racial/ethnic groups exhibited the recent decline in *cocaine* use, although black seniors did not show as large an increase in use as did whites and Hispanics; therefore, their decline was less steep.
- 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—like *stimulants, barbiturates, methaqualone, and tranquilizers*—they also had the largest declines; blacks have had the lowest rates, and therefore, the smallest declines.
- Important racial/ethnic differences in *cigarette smoking* have emerged among seniors during the life of the study. In the late 70's, the three groups were fairly similar in their smoking rates; all three mirrored the general decline in smoking from 1977–1981. Since 1981, however, smoking rates have declined very little for whites and Hispanics, but the rates for blacks continued to decline steadily. As a result, in 1991, the daily smoking rates for blacks is one-quarter to one-third that for whites.

SUMMARY AND CONCLUSIONS

- To summarize the findings on trends, over the last ten years there have been appreciable declines in the use of a number of the *illicit drugs* among seniors, and even larger declines in their use among American college students and young adults more generally. The stall in these favorable trends in all three populations in 1985, as well as an increase in active *cocaine* use that year, should serve as a reminder that these improvements cannot be taken for granted. Fortunately, in 1986 we saw the general decline resume and the prevalence of cocaine level off, albeit at peak levels; and since then the general decline continued, while cocaine use took a sharp downturn (in 1987) for the first time in more than a decade, and it

continued to decline through 1991. **Crack** use began to decline in 1988 among seniors and continues to gradually decline in all three populations for which trend data are available.

While the normal type of trend data are not available, a comparison of the levels of **inhalant** use across the three grade levels, combined with the retrospective trend data from seniors, suggests that the use of inhalants (other than the nitrite inhalants, which tend to be used at an older age than most others) may have been increasing—particularly at lower ages. If so, this would be a trend contrary to those observed for nearly all other illicit drugs.

- While the overall picture has improved considerably in recent years, the amount of illicit as well as licit drug use among America's younger age groups is still striking when one takes into account the following facts:

By their late twenties, about 75% of today's young adults have tried an **illicit drug**, including about 50% who have tried some **illicit drug other than** (usually in addition to) **marijuana**. Even for high school seniors these proportions still stand at 44% and 27%, respectively.

By age 27, 30% have tried **cocaine**; and as early as the senior year of high school 8% have done so. Roughly one in every thirty seniors (3.1%) have tried the particularly dangerous form of cocaine called **crack**; in the young adult sample 5.3% have tried it.

Some 2.0% of high school seniors in 1991 smoke **marijuana daily**, and roughly the same proportion (2.3%) of young adults aged 19 to 28 do, as well. Among all seniors in 1991, 9% had been daily marijuana smokers at some time for at least a month, and among young adults the comparable figure is 16%.

Some 30% of seniors have had **five or more drinks in a row** at least once in the prior two weeks, 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%.

Some 28% of seniors have smoked **cigarettes** in the month prior to the survey and 19% already are daily smokers. In addition, many of the lighter smokers will convert to heavy smoking after high school. For example, more than one in every five young adults aged 19 to 28 is a daily smoker (22%), and one in six (16%) smokes a half-pack-a-day or more.

- Despite the improvements in recent years, it is still true that this nation's secondary school students and young adults show a level of involvement with illicit drugs which is greater than has been documented in any other industrialized nation in the world. 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 large proportions 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 the potential for our young people to "rediscover" older drugs, such as LSD. While as a society we have made significant progress on a number of fronts in the fight against drug abuse, we must continually be preparing for, and remaining vigilant against, the opening of new fronts, as well as the reemergence of trouble on the older ones.

Chapter 3

STUDY DESIGN AND PROCEDURES

The research design, sampling plans, and field procedures used in both the in-school surveys of seniors, and the follow-up surveys of young adults, are presented in this chapter. Related methodological issues such as response rates, population coverage, and the validity of the measures will also be discussed.

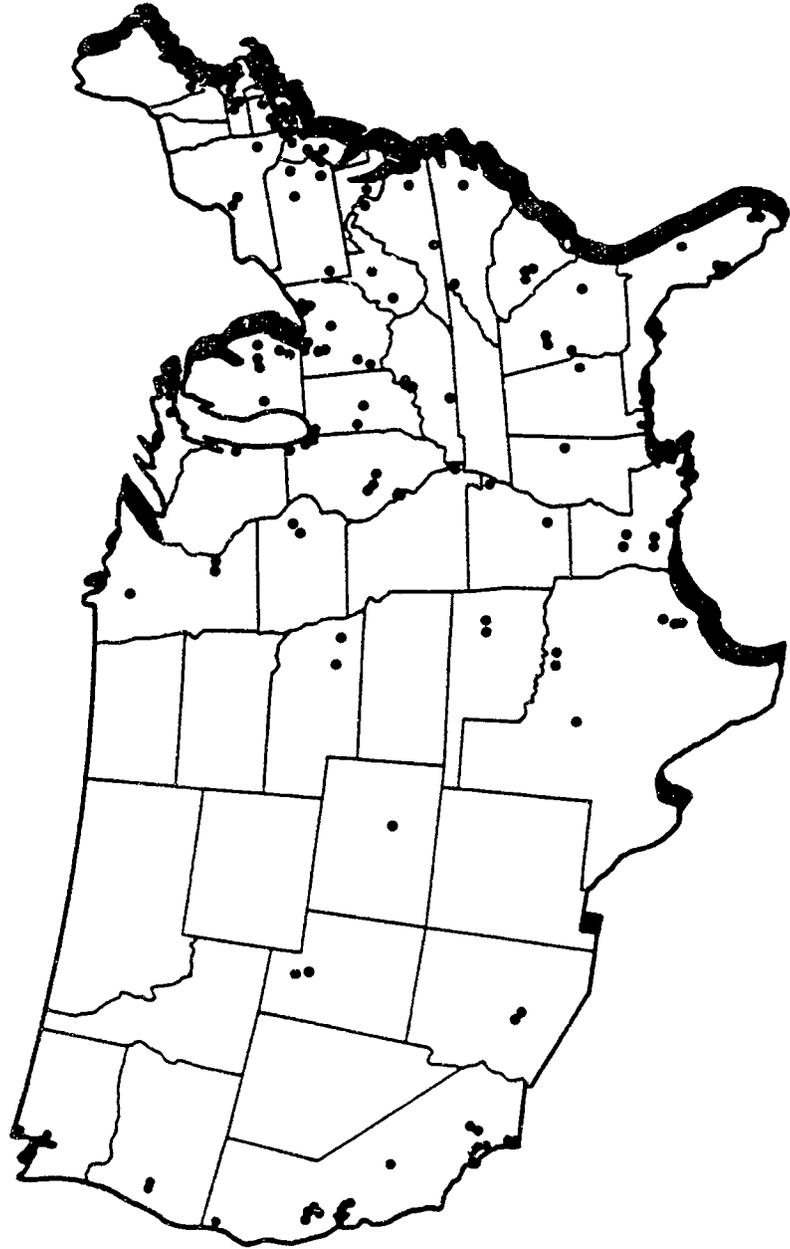
RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF SENIORS

The data from high school seniors are collected during the spring of each year, beginning with the class of 1975. Each data collection takes place in approximately 125 to 135 public and private high schools selected to provide an accurate representative cross-section of high school seniors throughout the coterminous United States (see Figure 1).

The population under study. There are several reasons for choosing the senior year of high school as an optimal point for monitoring the drug use and related attitudes of youth. First, the completion of high school represents the end of an important developmental stage in this society, since it demarcates both the end of universal public 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, the completion of high school represents the jumping-off point from which young people diverge into widely differing social environments and experiences. Finally, there are some important practical advantages to building a 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 design to date has been that it does not include in the target population 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. The omission of high school dropouts does introduce 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. An Appendix to this volume 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 to it for a more detailed discussion of this issue.

FIGURE 1
Location of Schools Surveyed



Sampling procedures. A multi-stage random sampling procedure is used for securing the nationwide sample of high school seniors each year. Stage 1 is the selection of particular geographic areas, Stage 2 the selection of one or more high schools in each area, and Stage 3 the selection of seniors within each high school. This three-stage sampling procedure yielded the numbers of participating schools and students shown in Table 1.

Questionnaire administration. About ten days before the administration, students 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 is divided into six different questionnaire forms which are distributed to participants in an ordered sequence that ensures six virtually identical subsamples. (Five questionnaire forms were used between 1975 and 1988.) About one-third of each questionnaire form consists of key or "core" variables which are common to all forms. All demographic variables, and nearly all of the drug use variables included in this report, are included in this core set of measures. Many of the questions dealing with attitudes, beliefs, and perceptions of relevant features of the social environment are contained in only a single form, however, and are thus based on one-sixth as many cases (i.e., approximately 2,600 respondents in 1991) or one-fifth as many cases in 1975-1988 (e.g., approximately 3,300 respondents in 1988). All tables in this report give the sample sizes upon which the statistics are based, stated in terms of weighted numbers of cases (which are roughly equivalent to the actual numbers of cases).

RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF THE EIGHTH AND TENTH GRADERS

For reasons indicated in Chapter 1, beginning in 1991 we expanded the study to include nationally representative samples of eighth and tenth grade students. Our intention is to conduct similar surveys on an annual basis and to conduct follow-up surveys of representative sub-samples from each year's sample. As of 1991, however, no follow-ups have yet been implemented.

In general, the procedures used for the annual surveys of eighth and tenth grade students closely parallel those used for high school seniors, including the procedures for selecting schools and students, questionnaire administrations, and questionnaire formats. A major exception is that only two different questionnaire forms are used, 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 two forms used in both eighth and tenth grades have a common core (Parts B and C) that parallels the core used in twelfth grade, and each form has somewhat different questions in Parts

TABLE 1
Sample Sizes and Response Rates

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991
<i>Twelfth Grade</i>																	
Number public schools	111	108	108	111	111	107	109	116	112	117	115	113	117	113	111	114	117
Number private schools	14	15	16	20	20	20	19	21	22	17	17	16	18	19	22	23	19
Total number schools	125	123	124	131	131	127	128	137	134	134	132	129	135	132	133	137	136
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
Student response rate	78%	77%	79%	83%	82%	82%	81%	83%	84%	83%	84%	83%	84%	83%	86%	86%	83%
<i>Tenth Grade</i>																	
Number public schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	107
Number private schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14
Total number schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	121
Total number students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16,038
Student response rate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87%
<i>Eighth Grade</i>																	
Number public schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	131
Number private schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31
Total number schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162
Total number students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18,314
Student response rate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90%

A and D. Many fewer questions about lifestyles and values are included in these forms than in the twelfth grade forms, in part because we think that many of these attitudes are more likely to be formed by twelfth grade, and therefore are best monitored there.

For the national survey of eighth graders, approximately 160 schools are sampled, and approximately 18,000 students are surveyed. For the tenth graders, approximately 130 schools are sampled, and approximately 16,000 students are surveyed.

Our intention is to conduct follow-up surveys at two-year intervals of subsamples of the eighth and tenth graders participating in the study, much as is done with senior follow-up samples. The first such follow-up would be implemented in 1993. This plan has influenced the design of the cross-sectional studies of eighth and tenth graders in two important ways. First, 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 select the eighth grade schools by first drawing a sample of high schools and then selecting a sample of their feeder schools which contain eighth graders. This extra stage in the sampling process means that many of the eighth grade participants in, say, the 1991 cross-sectional survey will also be participants in the 1993 cross-sectional survey of tenth graders. Thus, a fair amount of panel data will have been generated at no additional cost.

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

Beginning with the graduating class of 1976, each class is followed up annually after high school on a continuing basis. 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 fitting certain criteria of current drug use (that is, those reporting 20 or more uses of 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 the differential sampling probabilities. Because those in the drug-using stratum receive a weight of only .33 in the calculation of all statistics to compensate for their overrepresentation, 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, and thus yield a better retention rate across years.

Follow-up procedures. Using information provided by respondents 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 with those 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 \$5.00, made payable to the respondent, is attached to the front of each questionnaire. Reminder letters and postcards go out at fixed inter-

vals thereafter; finally, those not responding 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 the panel retention rates have remained quite high. In the first follow-up after high school, about 82% of the original panel have returned questionnaires. The retention rate reduces with time, as would be expected. The 1991 panel retention from the class of 1976—the oldest of the panels, now aged 33 (15 years past high school)—still remains at 65%.

Corrections for panel attrition. Since, to a modest degree, attrition is associated with drug use, we have introduced corrections into the prevalence estimates presented here for the follow-up panels. These raise the prevalence estimates from what they would be uncorrected, 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.³

REPRESENTATIVENESS AND VALIDITY

School participation. Schools are invited to participate in the study for a two-year period. With very few exceptions, each school in the original sample, after participating for one year of the study, has agreed to participate for a second year. Each year thus far, from 66 percent to 80 percent of the schools invited to participate initially have agreed to do so; for each school refusal, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement. The selection of replacement schools 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 reasons 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 content of the survey. Thus we feel quite confident that school refusals have not seriously biased the surveys.

³The 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 use of the relevant substance in the follow-up compared to the base year distribution. 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 base-year class of 17,000 respondents; and weights were derived which, when applied to the base-year data for only those 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.

Schools are selected in such a way that half of each year's sample is comprised of schools which participated the previous year, and half is comprised of schools which will participate the next year. This staggered half-sample design is used to check on possible errors in the year-to-year trend estimates due to school turnover. Specifically, separate sets of one-year trends are computed using first that half-sample of schools which participated in both 1975 *and* 1976, then the half-sample which participated in both 1976 *and* 1977, and so on. Thus, each one-year trend estimate derived in this way is based on a constant set of about 65 schools. When the resulting trend data (examined separately for each class of drugs) are compared with trends based on the total samples of schools, the results are highly similar, indicating that the trend estimates are little affected by turnover or shifting refusal rates in the school samples. The absolute prevalence estimates for a given year are not as accurate using just the half-sample, however.

Student participation. Completed questionnaires are obtained from 77% to 86% of all sampled seniors in participating schools each year (see Table 1). Student participation rates for eighth and tenth grades are somewhat higher (90% at 87%, respectively, in 1991). The single most important reason that students are missed is absence from class at the time of data collection; in most cases it is not workable to schedule a special follow-up data collection for absent students. Students with fairly high rates of absenteeism also report above-average rates of drug use; therefore, there is some degree of bias introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting; 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 undesirable complications. Appendix A of one of our earlier reports⁴ provides a discussion of this point and the Appendix to this report shows trend and prevalence estimates which would result with corrections for absentees 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 percent of the target sample.

Sampling accuracy of the estimates. For purposes of this introduction, it is sufficient to note that drug use estimates based on the total sample of seniors each year have confidence intervals that average about $\pm 1\%$ (as shown in Table 2, confidence intervals vary from $\pm 2.1\%$ to smaller than ± 0.3 depending on the drug).⁵ This means that had we been able to invite all schools and all seniors in the 48 coterminous states to participate, the results from such a massive survey should be within about one percentage point of our present findings for most drugs at least 95 times out of 100. We consider this to be a high level of sampling accuracy, and one that permits the detection of fairly small changes from one year to the next.

⁴Johnston, 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.

⁵Confidence intervals for the eighth and tenth grade samples would be comparable.

VALIDITY OF THE MEASURES OF SELF-REPORTED DRUG USE

The question always arises whether sensitive behaviors like drug use are 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 inferential evidence that exists strongly suggests that the self-report questions produce largely valid data. A more complete discussion of the contributing evidence which leads to this conclusion may be found in other publications; here we will only briefly summarize the evidence.⁶

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.⁷ In essence, this means that 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 as high as 80% in some follow-up years, which constitutes *prima facie* evidence that the degree of underreporting must be very limited. Fourth, the seniors' reports of use by their friends—about which they would presumably have less reason to distort—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 the instruction to respondents to leave blank those drug use questions they felt they could not answer honestly. And seventh, the great majority of respondents, when asked, say they would answer such questions honestly if they were users.

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 there exists any remaining reporting bias, we believe it to be in the direction of underreporting. Thus, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

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 to another. Accordingly, the measures and

⁶Johnston, 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.

⁷O'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.

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.

SECONDARY SCHOOL STUDENTS

Chapter 4

PREVALENCE OF DRUG USE AMONG EIGHTH, TENTH, AND TWELFTH GRADE STUDENTS

This section summarizes the levels of drug use reported by the national samples of eighth, tenth, and twelfth grade students surveyed in 1991. Prevalence and frequency of use data are included for lifetime use, use in the past year, and use in the past month. The prevalence of current daily use also is provided. There are comparisons of key subgroups in the population based on sex, college plans, region of the country, population density (or urbanicity), socioeconomic status, and racial/ethnic identification.

Because we think that the revised questions on amphetamine use, introduced in 1982, give a more accurate picture of the actual use of that controlled substance, all references to amphetamine prevalence rates in this section, as well as references to proportions using "any illicit drug" or "any illicit drug other than marijuana", will be based on that revised version of the amphetamine question.

It should be noted that all of the prevalence statistics given in this section are based on students in attendance on the day of the survey administration. Selected prevalence rate estimates reflecting adjustments for absentees, as well as for dropouts, may be found in the Appendix to this report.

PREVALENCE AND FREQUENCY OF DRUG USE IN 1991: ALL STUDENTS

Lifetime, Annual, and Monthly Prevalence and Frequency

- Table 4 provides the *prevalence* rates for all drugs at all three grade levels on lifetime, annual, past 30 days, and daily in past 30 days. Table 5 provides the *frequency* of use for each drug within each prevalence period; Figure 2 presents the drugs ranked by lifetime prevalence within each grade level.
- Less than half of all seniors (44%) report *illicit drug use* at some time in their lives. More than a third of them have used *only marijuana* (17% of the sample or 39% of all illicit users).

TABLE 2
Lifetime Prevalence (Percent Ever Used)
of Various Types of Drugs:
Observed Estimates and 95% Confidence Limits
Class of 1991
 (Approx. N = 15000)

	<u>Lower limit</u>	<u>Observed estimate</u>	<u>Upper limit</u>
Marijuana/Hashish	34.6	36.7	38.9
Inhalants ^a	16.5	17.6	18.8
<i>Inhalants Adjusted^b</i>	16.6	18.0	19.5
Amyl & Butyl Nitrites ^c	1.0	1.6	2.4
Hallucinogens	8.5	9.6	10.8
<i>Hallucinogens Adjusted^d</i>	9.0	10.0	11.1
LSD	7.8	8.8	9.9
PCP ^c	2.1	2.9	4.0
Cocaine	6.8	7.8	8.9
"Crack"	2.5	3.1	3.8
Other cocaine ^e	6.3	7.0	7.8
Heroin	0.7	0.9	1.2
Other opiates ^f	5.9	6.6	7.3
<i>Stimulants Adjusted^{f,g}</i>	14.1	15.4	16.8
Crystal Methamphetamine ("Ice") ^h	2.5	3.3	4.4
Sedatives ^{c,f}	5.5	6.7	8.2
Barbiturates ^f	5.4	6.2	7.2
Methaqualone ^{c,f}	0.8	1.3	2.1
Tranquilizers ^f	6.3	7.2	8.2
Alcohol	86.2	88.0	89.6
Cigarettes	61.3	63.1	64.9
Steroids ^h	1.5	2.1	3.0

^aData based on five questionnaire forms. N is five-sixths of N indicated

^bAdjusted for underreporting of amyl and butyl nitrites. See text for details.

^cData based on a single questionnaire form. N is one-sixth of N indicated.

^dAdjusted for underreporting of PCP. See text for details.

^eData based on four questionnaire forms. N is four-sixths of N indicated.

^fOnly drug use which was not under a doctor's orders is included here.

^gBased on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants

^hData based on two questionnaire forms. N is two-sixths of N indicated.

- More than a quarter of all seniors (27%) report having used an **illicit drug other than marijuana** at some time.^{8,9}
- Table 2 provides, for seniors, the 95% confidence interval around the lifetime prevalence estimate, for each drug.
- **Marijuana** is by far the most widely used illicit drug among seniors with 37% reporting some use in their lifetime, 24% reporting some use in the past year, and 14% reporting some use in the past month. It is also the most widely used illicit drug among tenth graders, with 23% lifetime prevalence, 17% annual prevalence, and 9% current (30-day) prevalence. Among the eighth graders it is also one of the most prevalent of the illicit drugs (10% lifetime prevalence) although **inhalants** have a considerably higher lifetime prevalence (18%), and **stimulants** a slightly higher one (11%).
- In tenth and twelfth grades, **inhalants** are the second most prevalent of the illicit drugs other than marijuana, with lifetime prevalence rates of 16% and 18%, respectively. These are followed closely by **stimulants**, with lifetime prevalence rates of 13% and 15%, respectively. However, in terms of current use, the inhalants would rank lower at these grade levels since more of the early users have discontinued use, as will be discussed in the next section of this chapter.
- **Cocaine** is the next most widely used substance among seniors (8% lifetime prevalence) but ranks lower among eighth and tenth graders because of its relatively late age of onset compared to other drugs.
- **Heroin** is the least commonly used of the illicit drugs with about 1% of each grade level reporting any experience. Use is slightly higher in the lower two grade levels (1.2% lifetime prevalence in grades 8 and 10) than among seniors (0.9%). This unusual circumstance, which seems to show up in number of studies, likely reflects the fact that heroin users are considerably more likely to have left school by senior year. It is, after all, a very deviant behavior, and all the more so when it occurs at a young age.

⁸Use of "other illicit drugs" includes any use of hallucinogens, cocaine, or heroin *or* any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990-1991), or tranquilizers that is not under a doctor's orders.

⁹Indexes of any illicit drug use, or any illicit drug use other than marijuana, have not been calculated for eighth and tenth graders because usable data do not exist for certain component classes of drugs—in particular, sedatives and opiates other than heroin. Questions on these drugs were included in the questionnaires given to eighth and tenth graders, but the results lead us to believe that some respondents were including nonprescription drugs in their answers, resulting in exaggerated prevalence rates.

- **Crack cocaine** now has a very low prevalence in all grade levels; a lifetime prevalence of 1%, 2%, and 3%, respectively for grades 8, 10, and 12. Crack is the form of cocaine which comes in small chunks or "rocks," which are smoked, thus providing a more rapid and intense high. It came onto the American scene very rapidly during the mid-80's.¹⁰
- Some 3.1% of all seniors indicated having tried **crack** at some time in their lives. Roughly half of those (1.5% of all seniors) reported use in the past year, but only one-fourth of them (0.7% of all seniors) reported use in the last month. Among those seniors who used **cocaine** in any form during the past year (3.5% of all seniors), about 43% used it in crack form, usually in addition to using it in powdered form.
- The specific classes of inhalants known as **amyl and butyl nitrites**, which have been sold legally and go by the street names of "poppers" or "snappers" and such brand names as Locker Room and Rush, have been tried by only one in sixty seniors (1.6%). Their use is not asked of eighth and tenth grade students.
- In past years, the **inhalant** estimates for seniors have been adjusted upward after we discovered that the users of amyl and butyl nitrites did not always report themselves to be inhalant users. Because we included questions specifically about nitrite use for the first time in one 1979 senior questionnaire form, we were able to discover this problem and make estimates of the degree to which inhalant use was being underreported in the overall estimates. As a result, all prevalence estimates for inhalants have been increased, with the proportional increase being greater for the more recent time intervals (i.e., last month, last year) because use of the other common inhalants, such as glue and aerosols, is more likely to have been discontinued prior to senior year, making nitrite use proportionally more important in later years.
- We also discovered in 1979, when questions specifically about **PCP** use were added, that some users of PCP did not report themselves as users of hallucinogens, even though PCP is explicitly included as an example in the questions about hallucinogens. Thus, from 1979 onward, the **hallucinogen** prevalence and trend estimates for

¹⁰We included a single question about crack use for the first time in the 1986 survey of seniors; it was contained in only a single questionnaire form and asked only of those indicating some cocaine use during the prior twelve months. In the 1987-1989 surveys of seniors, we included our full standard set of three questions asked for each drug (frequency of use in lifetime, last 12 months, and last 30 days) for crack use in two questionnaire forms (N=6,500 in 1987 and 1988, N=5,500 in 1989). Beginning in 1990, the crack prevalence questions were included in all six questionnaire forms.

TABLE 3a
Lifetime Prevalence (Percent Ever Used)
and Recency of Use of
Various Types of Drugs
Eighth Graders, 1991
 (Approx. N = 17500)

	Ever used	Past month	Past year, not past month	Not past year	Never used
Marijuana/Hashish	10.2	3.2	3.0	4.0	89.8
Inhalants	17.6	4.4	4.6	8.6	82.4
Hallucinogens	3.2	0.8	1.1	1.3	96.8
LSD	2.7	0.6	1.1	1.0	97.3
Cocaine	2.3	0.5	0.6	1.2	97.7
"Crack"	1.3	0.3	0.4	0.6	98.7
Other cocaine	2.0	0.5	0.5	1.0	98.0
Heroin	1.2	0.3	0.4	0.5	98.8
Stimulants ^a	10.5	2.6	3.6	4.3	89.5
Tranquilizers ^a	3.8	0.8	1.0	2.0	96.2
Alcohol	70.1	25.1	28.9	16.1	29.9
Cigarettes	44.0	14.3	(29.7) ^b		56.0
Steroids	1.9	0.4	0.6	0.9	98.1

^aOnly drug use which was not under a doctor's orders is included here.

^bThe combined total for the two columns is shown because the question asked did not discriminate between the two answer categories.

TABLE 3b
Lifetime Prevalence (Percent Ever Used)
and Recency of Use of
Various Types of Drugs
Tenth Graders, 1991
 (Approx. N = 14800)

	Ever used	Past month	Past year, not past month	Not past year	Never used
Marijuana/Hashish	23.4	8.7	7.8	6.9	76.6
Inhalants	15.7	2.7	4.4	8.6	84.3
Hallucinogens	6.1	1.6	2.4	2.1	93.9
LSD	5.6	1.5	2.2	1.9	94.4
Cocaine	4.1	0.7	1.5	1.9	95.9
"Crack"	1.7	0.3	0.6	0.8	98.3
Other cocaine	3.8	0.6	1.5	1.7	96.2
Heroin	1.2	0.2	0.3	0.7	98.8
Stimulants ^a	13.2	3.3	4.9	5.0	86.8
Tranquilizers ^a	5.8	1.2	2.0	2.6	94.2
Alcohol	83.8	42.8	29.5	11.5	16.2
Cigarettes	55.1	20.8	(34.3) ^b		44.9
Steroids	1.8	0.6	0.5	0.7	98.2

^aOnly drug use which was not under a doctor's orders is included here.

^bThe combined total for the two columns is shown because the question asked did not discriminate between the two answer categories.

TABLE 3c

Lifetime Prevalence (Percent Ever Used)
and Recency of Use of
Various Types of Drugs
Twelfth Graders, 1991

(Approx. N = 15000)

	Ever used	Past month	Past year, not past month	Not past year	Never used
Marijuana/Hashish	36.7	13.8	10.1	12.8	63.3
Inhalants ^a	17.6	2.4	4.2	11.0	82.4
<i>Inhalants Adjusted^b</i>	18.0	2.6	4.3	11.1	82.0
Amyl & Butyl Nitrites ^c	1.6	0.4	0.5	0.7	98.4
Hallucinogens	9.6	2.2	3.6	3.8	90.4
<i>Hallucinogens Adjusted^d</i>	10.0	2.4	3.7	3.9	90.0
LSD	8.8	1.9	3.3	3.6	91.2
PCP ^c	2.9	0.5	0.9	1.5	97.1
Cocaine	7.8	1.4	2.1	4.3	92.2
"Crack"	3.1	0.7	0.8	1.6	96.9
Other cocaine ^e	7.0	1.2	2.0	3.8	93.0
Heroin	0.9	0.2	0.2	0.5	99.1
Other opiates ^f	6.6	1.1	2.4	3.1	93.4
<i>Stimulants Adjusted^{f,g}</i>	15.4	3.2	5.0	7.2	84.6
Crystal Methamphetamine ("Ice") ^h	3.3	0.6	0.8	1.9	96.7
Sedatives ^{c,f}	6.7	1.5	2.1	3.1	93.3
Barbiturates ^f	6.2	1.4	2.0	2.8	93.8
Methaqualone ^{c,f}	1.3	0.2	0.3	0.8	98.7
Tranquilizers ^f	7.2	1.4	2.2	3.6	92.8
Alcohol	88.0	54.0	23.7	10.3	12.0
Cigarettes	63.1	28.3	(34.8) ⁱ		36.9
Steroids ^h	2.1	0.8	0.6	0.7	97.9

^aData based on five questionnaire forms. N is five-sixths of N indicated.

^bAdjusted for underreporting of amyl and butyl nitrites. See text for details.

^cData based on a single questionnaire form. N is one-sixth of N indicated.

^dAdjusted for underreporting of PCP. See text for details.

^eData based on four questionnaire forms. N is four-sixths of N indicated.

^fOnly drug use which was not under a doctor's orders is included here.

^gBased on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

^hData based on two questionnaire forms. N is two-sixths of N indicated.

ⁱThe combined total for the two columns is shown because the question asked did not discriminate between the two answer categories.

FIGURE 2

Prevalence and Recency of Use
 Various Types of Drugs, Eighth, Tenth, and Twelfth Graders, 1991

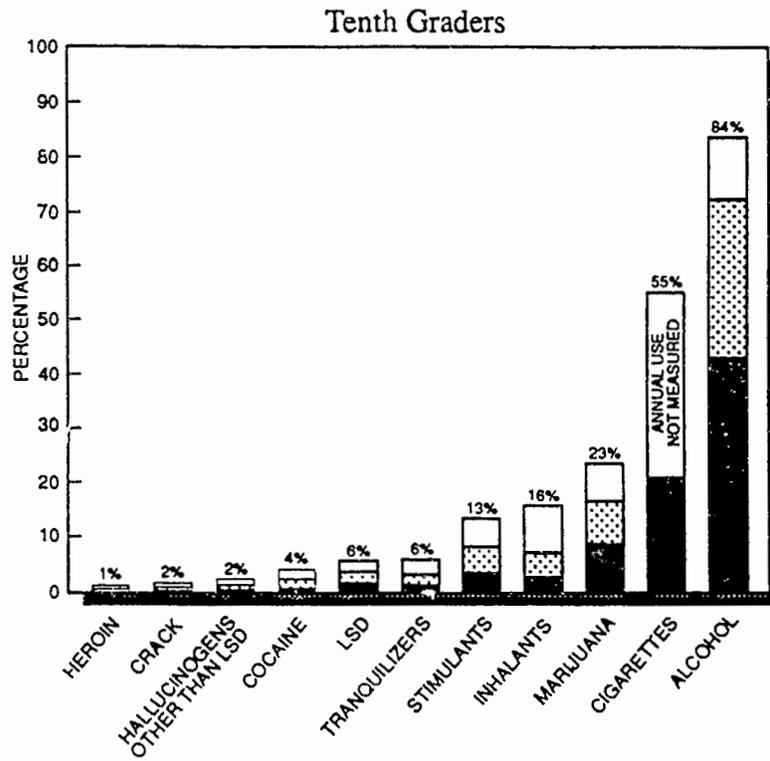
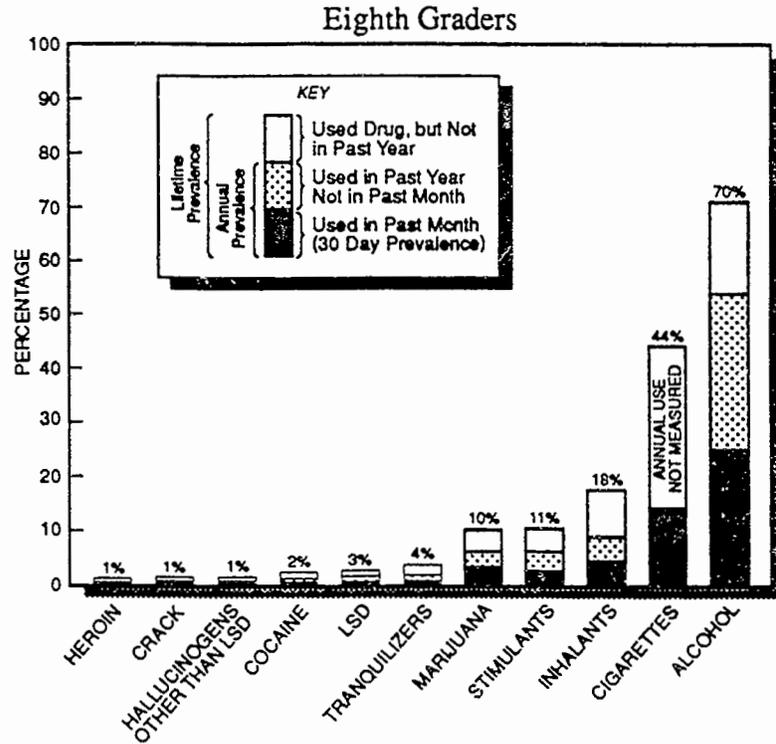
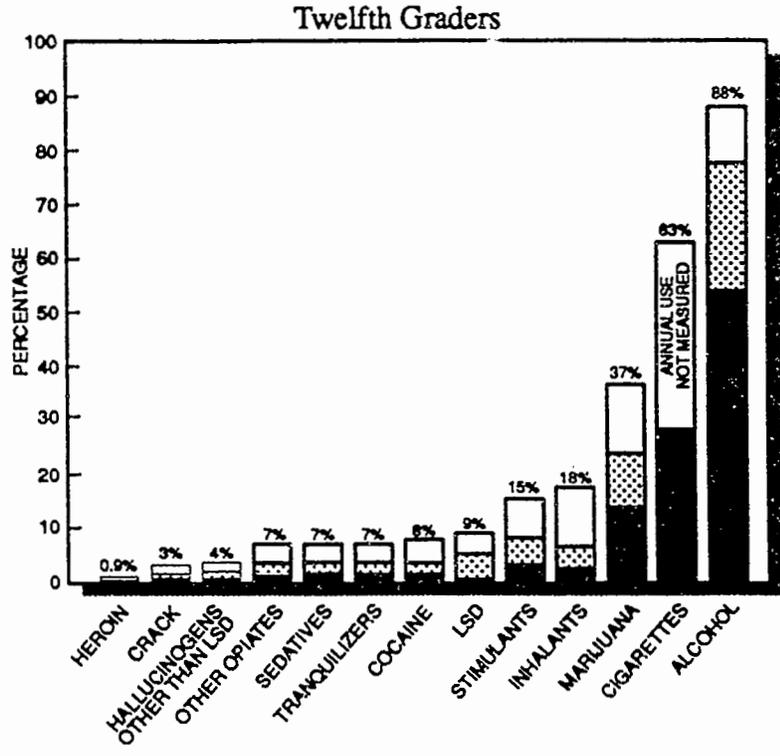


FIGURE 2 (cont.)

Prevalence and Recency of Use
Various Types of Drugs, Eighth, Tenth, and Twelfth Graders, 1991



seniors also have been adjusted upward to correct for this known underreporting. PCP use is not asked of eighth and tenth graders.¹¹

- Among seniors, lifetime prevalence for the specific hallucinogenic drug *PCP* now stands at 2.9%, substantially lower than that of the other most widely used hallucinogen, *LSD* (lifetime prevalence, 8.8%). *LSD* has been tried by 2.7% of the eighth graders and 5.6% of the tenth graders.
- *Tranquilizers* fall in the middle of the rankings, with lifetime prevalence rates of 4%, 6%, and 7% for grades 8, 10, and 12, respectively.
- *Sedatives* and *opiates other than heroin* are also in the middle; both have been used by about 7% of seniors. (Data for eighth and tenth graders are not reported, as is explained in an earlier footnote.)
- Within the general class "sedatives," the specific drug *methaqualone* is now used by considerably fewer seniors (1.3% lifetime prevalence) than the other, much broader subclass of sedatives, *barbiturates* (6.2%). Because methaqualone use has become so limited, questions about its use have not been included in the eighth and tenth grade questionnaires.
- The illicit drug classes remain in roughly the same order whether ranked by lifetime, annual, or monthly prevalence, as the data in Figure 2 illustrate. The only important change in ranking occurs for *inhalant* use among the tenth and twelfth graders compared to the eighth graders, because use of some inhalants, like glues and aerosols, tends to be discontinued at a relatively early age.
- Use of either of the two major licit drugs, alcohol and cigarettes, remains more widespread than use of any of the illicit drugs. Nearly all students (88%) have tried *alcohol* by twelfth grade; more than half of all seniors (54%) are current users, i.e., they have used it in just the past month (Table 4). Even among eighth graders some 70% say they have tried alcohol and 25% are current drinkers. However, note in Table 5 that 21% of the eighth graders have used only once or twice—perhaps having a few sips.

¹¹Because the data to adjust inhalant and hallucinogen use for seniors are available from only a single questionnaire form in a given year, the original uncorrected variables will be used in most relational analyses. We believe relational analyses will be least affected by these underestimates and that the most serious impact is on prevalence estimates, which have been adjusted appropriately. Today, the very low levels of use for nitrites and PCP—the two drugs which were used to adjust the estimates for inhalants and hallucinogens, respectively—are so low that these adjustments are hardly relevant any longer. Therefore, questions about their use have not been included in the eighth and tenth grade questionnaires.

- Nearly two-thirds (63%) of seniors report having tried **cigarettes** at some time, and nearly one-third (28%) smoked at least some in the past month. Even among eighth graders, 44% report having tried cigarettes and 14% used in the past month.
- While most of the discussion in this volume will focus on prevalence rates for different time periods (i.e., lifetime, annual, and 30-day), some readers will be interested in more detailed information about the frequency with which various drugs have been used in these same time periods. Tables 5 and 6 present such frequency-of-use information in as much detail as the original question and answer sets contain.

Daily Prevalence

- Frequent use of any of these drugs is of greatest concern from a health and safety standpoint. Tables 9 and 14 and Figure 3 show the prevalence of current daily or near-daily use of the various classes of drugs. For all drugs except cigarettes, respondents are considered daily users if they indicate that they had used the drug on twenty or more occasions in the preceding 30 days. In the case of cigarettes, respondents explicitly state the use of one or more cigarettes per day.
- The tables and figures show that, across all three grade levels, **cigarettes** are used daily by more of the respondents than any of the other drug classes: 7%, 13%, and 19% in grades 8, 10, and 12, respectively. In fact, many say they smoke half-a-pack or more per day (3%, 7%, and 11%).
- Daily use of **alcohol** is next most frequent, at all three grade levels, at 0.5%, 1.3%, and 3.6% in grades 8, 10, and 12.
- Another important fact is that **marijuana** is still used on a daily or near-daily basis by about one in every 50 seniors (2.0%), although fewer students use daily in the eighth grade (0.2%) of tenth grade (0.8%). A larger proportion (3.6%) drink alcohol daily. (See the last chapter of this volume for a discussion of levels of past daily use and cumulative daily use of marijuana.)
- Among seniors, less than 1% of the respondents report daily use of any one of the **illicit drugs other than marijuana**. Seniors report 0.2% daily use of **inhalants** and **stimulants**, followed by a number of drug classes at 0.1% or below. While very low, these figures are not inconsequential, given that 1% of the high school class of 1991 represents between 25,000 and 30,000 individuals.
- As would be expected, the daily use figures for the illicit drugs are very low in eighth and tenth grade. **Marijuana** is used daily by 0.8% of tenth graders. Otherwise, all of these numbers are at or below 0.2%.

TABLE 4
A Comparison of Drug Usage Rates
Eighth, Tenth, and Twelfth Graders, 1991

	Lifetime			Annual			30-Day			Daily		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	17500	14800	15000	17500	14800	15000	17500	14800	15000	17500	14800	15000
Marijuana/Hashish	10.2	23.4	36.7	6.2	16.5	23.9	3.2	8.7	13.8	0.2	0.8	2.0
Inhalants ^a	17.6	15.7	17.6	9.0	7.1	6.6	4.4	2.7	2.4	0.2	0.1	0.2
Inhalants, adj. ^b	—	—	18.0	—	—	6.9	—	—	2.6	—	—	0.5
Amyl/Butyl Nitrites ^c	—	—	1.6	—	—	0.9	—	—	0.4	—	—	0.2
Hallucinogens	3.2	6.1	9.6	1.9	4.0	5.8	0.8	1.6	2.2	0.1	0.0	0.1
Hallucinogens, adj. ^b	—	—	10.0	—	—	6.1	—	—	2.4	—	—	0.1
LSD	2.7	5.6	8.8	1.7	3.7	5.2	0.6	1.5	1.9	0.0	0.0	0.1
PCP ^c	—	—	2.9	—	—	1.4	—	—	0.5	—	—	0.1
Hallucinogens Other than LSD	1.4	2.2	3.7	0.7	1.3	2.0	0.3	0.4	0.7	0.0	0.0	0.0
Cocaine	2.3	4.1	7.8	1.1	2.2	3.5	0.5	0.7	1.4	0.1	0.1	0.1
"Crack"	1.3	1.7	3.1	0.7	0.9	1.5	0.3	0.3	0.7	0.0	0.0	0.1
Other Cocaine ^d	2.0	3.8	7.0	1.0	2.1	3.2	0.5	0.6	1.2	0.0	0.0	0.1
Heroin	1.2	1.2	0.9	0.7	0.5	0.4	0.3	0.2	0.2	0.0	0.0	0.0
Other Opiates ^e	—	—	6.6	—	—	3.5	—	—	1.1	—	—	0.1
Stimulants, adj. ^{e,f}	10.5	13.2	15.4	6.2	8.2	8.2	2.6	3.3	3.2	0.1	0.1	0.2
Crystal Methamphetamine ^g	—	—	3.3	—	—	1.4	—	—	0.6	—	—	0.1
Sedatives ^{c,e}	—	—	6.7	—	—	3.6	—	—	1.5	—	—	0.1
Barbiturates ^e	—	—	6.2	—	—	3.4	—	—	1.4	—	—	0.1
Methaqualone ^{c,e}	—	—	1.3	—	—	0.5	—	—	0.2	—	—	0.0
Tranquilizers ^e	3.8	5.8	7.2	1.8	3.2	3.6	0.8	1.2	1.4	0.0	0.0	0.1
Alcohol												
Any use	70.1	83.8	88.0	54.0	72.3	77.7	25.1	42.8	54.0	0.5	1.3	3.6
5+ drinks in last 2 weeks	—	—	—	—	—	—	—	—	—	12.9	22.9	29.8
Cigarettes												
Any use	44.0	55.1	63.1	—	—	—	14.3	20.8	28.3	7.2	12.6	18.5
1/2pack +/day	—	—	—	—	—	—	—	—	—	3.1	6.5	10.7
Steroids ^c	1.9	1.8	2.1	1.0	1.1	1.4	0.4	0.6	0.8	0.0	0.1	0.1
Smokeless Tobacco ^h	22.2	28.2	—	—	—	—	6.9	10.0	—	—	—	—
Been Drunk ^g	26.7	50.0	65.4	17.5	40.1	52.7	7.6	20.5	31.6	0.2	0.2	0.9

^a12th grade only: Data based on five questionnaire forms; N is five-sixths of N indicated.

^b12th grade only: Adjusted for underreporting of certain drugs. See text for details.

^c12th grade only: Data based on one questionnaire form. N is one-sixth of N indicated.

^d12th grade only: Data based on four questionnaire forms. N is four-sixths of N indicated.

^e12th grade only: Only drug use which was not under a doctor's orders is included here.

^f12th grade only: Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

^g12th grade only: Data based on two questionnaire forms. N is two-sixths of N indicated.

^h8th and 10th grade: Data based on one questionnaire form. N is one-half of N indicated.

TABLE 5

Lifetime, Annual and Thirty-Day Frequency of Use of Various Types of Drugs Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Marijuana			Inhalants ^a			Amyl/Butyl Nitrites			Hallucinogens ^a			LSD			PCP		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N=	17500	14800	15000	17500	14800	12500	NA	NA	2609	17500	14800	15000	17500	14800	15000	NA	NA	2600
Lifetime Frequency																		
No occasions	89.8	76.6	63.3	82.4	84.3	82.4	NA	NA	98.4	96.8	93.9	90.4	97.3	94.4	91.2	NA	NA	97.1
1-2 occasions	5.0	8.7	10.8	10.3	9.0	9.3	NA	NA	0.6	1.6	2.8	3.9	1.6	3.0	4.0	NA	NA	1.6
3-5 occasions	1.5	4.0	6.1	3.2	3.0	3.4	NA	NA	0.1	0.8	1.4	2.1	0.4	1.0	1.5	NA	NA	0.6
6-9 occasions	1.0	2.5	3.7	1.5	1.5	1.7	NA	NA	0.3	0.3	0.6	0.9	0.3	0.6	0.9	NA	NA	0.2
10-19 occasions	0.9	2.5	4.4	1.1	1.1	1.3	NA	NA	0.1	0.2	0.6	1.4	0.1	0.5	1.1	NA	NA	0.2
20-39 occasions	0.7	2.0	3.4	0.5	0.5	0.8	NA	NA	0.1	0.1	0.3	0.5	0.1	0.2	0.5	NA	NA	*
40 or more	1.1	3.7	8.3	1.1	0.6	1.1	NA	NA	0.4	0.2	0.4	0.8	0.2	0.4	0.7	NA	NA	0.3
Annual Frequency																		
No occasions	93.8	83.5	76.1	91.0	92.9	93.4	NA	NA	99.1	98.1	96.0	94.2	98.3	96.3	94.8	NA	NA	98.6
1-2 occasions	3.1	6.9	8.0	5.3	4.2	3.5	NA	NA	0.5	1.0	1.9	2.7	1.0	2.0	2.7	NA	NA	0.7
3-5 occasions	0.9	3.1	4.3	1.6	1.5	1.4	NA	NA	0.1	0.4	1.1	1.7	0.2	0.8	1.3	NA	NA	0.3
6-9 occasions	0.7	1.8	2.9	0.8	0.6	0.7	NA	NA	*	0.2	0.3	0.6	0.2	0.3	0.5	NA	NA	*
10-19 occasions	0.7	1.8	2.9	0.6	0.4	0.5	NA	NA	0.1	0.1	0.4	0.5	0.1	0.3	0.3	NA	NA	*
20-39 occasions	0.3	1.3	2.1	0.4	0.1	0.3	NA	NA	0.1	0.1	0.1	0.2	0.1	0.1	0.2	NA	NA	*
40 or more	0.5	1.5	3.7	0.3	0.2	0.3	NA	NA	0.1	0.1	0.1	0.2	0.1	0.1	0.2	NA	NA	0.3
30-Day Frequency																		
No occasions	96.8	91.3	86.2	95.6	97.3	97.6	NA	NA	99.6	99.2	98.4	97.8	99.4	98.5	98.1	NA	NA	99.5
1-2 occasions	1.6	4.3	5.8	2.6	1.9	1.4	NA	NA	0.2	0.4	1.1	1.3	0.4	1.1	1.3	NA	NA	0.2
3-5 occasions	0.7	1.7	2.7	0.9	0.5	0.6	NA	NA	—	0.2	0.4	0.6	0.1	0.3	0.4	NA	NA	0.2
6-9 occasions	0.4	1.1	1.4	0.3	0.2	0.2	NA	NA	—	*	0.1	0.1	0.1	0.1	0.1	NA	NA	*
10-19 occasions	0.3	0.8	1.7	0.4	0.1	0.1	NA	NA	—	0.1	0.1	0.1	*	*	0.1	NA	NA	*
20-39 occasions	0.1	0.5	1.1	0.1	0.1	0.1	NA	NA	*	*	*	—	—	*	—	NA	NA	*
40 or more	0.1	0.3	0.9	0.1	0.1	0.1	NA	NA	0.2	*	*	0.1	*	*	0.1	NA	NA	0.1

NOTE: * indicates less than .05 percent. — indicates no cases in category.
 b Unadjusted for known underreporting of certain drugs. See text for details.
 Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 5 (cont.)

Lifetime, Annual and Thirty-Day Frequency of Use of Various Types of Drugs
Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Cocaine			"Crack"			Other Cocaine			Heroin			Stimulants ^b		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N=	17500	14800	15000	17500	14800	15000	17500	14800	10000	17500	14800	15000	17500	14800	15000
Lifetime Frequency															
No occasions	97.7	95.9	92.2	98.7	98.3	96.9	98.0	96.2	93.0	98.8	98.8	99.1	89.5	86.8	84.6
1-2 occasions	1.1	2.1	3.4	0.8	1.0	1.5	1.4	2.3	3.4	0.8	0.6	0.5	6.0	6.4	6.9
3-5 occasions	0.7	0.9	1.7	0.2	0.2	0.6	0.2	0.6	1.3	0.2	0.2	0.1	1.9	2.6	2.7
6-9 occasions	0.1	0.2	0.6	0.1	0.1	0.2	0.1	0.2	0.6	0.1	0.1	*	1.0	1.6	1.6
10-19 occasions	0.2	0.2	0.7	0.1	0.1	0.3	0.1	0.2	0.6	0.1	0.1	0.1	0.8	1.1	1.6
20-39 occasions	0.1	0.2	0.5	*	0.1	0.2	0.1	0.2	0.6	*	*	0.1	0.3	0.7	0.9
40 or more	0.2	0.4	0.8	0.1	0.2	0.4	0.1	0.3	0.5	0.1	0.1	0.1	0.5	0.8	1.7
Annual Frequency															
No occasions	98.9	97.8	96.5	99.3	99.1	98.5	99.0	97.9	96.8	99.3	99.5	99.6	93.8	91.8	91.8
1-2 occasions	0.5	1.2	1.5	0.4	0.6	0.7	0.6	1.4	1.5	0.4	0.3	0.2	3.9	4.5	3.9
3-5 occasions	0.3	0.5	0.8	0.1	0.1	0.3	0.1	0.2	0.7	0.1	0.1	*	1.1	1.6	1.5
6-9 occasions	0.1	0.2	0.3	*	0.1	0.1	0.1	0.2	0.3	0.1	*	0.1	0.6	0.8	1.1
10-19 occasions	0.1	0.2	0.4	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	*	0.3	0.7	0.9
20-39 occasions	*	0.1	0.2	*	*	0.1	0.1	*	0.2	*	*	*	0.1	0.3	0.5
40 or more	0.1	0.1	0.2	*	*	0.1	*	0.1	0.2	*	*	*	0.2	0.2	0.3
30-Day Frequency															
No occasions	99.5	99.3	98.6	99.7	99.7	99.3	99.5	99.4	98.8	99.7	99.8	99.8	97.4	96.7	96.8
1-2 occasions	0.2	0.3	0.7	0.2	0.2	0.4	0.3	0.3	0.7	0.2	0.1	0.1	1.6	2.0	1.9
3-5 occasions	0.2	0.1	0.3	*	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.6	0.7	0.6
6-9 occasions	0.1	0.1	0.1	0.1	*	0.1	*	0.1	0.1	*	*	*	0.3	0.4	0.3
10-19 occasions	*	*	0.1	*	0.1	*	*	0.1	0.1	*	*	*	0.1	0.2	0.2
20-39 occasions	*	0.1	*	*	*	*	*	*	*	*	*	*	*	0.1	0.1
40 or more	*	*	0.1	*	*	0.1	*	*	*	*	*	*	*	*	0.1

NOTE: * indicates less than .05 percent. — indicates no cases in category.

^a Unadjusted for known underreporting of certain drugs. See text for details.

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

C.

TABLE 5 (cont.)

Lifetime, Annual and Thirty-Day Frequency of Use of Various Types of Drugs
Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Barbiturates			Methaqualone			Tranquilizers			Alcohol			Ice			Steroids		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N=	NA	NA	15000	NA	NA	2600	17500	14800	15000	17500	14800	15000	NA	NA	5000	17500	14800	5000
Lifetime Frequency																		
No occasions	NA	NA	93.8	NA	NA	98.7	96.2	94.2	92.8	29.9	16.2	12.0	NA	NA	96.7	98.1	98.2	97.9
1-2 occasions	NA	NA	2.9	NA	NA	0.7	2.5	3.5	4.0	21.3	15.0	9.4	NA	NA	2.1	1.2	0.9	0.8
3-5 occasions	NA	NA	1.1	NA	NA	0.3	0.6	0.9	1.3	16.2	14.7	11.0	NA	NA	0.5	0.3	0.3	0.4
6-9 occasions	NA	NA	0.8	NA	NA	*	0.3	0.6	0.6	10.3	12.3	9.8	NA	NA	0.2	0.1	0.2	0.4
10-19 occasions	NA	NA	0.6	NA	NA	0.1	0.2	0.4	0.6	10.4	15.2	13.9	NA	NA	0.1	0.1	0.1	0.1
20-39 occasions	NA	NA	0.3	NA	NA	*	0.1	0.1	0.2	5.4	11.1	12.5	NA	NA	0.2	*	0.1	0.1
40 or more	NA	NA	0.5	NA	NA	0.1	0.1	0.2	0.4	6.6	15.5	31.5	NA	NA	0.2	0.1	0.1	0.2
Annual Frequency																		
No occasions	NA	NA	96.6	NA	NA	99.5	98.2	96.8	96.4	46.0	27.7	22.3	NA	NA	98.6	99.0	98.9	98.6
1-2 occasions	NA	NA	1.8	NA	NA	0.2	1.2	2.0	2.2	27.1	23.2	17.5	NA	NA	1.0	0.6	0.5	0.6
3-5 occasions	NA	NA	0.5	NA	NA	0.1	0.3	0.6	0.6	12.4	16.4	13.7	NA	NA	0.1	0.1	0.2	0.2
6-9 occasions	NA	NA	0.4	NA	NA	—	0.1	0.3	0.3	6.6	11.8	11.1	NA	NA	0.1	0.1	0.1	0.2
10-19 occasions	NA	NA	0.3	NA	NA	0.1	0.1	0.2	0.2	4.6	10.9	13.4	NA	NA	0.1	*	0.1	*
20-39 occasions	NA	NA	0.1	NA	NA	—	*	0.1	0.1	2.1	5.6	9.6	NA	NA	*	*	0.1	0.2
40 or more	NA	NA	0.2	NA	NA	*	*	0.1	0.2	1.2	4.3	12.5	NA	NA	0.1	0.1	0.1	0.1
30-Day Frequency																		
No occasions	NA	NA	98.6	NA	NA	99.8	99.2	98.8	98.6	74.9	57.2	46.0	NA	NA	99.4	99.6	99.4	99.2
1-2 occasions	NA	NA	0.9	NA	NA	0.1	0.5	0.8	0.9	16.1	22.5	21.9	NA	NA	0.4	0.2	0.3	0.5
3-5 occasions	NA	NA	0.3	NA	NA	*	0.2	0.3	0.2	5.1	10.7	14.3	NA	NA	0.1	0.1	0.1	0.1
6-9 occasions	NA	NA	0.1	NA	NA	0.1	0.1	0.1	0.1	2.1	5.4	8.2	NA	NA	*	*	0.1	0.1
10-19 occasions	NA	NA	0.1	NA	NA	—	*	0.1	0.1	1.3	2.8	6.0	NA	NA	0.1	0.1	0.1	*
20-39 occasions	NA	NA	*	NA	NA	—	*	*	*	0.4	0.8	2.0	NA	NA	—	*	0.1	—
40 or more	NA	NA	*	NA	NA	*	*	*	0.1	0.2	0.6	1.6	NA	NA	0.1	*	*	0.1

NOTE: * indicates less than .05 percent. — indicates no cases in category.
 a Unadjusted for known underreporting of certain drugs. See text for details.
 b Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

FIGURE 3

**Thirty-Day Prevalence of Daily Use
Various Types of Drugs, Eighth, Tenth, and Twelfth Graders, 1991**

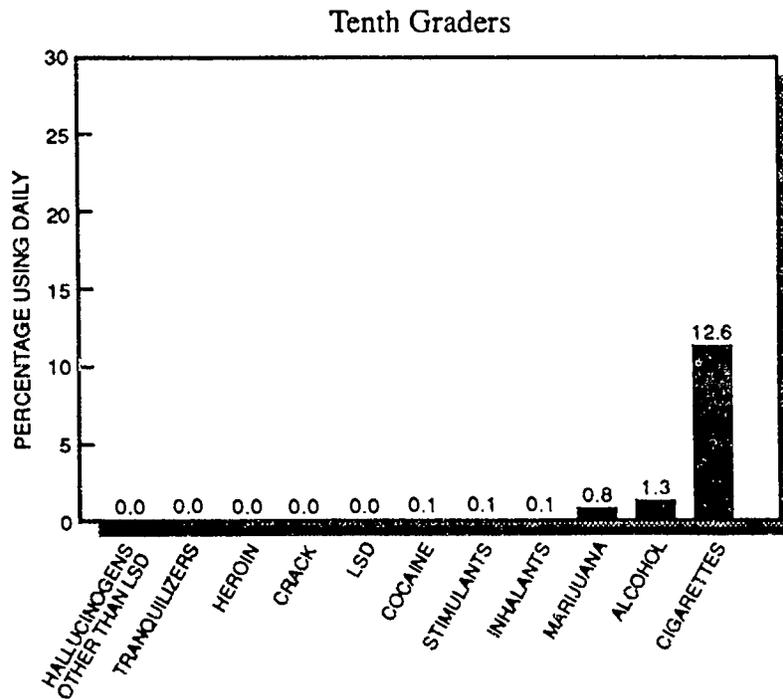
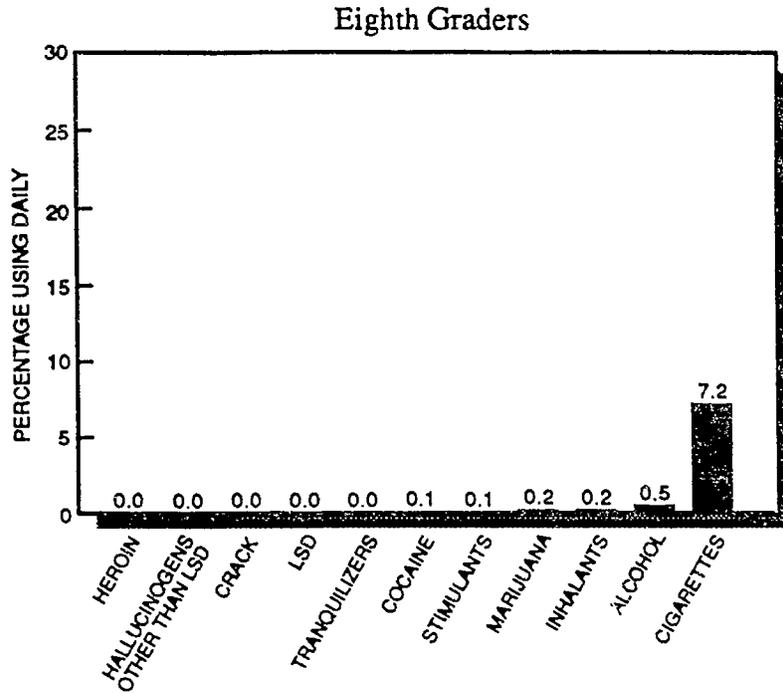


FIGURE 3 (cont.)

Thirty-Day Prevalence of Daily Use
Various Types of Drugs, Eighth, Tenth, and Twelfth Graders, 1991

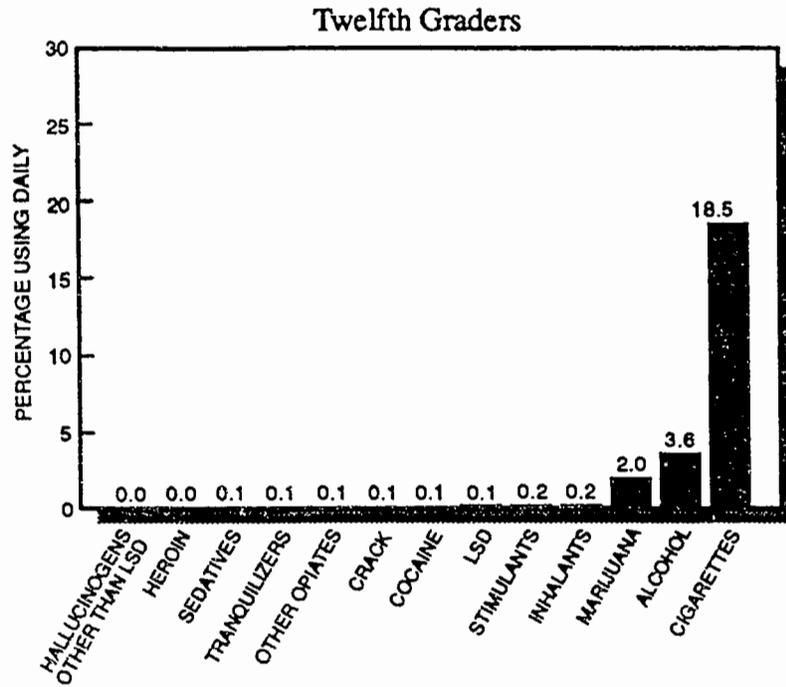


TABLE 6

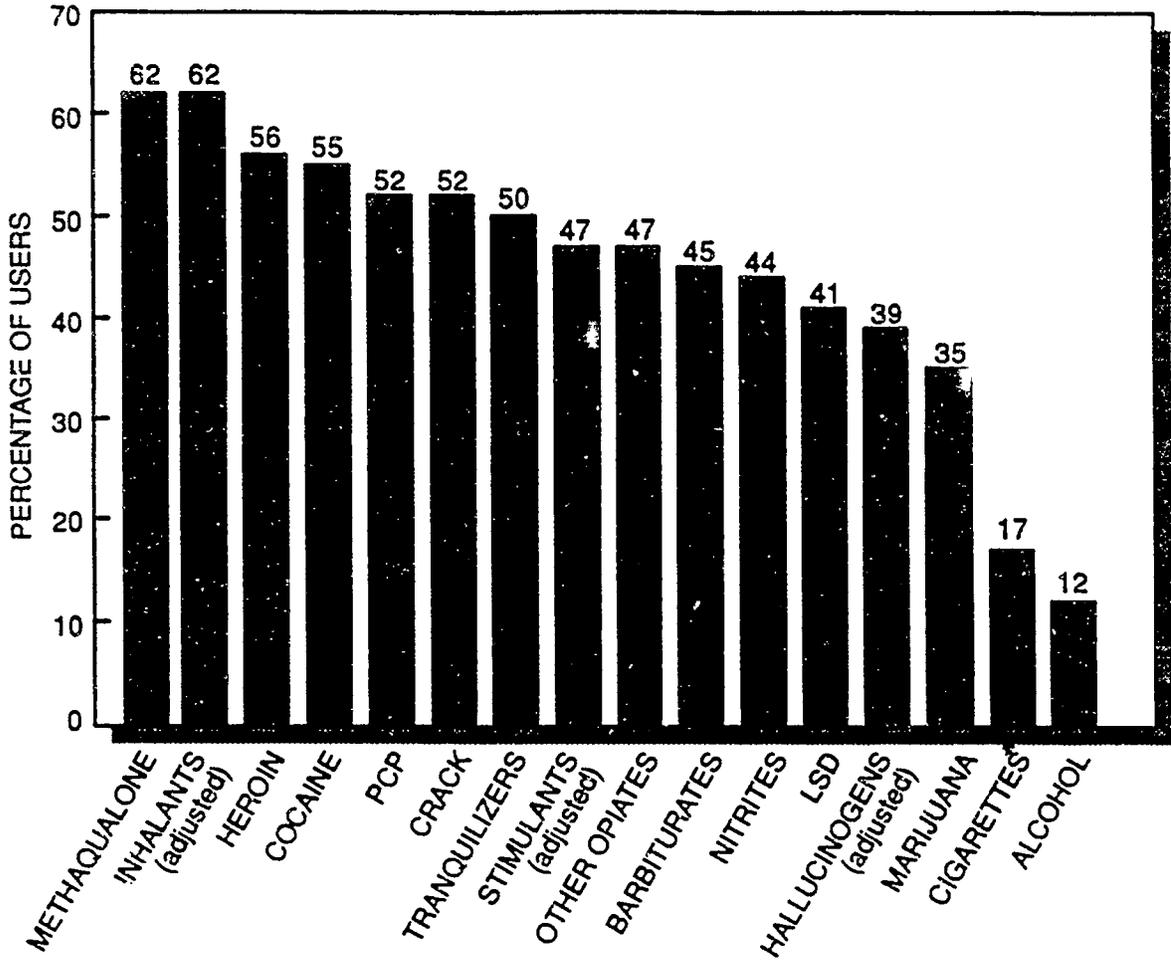
**Frequency of Cigarette Use and Occasions of Heavy Drinking
Eighth, Tenth and Twelfth Graders, 1991**

(Entries are percentages)

	Percent who used		
	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
<i>Q. Have you ever smoked cigarettes?</i>			
Never	56.0	44.9	36.9
Once or twice	24.4	26.9	27.3
Occasionally but not regularly	9.2	11.9	14.2
Regularly in the past	5.4	6.6	7.1
Regularly now	4.9	9.8	14.6
Approx. N =	(17500)	(14800)	(15000)
 <i>Q. How frequently have you smoked cigarettes during the past 30 days?</i>			
Not at all (includes "never" category from question above)	85.7	79.2	71.7
Less than one cigarette per day	7.1	8.2	9.9
One to five cigarettes per day	4.1	6.0	7.8
About one-half pack per day	1.7	3.7	5.3
About one pack per day	0.8	2.1	4.0
About one and one-half packs per day	0.4	0.5	1.0
Two packs or more per day	0.2	0.2	0.3
Approx. N =	(17500)	(14800)	(15000)
 <i>Q. Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?</i>			
None	87.1	77.1	70.2
Once	5.9	9.6	9.8
Twice	3.3	5.8	7.7
3 to 5 times	2.4	4.7	8.3
6 to 9 times	0.7	1.5	2.4
10 or more times	0.7	1.4	1.8
Approx. N =	(17500)	(14800)	(15000)

FIGURE 4

**Noncontinuation Rates: Percent of Seniors Who Used Drug
Once or More in Lifetime but Did Not Use in Past Year**



*Percent of regular smokers (ever) who did not smoke at all in the last thirty days.

- While *daily alcohol use* stands at relatively low levels for these age groups, a substantially greater proportions report *occasional heavy drinking*. Almost a third of all seniors (30%) state that on at least one occasion during the prior two-week interval they had five or more drinks in a row. For tenth graders, the proportion is nearly one in four (23%) and for eighth graders, one in eight (12.9%).

NONCONTINUATION RATES

An indication of the extent to which people who try a drug do not continue to use it can be derived from calculating the percentage, based on those who ever used a drug (once or more), who did not use it the 12 months preceding the survey.¹² These “noncontinuation rates” are provided for all drug classes in Figure 4 for the senior class of 1991. (Only data for seniors are presented here.) We use the word “noncontinuation” rather than “discontinuation,” since the latter might imply discontinuing an established pattern of use, whereas our current operational definition includes experimental users as well as established users.

- It may be seen in Figure 4 that noncontinuation rates vary widely among the different drugs.
- The highest noncontinuation rates observed are for *methaqualone* and *inhalants*, both at (62%). Inhalants are used primarily at a younger age. The use of *methaqualone* has declined perhaps, in part, because they are no longer readily available.
- By senior year, a high noncontinuation rate is found for *heroin* (56%), *cocaine* (55%), *PCP* (52%), and *crack* (52%).
- *Marijuana* has consistently had one of the lowest noncontinuation rates (35%) in senior year of any of the illicit drugs; this occurs because a relatively high proportion of users continue to use at some level over an extended period. (See the chapter on Other Findings for more information on extended use.)
- Contrary to the widespread belief that *crack* is almost instantly addicting, it is noteworthy that, of the seniors who have ever used crack (3.1%), only about one-fourth (0.7%) are current users and only 0.1% of the total sample are daily users. While there is no question that crack is highly addictive, this evidence suggests that it is not usually addictive on the first use.
- The remaining *illicit drugs* have noncontinuation rates ranging from 39% to 52%.

¹²This operationalization of noncontinuation has an inherent problem in that users of a given drug who initiate use in senior year by definition cannot be noncontinuers. Thus, the definition tends to understate the noncontinuation rate, particularly for drugs that tend to be initiated late in high school rather than in earlier years.

- By way of contrast with the illicit drugs, noncontinuation rates for the two licit drugs are extremely low. *Alcohol*, which has been tried by nearly all seniors (88%), is used in senior year by nearly all of those who have ever tried it (78% of all seniors). Thus, the non-continuation rate for alcohol is only 12%.
- For *cigarettes*, noncontinuation is defined somewhat differently; it is the percentage of those who say they ever smoked "regularly" who also reported not smoking at all during the past month. Hardly any of these regular smokers (only 17%) have ceased active use. (A comparable definition of noncontinuation to that used for other drugs is not possible, since cigarette use in the past year is not asked of respondents.)

PREVALENCE COMPARISONS FOR IMPORTANT SUBGROUPS

Sex Differences

- In general, higher proportions of males than females are involved in illicit drug use, especially heavy drug use: however, this picture is a somewhat complicated one (see Tables 7 through 9).
- Overall the proportion ever using *marijuana* is somewhat higher among males, but daily use of marijuana is three times as frequent among males in senior year (3.0% vs. 0.9% for females). This is true for eighth and tenth grade students, as well.
- Males also have considerably higher prevalence rates on most other illicit drugs. The annual prevalence rates in senior year (Table 8) tend to be at least one and one-half to two and one-half times as high among males as among females for *nitrites*, *hallucinogens* (unadjusted), the specific drugs *LSD*, *PCP*, *heroin*, *cocaine*, *crack cocaine*, *inhalants*, and *ice*. Compared to females, males report somewhat higher annual rates of use for *opiates other than heroin* and *marijuana*. Further, males account for an even greater share of the frequent or heavy users of these various classes of drugs.

It is interesting to note, however, that for many of these drugs there is little or no sex difference among tenth graders. This may reflect the impact of tenth grade girls dating more than eighth grade girls, and tending to do so with older boys.

- Females match or exceed the annual prevalence rates for males in the case of *tranquilizers*, *barbiturates*, and *stimulants*.
- Despite the fact that nearly all illicit drugs are used more by males than by females, the proportions of both sexes who report using *some illicit drug other than marijuana* during the last year are not substantially different (17% for males vs. 15% for females; see

TABLE 7

Lifetime Prevalence of Use of Various Types of Drugs by Subgroups, Twelfth Graders, 1991

(Entries are percentages)

	Marijuana	Inhalants ^a	Amphetamine/Nitrites	Hallucinogens ^a	LSD	PCP	Cocaine	*Crack	Other Cocaine	Heroin	Other Opiates	Stimulants ^b (adjusted)	Sedatives	Barbiturates	Methqualone	Tranquilizers	Alcohol	Cigarettes	Ice	Steroids	
All Seniors	36.7	17.6	1.6	9.6	8.8	2.9	7.8	3.1	7.0	0.9	6.6	15.4	6.7	6.2	1.3	7.2	88.0	63.1	3.3	2.1	
Sex:																					
Male	40.3	20.8	2.3	11.6	10.6	3.6	8.8	3.7	7.8	1.2	7.0	14.9	7.0	6.5	1.4	6.7	88.2	63.5	3.8	3.6	
Female	32.8	14.3	1.0	7.5	6.8	2.3	6.6	2.4	5.8	0.6	6.2	15.9	6.1	5.7	0.8	7.5	87.9	62.5	2.8	0.4	
College Plans:																					
None or under 4 yrs	43.6	20.7	2.4	12.1	11.2	3.8	10.7	5.1	9.0	1.2	7.9	20.5	8.6	8.3	1.1	8.4	89.5	70.5	4.1	2.8	
Complete 4 yrs	33.8	16.5	1.3	8.5	7.7	2.7	6.4	2.3	5.8	0.9	6.1	13.4	5.7	5.2	1.3	6.8	87.6	59.8	3.0	1.7	
Region:																					
Northeast	40.4	18.1	1.3	10.8	9.4	3.3	7.8	2.8	6.7	0.7	6.6	13.7	5.3	5.1	1.3	6.0	91.9	64.8	2.4	1.4	
North Central	39.3	19.7	1.5	10.1	9.2	2.8	6.7	2.7	5.6	1.3	7.1	18.5	5.5	6.0	1.7	6.0	91.3	67.7	2.9	2.3	
South	31.2	15.1	2.0	6.7	6.3	2.9	6.5	2.7	5.9	0.7	5.4	13.9	7.3	6.7	1.3	8.2	85.5	61.1	2.2	2.2	
West	39.3	18.7	1.5	12.7	11.7	2.8	11.5	4.8	10.8	0.9	8.0	15.6	6.8	6.5	0.7	8.0	84.5	59.2	6.5	2.1	
Population Density:																					
Large SMSA	36.1	15.2	1.6	8.5	7.2	3.6	8.0	2.6	7.3	0.8	6.4	11.8	5.2	4.7	1.4	5.5	88.2	61.5	3.1	1.8	
Other SMSA	41.4	19.4	1.6	12.3	11.6	2.6	8.9	3.8	8.0	1.0	7.2	16.5	7.7	7.0	1.3	8.4	89.8	64.1	3.9	2.1	
Non-SMSA	29.4	16.7	1.7	5.9	5.4	2.8	5.8	2.5	5.0	0.9	5.8	16.8	5.4	6.0	1.2	6.6	84.9	62.9	2.5	2.2	
Parental Education: ^c																					
1.0-2.0 (Low)	38.0	18.7	2.0	8.8	8.0	2.8	9.5	5.0	8.5	1.1	6.0	17.3	7.9	7.8	0.6	8.4	86.2	65.0	3.8	2.8	
2.5-3.0	36.8	17.9	1.1	9.0	8.1	2.7	8.2	3.1	7.1	0.8	6.8	16.7	6.4	6.3	0.7	7.6	89.6	63.6	3.1	1.1	
3.5-4.0	36.3	17.3	1.9	9.6	8.8	2.7	7.8	3.3	7.1	0.8	6.6	16.1	6.5	5.9	1.5	6.3	88.9	63.8	3.1	2.2	
4.5-5.0	35.5	17.6	1.1	9.5	8.6	2.2	6.8	2.4	5.8	0.9	6.7	14.0	5.8	5.5	1.2	7.1	87.6	60.9	3.8	2.6	
5.5-6.0 (High)	38.0	18.1	2.3	11.6	11.1	4.5	6.9	2.2	6.5	0.9	7.2	11.4	7.2	5.9	1.5	7.0	89.3	63.2	2.2	1.0	

NOTE: Prevalence of use of each drug was included in all six questionnaire forms with the following exceptions: Inhalants was in five forms; Other Cocaine was in four forms; Crystal Methamphetamine ("Ice") and Steroids were in two forms; and Nitrites, PCP, Sedatives, and Methqualone were in one form.

^a Unadjusted for known underreporting of certain drugs. See text for details.

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

^c Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

Figure 12). Even if amphetamine use is excluded from the comparisons altogether, the proportions of both sexes (13% for males vs. 11% for females) who report using some illicit drug other than marijuana during the year are not greatly different. If one thinks of going beyond marijuana as an important threshold point in the sequence of illicit drug use, then fairly similar proportions of both sexes were willing to cross that threshold at least once during the year. However, on the average, the female "users" take fewer types of drugs and tend to use them with less frequency than their male counterparts.

- The use of anabolic *steroids* tends to be particularly concentrated in the male population, with use among senior males (2.4% in the past year) twelve times as high as among senior females (0.2%).
- Frequent use of *alcohol* tends to be disproportionately concentrated among males. Daily use, for example, is reported by 5.3% of the senior males vs. only 1.6% of the senior females. Also, males are more likely than females to drink large quantities of alcohol in a single sitting; 38% of senior males report taking five or more drinks in a row in the prior two weeks vs. 21% of senior females. These sex differences are observable at all three grade levels.
- In recent years, there were modest sex differences in *smoking* rates, with more females smoking in senior year. Although equivalent proportions of both sexes report daily smoking in the past month, more males report smoking at the rate of half-pack or more per day (11.6% vs. 9.5% for females) in twelfth grade. Males are more likely to be heavy smokers in the lower grades, as well.

Differences Related to College Plans

- Overall, students who say they probably or definitely will complete four years of college (referred to here as the "college-bound") have lower rates of illicit drug use than those who say they probably or definitely will not. (See Tables 7 through 9 and Figure 13). It is interesting to note that the proportion of students expecting to complete college decreases with grade level, even though the lower grades still contain 15%–20% who will eventually drop out of high school.
- For any given drug, the differences between these two self-identified groups of students tend to be greatest in the eighth grade. This could reflect an earlier age of onset for the noncollege-bound, and/or the fact that they are a more select subgroup in the earlier grades.
- Annual *marijuana* use is reported by 22% of the college-bound seniors vs. 28% of the noncollege-bound; but it is reported by only 5% of the college-bound vs. 16% of the noncollege-bound eighth graders.

- There is also a difference in the proportion of these two groups using **any illicit drug other than marijuana** (adjusted). In 1991, 14% of the college-bound seniors reported any such behavior in the prior year vs. 20% of the noncollege-bound seniors.
- Frequent use of many of these illicit drugs shows even larger contrasts related to college plans (see Table 9). **Daily marijuana** use, for example, is more than twice as high among those seniors not planning four years of college (3.3%) as among the college-bound seniors (1.4%).
- Frequent alcohol use is also more prevalent among the noncollege-bound. For example, **daily drinking** is reported by 5.4% of the noncollege-bound seniors vs. 2.9% of the college-bound seniors. **Binge drinking** (having five or more drinks in a row at least once during the preceding two weeks) is reported by 28% of the college-bound seniors vs. 34% of the noncollege-bound seniors. Drinking that heavily on six or more occasions in the last two weeks is reported by 3.3% of the college-bound vs. 5.9% of the noncollege-bound seniors. On the other hand, there are practically no differences between the college-bound and noncollege-bound seniors in lifetime, annual, or monthly prevalence of alcohol use. It is not so much drinking, but rather frequent and heavy drinking, which tends to differentiate these two groups.
- For annual **steroid** use, there is an appreciable difference between the noncollege-bound seniors (2.1% annual prevalence) and the college-bound seniors (1.2%). This is true at all three grade levels.
- By far, the largest difference in substance use between the college- and noncollege-bound involves **cigarette** smoking. There is a dramatic difference here, with 7% of the college-bound seniors smoking half-a-pack or more daily as compared with 19% of the noncollege-bound seniors. The proportional differences are even larger in the lower grades.

Regional Differences

- It may be observed in Tables 8 and 9 that there are some fair-sized regional differences in rates of **illicit drug use** among high school seniors. (See Figure 5 for a **regional division** map of the states included in the four regions of the country as defined by the Census Bureau.) The highest rate (adjusted) is in the West, where 33% of seniors say they have used an illicit drug in the past year, closely followed by the Northeast (32%) and the North Central (31%). The South is the lowest, with 25% having used any illicit drug during the year (see Figure 14).

TABLE 8

Annual Prevalence of Use of Various Types of Drugs by Subgroups
Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Approx. N			Marijuana			Inhalants ^{b,c}			Hallucinogens ^c			LSD			
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	
Total	17500	14800	15000	6.2	16.5	23.9	9.0	7.1	6.6	1.9	4.0	5.8	1.7	3.7	5.2	
Sex:																
Male	8600	7200	7400	7.3	17.7	27.2	9.0	7.4	8.2	2.2	4.4	7.5	2.0	3.9	6.8	
Female	8600	7400	7200	5.1	15.1	20.1	9.0	6.6	5.0	1.6	3.6	3.9	1.3	3.4	3.4	
College Plans:																
None or under 4 yrs	2300	2600	4000	15.8	26.9	27.6	15.0	12.0	7.7	5.1	7.5	7.0	4.5	6.8	6.4	
Complete 4 yrs	14600	11900	10300	4.6	14.2	22.0	8.1	5.3	6.3	1.4	3.3	5.3	1.2	3.0	4.7	
Region:																
Northeast	3000	2700	2800	5.0	17.1	28.2	8.0	7.2	6.7	1.5	4.0	7.0	1.3	3.6	6.1	
North Central	5300	3700	4000	5.9	16.8	26.1	9.8	7.5	8.6	1.6	3.4	6.5	1.4	3.2	5.9	
South	6300	4900	5100	6.1	14.5	18.1	8.9	7.2	5.0	1.9	3.6	3.7	1.8	3.3	3.4	
West	2900	3500	3100	7.8	19.4	26.8	8.8	6.2	6.8	2.8	5.2	7.3	2.2	4.8	6.5	
Population Density:																
Large SMSA	4500	3400	3600	5.2	16.5	24.3	9.9	7.7	5.2	2.1	4.1	5.1	1.9	3.8	4.3	
Other SMSA	8400	7400	7200	7.2	17.3	27.5	8.5	7.1	7.8	2.0	4.8	7.7	1.7	4.4	7.0	
Non-SMSA	4600	4000	4200	5.3	14.9	17.5	9.1	6.5	5.8	1.5	2.5	3.3	1.3	2.3	3.0	
Parental Education: ^a																
1.0-2.0 (Low)	1400	1300	1500	13.2	20.3	22.4	12.0	7.0	6.1	3.9	3.7	4.9	3.5	3.1	4.3	
2.5-3.0	4400	3900	4100	7.0	17.8	22.5	9.5	8.0	6.6	2.2	4.3	4.9	1.8	4.0	4.4	
3.5-4.0	4100	3900	4200	6.2	16.2	24.0	8.9	7.5	6.1	1.6	3.7	6.2	1.4	3.4	5.5	
4.5-5.0	4100	3500	3100	3.7	14.9	23.8	8.0	6.4	7.4	1.6	4.1	6.1	1.4	3.8	5.3	
5.5-6.0 (High)	2200	1800	1500	4.6	15.9	28.2	8.4	6.6	7.1	1.4	4.6	7.3	1.3	4.2	7.1	

^a Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

^b 12th grade only: Data based on five questionnaire forms. N is five-sixths of N indicated.

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

TABLE 8 (cont.)

Annual Prevalence of Use of Various Types of Drugs by Subgroups
Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Cocaine			"Crack"			Other Cocaine ^b			Heroin			Other Opiates ^c			Stimulants ^{c,d}		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.1	2.2	3.5	0.7	0.9	1.5	1.0	2.1	3.2	0.7	0.5	0.4	NA	NA	3.5	6.2	8.2	8.2
Sex:																		
Male	1.4	2.2	4.1	0.8	0.9	1.8	1.1	2.0	3.7	0.9	0.7	0.6	NA	NA	3.9	6.5	7.0	8.3
Female	0.9	2.2	2.6	0.5	0.8	1.0	0.8	2.1	2.4	0.5	0.4	0.3	NA	NA	3.1	6.9	9.3	7.9
College Plans:																		
None or under 4 yrs	3.2	4.7	4.9	2.0	2.4	2.3	2.7	4.4	4.0	2.1	1.4	0.6	NA	NA	3.8	11.6	13.4	11.0
Complete 4 yrs	0.8	1.7	2.8	0.4	0.6	1.1	0.6	1.6	2.8	0.4	0.3	0.4	NA	NA	3.5	5.4	7.1	7.0
Region:																		
Northeast	1.3	1.5	3.8	0.5	0.5	1.3	1.2	1.3	3.4	0.5	0.4	0.2	NA	NA	3.2	5.1	6.1	6.5
North Central	0.9	1.7	3.2	0.6	0.9	1.5	0.6	1.6	2.9	0.4	0.6	0.8	NA	NA	4.2	7.1	10.3	10.1
South	1.1	2.0	3.0	0.7	1.0	1.2	1.0	1.9	2.8	0.8	0.6	0.4	NA	NA	2.7	6.1	8.1	7.9
West	1.5	3.6	4.4	0.8	1.1	1.8	1.3	3.4	3.9	1.0	0.4	0.3	NA	NA	4.4	6.0	7.7	7.8
Population Density:																		
Large SMSA	1.1	1.9	4.1	0.5	0.9	1.2	0.9	1.6	3.7	0.5	0.6	0.4	NA	NA	3.3	5.8	7.5	6.2
Other SMSA	1.1	2.7	3.7	0.7	0.9	1.7	0.9	2.6	3.3	0.7	0.5	0.4	NA	NA	3.9	6.2	7.9	8.4
Non-SMSA	1.2	1.6	2.5	0.8	0.9	1.2	1.1	1.4	2.5	0.8	0.4	0.6	NA	NA	3.1	6.7	9.3	9.5
Parental Education: ^a																		
1.0-2.0 (Low)	2.4	3.3	3.5	1.7	1.3	1.6	2.1	3.1	3.5	1.5	0.4	0.5	NA	NA	3.8	8.3	10.0	9.6
2.5-3.0	1.4	2.4	3.8	0.7	1.0	1.5	1.2	2.2	3.5	0.9	0.8	0.4	NA	NA	3.2	6.6	9.7	9.1
3.5-4.0	0.7	2.4	3.7	0.4	0.9	1.7	0.6	2.2	3.2	0.6	0.5	0.4	NA	NA	3.7	6.7	7.9	8.9
4.5-5.0	0.7	1.6	3.1	0.4	0.7	0.9	0.6	1.6	2.7	0.4	0.4	0.6	NA	NA	3.6	5.3	7.4	6.5
5.5-6.0 (High)	1.2	1.9	2.4	0.8	0.7	1.1	1.0	1.8	2.4	0.5	0.4	0.5	NA	NA	4.1	5.7	6.9	5.7

^a Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

^b 12th grade only; Data based on four questionnaire forms. N is four-sixths of N indicated.

^c Only drug use which was not under doctor's orders is included here.

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

TABLE 8 (cont.)

Annual Prevalence of Use of Various Types of Drugs by Subgroups
Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Barbiturates ^b			Tranquilizers ^b			Alcohol			Cigarettes ^c			Steroids ^d		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	NA	NA	3.4	1.8	3.2	3.6	54.0	72.3	77.7	14.3	20.8	28.3	1.0	1.1	1.4
Sex:															
Male	NA	NA	3.4	1.5	2.5	3.5	54.4	71.8	79.0	15.5	20.8	29.0	1.8	1.9	2.4
Female	NA	NA	3.2	2.1	3.8	3.6	53.6	72.9	76.2	13.1	20.7	27.5	0.3	0.3	0.2
College Plans:															
None or under 4 yrs	NA	NA	4.3	3.9	5.0	4.2	61.4	77.3	79.8	29.2	36.5	38.1	2.2	1.7	2.1
Complete 4 yrs	NA	NA	2.9	1.5	2.8	3.4	53.0	71.3	77.0	11.8	17.3	24.2	0.8	0.9	1.2
Region:															
Northeast	NA	NA	2.8	1.0	2.7	3.0	57.3	77.5	83.5	13.7	22.4	30.5	0.7	1.2	1.2
North Central	NA	NA	3.5	1.4	2.4	3.0	56.9	73.8	82.5	15.5	22.9	34.6	1.1	1.0	1.4
South	NA	NA	3.6	2.6	4.2	4.0	50.6	69.9	73.2	16.7	21.2	26.4	1.2	1.0	1.7
West	NA	NA	3.3	1.8	2.9	4.4	52.4	69.9	73.8	10.0	16.7	23.2	0.7	1.0	1.0
Population Density:															
Large SMSA	NA	NA	2.4	1.8	3.2	2.5	57.6	74.4	77.9	12.8	19.7	26.2	0.8	1.5	1.1
Other SMSA	NA	NA	3.9	1.7	3.0	4.1	52.9	70.7	80.0	14.9	20.3	29.3	1.2	1.0	1.4
Non-SMSA	NA	NA	3.3	2.2	3.5	3.7	52.3	73.3	73.8	14.8	22.7	28.6	1.0	0.8	1.6
Parental Education: ^a															
1.0-2.0 (Low)	NA	NA	3.6	3.6	3.3	4.0	55.9	68.1	73.7	26.2	23.5	31.3	1.8	0.7	2.0
2.6-3.0	NA	NA	3.7	1.6	3.6	3.6	54.0	73.6	78.1	16.4	24.1	28.7	1.1	1.3	0.6
3.5-4.0	NA	NA	3.0	2.0	3.2	3.1	55.7	76.2	78.9	13.9	20.4	28.4	1.0	1.0	1.6
4.6-5.0	NA	NA	3.3	1.4	2.5	3.9	53.3	71.1	77.7	10.1	18.5	26.9	0.7	0.9	1.6
5.5-6.0 (High)	NA	NA	3.6	1.8	3.5	4.0	56.8	72.2	80.3	11.3	18.5	27.1	1.0	1.2	0.5

^a Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

^b Only drug use not under a doctor's orders is included here.

^c Annual prevalence is not available. 30-day prevalence is presented here.

^d 12th grade only: Data based on two questionnaire forms. N is two-sixty-four of N indicated.

- There are very modest, but consistent regional variations in terms of the percentage of seniors using some *illicit drug other than marijuana* (adjusted) in the past year. The West leads all regions for this measure (18%); the North Central is next (17%), followed by the Northeast (16%), and the South (14%).
- The West has tended to rank relatively high in the use of an *illicit drug other than marijuana*, due in part to a high level of *cocaine* use. In fact, in the past, the regional differences in cocaine use have been the largest observed. Currently, the annual prevalence of cocaine is highest in the West for all three grade levels; the South is lowest.
- There is a large regional difference in the use of *ice* (data not shown). The highest rate among seniors is in the West at 2.2% annual prevalence, followed by the North Central and Northeast at 1.4% and 1.1%, respectively. The South is the lowest at 1.0% annual prevalence.
- Other specific illicit substances vary in the extent to which they show regional variation, as Table 8 illustrates for the annual prevalence measure. The West shows the highest levels of *cocaine*, *crack* and *other cocaine* use at all three grade levels, although the regional differences are not very large at the present time. The West also ranks first among the regions in use of *hallucinogens*, *LSD* specifically, *ice*, and *other opiates*.
- The South shows the lowest rates of use for *marijuana*, *hallucinogens* (unadjusted), *LSD*, *opiates other than heroin*, and *ice*.
- The North Central stands out for having high rates of *stimulant* use, *inhalant* use, *smoking*, and *drinking*.
- The annual prevalence of *alcohol* use among seniors tends to be somewhat lower in the South and West than it is in the Northeast and North Central. *Binge drinking* shows a similar pattern among twelfth graders, but there is little regional difference in eighth grade.

The North Central and Northeast regions also have much higher rates of *daily smoking* in twelfth grade (23% and 21%, respectively) than the South and the West (16% and 14%, respectively). However, in eighth grade, only the students in the West are below average (4.6% vs. 7.2%–7.9% in the three other regions).

Differences Related to Population Density

- Three levels of population density (or urbanicity) have been distinguished for analytical purposes: (1) large SMSA's, which are the sixteen largest Standard Metropolitan Statistical Areas in the

TABLE 9

Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes by Subgroups
Eighth, Tenth, and Twelfth Graders, 1991

		Percent who used daily in last thirty days																
		Marijuana						Alcohol						Cigarettes				
Grade:	N (Approx.)	Daily			5+ ^b drinks			One or more			Half-pack or more							
		8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th					
Totals	17500	14800	15000	0.2	0.8	2.0	0.5	1.3	3.6	12.9	22.9	29.8	7.2	12.6	18.5	3.1	6.5	10.7
Sex:																		
Male	8600	7200	7400	0.3	1.1	3.0	0.7	2.3	5.3	14.3	26.4	37.8	8.1	12.4	18.8	3.7	6.9	11.6
Female	8600	7400	7200	0.1	0.5	0.9	0.3	0.4	1.6	11.4	19.5	21.2	6.2	12.5	17.9	2.4	6.0	9.5
College Plans:																		
None or under 4 yrs	2300	2600	4000	0.9	1.6	3.3	1.6	2.0	5.4	24.4	33.0	34.4	18.5	25.7	28.4	10.1	15.0	18.7
Complete 4 yrs	14600	11900	10300	0.1	0.6	1.4	0.4	1.2	2.9	11.1	20.8	27.9	5.3	9.6	14.1	1.9	4.4	7.1
Region:																		
Northeast	3000	2700	2800	0.1	0.8	2.4	0.3	1.3	3.3	10.3	25.1	33.4	7.2	14.3	20.9	3.3	7.8	12.9
North Central	5300	3700	4000	0.1	0.9	1.9	0.6	1.4	3.9	13.4	23.7	34.6	7.8	14.3	23.0	3.3	7.1	14.1
South	6300	4900	5100	0.3	0.6	1.8	0.6	1.6	4.1	14.1	22.7	26.3	7.9	12.8	16.4	3.4	7.2	8.9
West	2900	3500	3100	0.2	1.1	2.1	0.5	1.0	2.7	12.3	20.7	26.3	4.6	9.1	13.9	1.9	4.0	7.2
Population Density:																		
Large SMSA	4500	3400	3600	0.2	0.8	1.9	0.4	1.3	3.3	12.4	21.6	28.6	6.3	12.3	16.7	2.4	6.9	10.2
Other SMSA	8400	7400	7200	0.2	0.9	2.5	0.5	1.2	3.5	12.4	22.1	30.1	7.7	11.7	19.0	3.3	5.8	10.7
Non-SMSA	4600	4000	4200	0.2	0.7	1.2	0.8	1.6	4.1	14.4	25.5	30.4	7.3	14.3	19.0	3.4	7.6	11.1
Parental Education ^a :																		
1.0-2.0 (Low)	1400	1300	1500	0.5	1.1	2.3	1.6	2.6	4.2	21.8	25.7	26.8	15.9	16.0	21.2	7.9	9.9	12.5
2.5-3.0	4400	3900	4100	0.3	0.9	2.4	0.8	1.5	4.1	15.1	26.0	29.9	8.6	15.5	19.8	3.7	8.9	12.4
3.5-4.0	4100	3900	4200	0.2	0.8	1.8	0.3	1.1	3.0	12.8	21.7	30.4	6.5	12.0	18.5	2.5	5.8	10.7
4.5-5.0	4100	3500	3100	0.1	0.8	1.7	0.3	1.1	3.1	10.2	20.8	29.9	4.0	10.6	16.2	1.6	4.7	7.9
5.5-6.0 (High)	2200	1800	1500	0.0	0.4	1.6	0.4	1.1	4.1	9.8	22.4	30.6	4.9	9.6	16.1	1.8	4.5	9.0

^a Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

^b This measure refers to use of five or more drinks in a row in the past two weeks.

TABLE 10

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Types of Drugs Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Approx. N			Marijuana			Inhalants ^a			Hallucinogens			LSD		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:															
White	11100	9800	11000	9.4	23.9	38.4	18.1	18.2	19.8	3.2	7.2	10.7	2.7	6.7	9.9
Black	1900	1800	1700	7.6	17.1	25.2	10.9	7.5	7.0	1.2	0.7	1.2	1.1	0.6	0.9
Hispanic	1400	1400	1200	16.6	27.3	43.1	19.4	12.0	16.8	4.9	5.1	9.8	3.9	4.3	8.6
Annual:															
White	11100	9800	11000	5.8	17.6	26.0	9.7	8.3	7.4	1.9	4.7	6.7	1.7	4.4	6.1
Black	1900	1800	1700	4.1	8.4	11.9	5.0	3.3	2.6	0.8	0.1	0.7	0.7	0.1	0.6
Hispanic	1400	1400	1200	10.9	18.7	26.1	9.3	5.3	6.5	3.4	3.2	5.0	2.7	2.7	4.0
30-Day:															
White	11100	9800	11000	3.0	9.4	15.0	4.5	2.9	2.4	0.6	1.9	2.4	0.5	1.8	2.1
Black	1900	1800	1700	2.1	3.8	6.5	2.3	2.0	1.5	0.4	0.1	0.2	0.4	0.1	0.1
Hispanic	1400	1400	1200	5.6	9.3	14.4	5.6	3.0	3.0	1.9	1.5	1.4	1.4	1.3	0.9
Daily:															
White	11100	9800	11000	0.2	0.9	2.0	0.2	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.1
Black	1900	1800	1700	0.1	0.2	1.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Hispanic	1400	1400	1200	0.2	0.7	2.6	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0

^a 12th grade only: Data based on five questionnaire forms. N is five-sixths of N indicated.

^b Only drug use which was not under doctor's orders is included here.

TABLE 10 (cont.)

Race/Ethnicity Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Types of Drugs Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Cocaine			"Crack"			Other Cocaine ^a			Heroin			Stimulants ^{b,c}		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:															
White	2.2	4.1	8.0	1.2	1.6	2.9	1.9	3.7	7.1	1.2	1.2	0.9	11.0	14.7	17.4
Black	1.3	1.7	2.8	0.8	1.0	1.4	1.0	1.4	2.4	0.6	0.6	0.4	7.2	5.2	5.3
Hispanic	4.1	7.2	12.5	1.9	2.4	6.3	3.8	6.7	12.0	0.8	0.8	1.5	10.7	12.1	12.9
Annual:															
White	1.0	2.1	3.5	0.6	0.8	1.3	0.8	2.0	3.3	0.6	0.6	0.4	6.5	9.4	9.3
Black	0.8	0.8	1.5	0.5	0.5	0.7	0.7	0.7	1.2	0.3	0.3	0.2	3.7	2.9	2.7
Hispanic	2.1	4.0	5.3	1.3	1.4	2.8	1.9	3.6	5.0	0.3	0.3	0.8	7.0	5.9	6.6
30-Day:															
White	0.4	0.6	1.3	0.2	0.3	0.6	0.4	0.5	1.1	0.2	0.2	0.2	2.6	3.7	3.6
Black	0.4	0.2	0.8	0.3	0.1	0.4	0.4	0.2	0.8	0.2	0.2	0.1	1.3	1.6	1.1
Hispanic	1.2	1.2	1.9	0.8	0.4	1.3	1.1	1.1	1.7	0.7	0.0	0.5	3.4	3.0	1.6
Daily:															
White	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Black	0.1	0.1	0.3	0.0	0.1	0.1	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Hispanic	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.1	0.1	0.2	0.1

^a 12th grade only: Data based on four questionnaire forms. N is four-sixths of N indicated.

^b Only drug use which was not under doctor's orders is included here.

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

TABLE 10 (cont.)

Race/Ethnicity Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Types of Drugs Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Grade:	Tranquilizers ^b			Alcohol			Cigarettes			Steroids			E± Drinks		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:															
White	3.8	6.4	7.9	71.8	85.6	89.8	44.5	57.8	66.0	1.8	1.7	1.9	NA	NA	NA
Black	1.9	2.1	2.2	64.5	78.5	80.3	34.7	42.7	46.2	1.6	1.6	1.0	NA	NA	NA
Hispanic	5.1	6.5	7.6	72.4	84.3	90.4	50.8	55.1	65.0	2.0	2.1	4.8	NA	NA	NA
Annual:															
White	1.9	3.7	4.1	56.0	75.4	80.5	NA	NA	NA	1.0	0.9	1.3	NA	NA	NA
Black	1.0	0.9	1.1	43.6	60.3	64.3	NA	NA	NA	0.8	0.8	0.8	NA	NA	NA
Hispanic	2.5	2.7	2.9	58.2	72.2	80.1	NA	NA	NA	1.1	1.4	3.2	NA	NA	NA
30-Day:															
White	0.8	1.4	1.4	26.0	45.7	57.7	15.0	23.9	31.8	0.4	0.5	0.7	NA	NA	NA
Black	0.2	0.3	0.4	17.8	30.2	34.4	5.3	6.4	9.4	0.4	0.5	0.8	NA	NA	NA
Hispanic	1.0	1.0	1.2	29.9	42.1	53.7	16.0	15.9	24.9	0.5	0.8	1.8	NA	NA	NA
Daily:															
White	0.0	0.0	0.1	0.5	1.4	3.7	7.4	14.9	21.1	0.0	0.0	0.1	12.6	24.4	32.9
Black	0.0	0.0	0.0	0.4	0.6	1.8	1.6	2.6	4.9	0.0	0.2	0.0	9.9	14.4	11.8
Hispanic	0.1	0.0	0.2	1.3	1.2	3.6	8.2	7.4	12.0	0.0	0.0	0.2	19.3	22.9	29.9

^b Only drug use which was not under doctor's orders is included here.

1980 Census; (2) other SMSA's, which are the remaining Standard Metropolitan Statistical Areas; and (3) non-SMSA's, which are the sampling areas not designated as metropolitan by the Census.

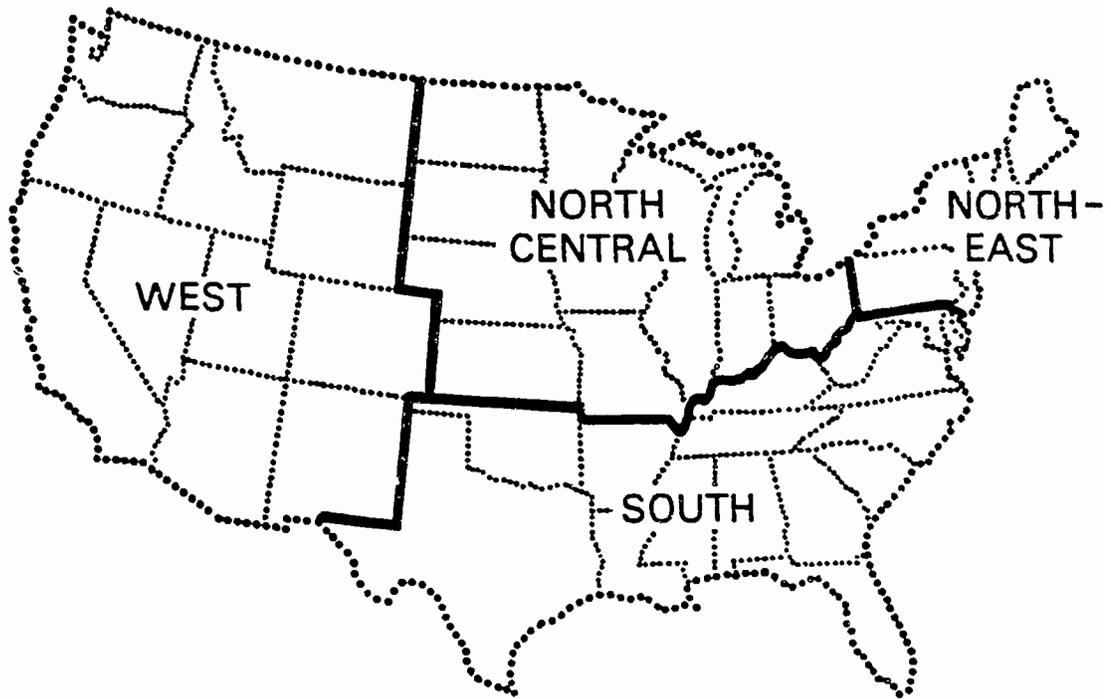
- In general, the differences in the use of most illicit drugs across these different sizes of community are small at the present time, reflecting how widely illicit drug use has diffused through the population. (See Tables 8 and 9.)
- In twelfth grade, *marijuana* use is somewhat lower in the nonurban areas (18%) than in the large metropolitan areas (24%) or the other metropolitan areas (28%).
- On the other hand, *stimulant* use is somewhat higher than average in the non-metropolitan areas in all three grade levels.
- There has been some tendency for a few other drugs to be associated positively with urbanicity; however, the relationships have not been strong, nor have they remained consistent from one year to another.

Differences Related to Parental Education

- The best measure of family socioeconomic status available in the study is an index of parental education, which is based on the average of the educational levels reported for both parents by the respondent (or using data for one parent, if data for both are not available). The scale values on the original questions are: 1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, and (6) graduate or professional school after college. The average educational level obtained by students' parents has been rising over the years. Tables 7-9 give the distributions for 1991.
- By senior year, there is rather little association with family socioeconomic status for *most drugs*. This again speaks to the extent to which illicit drug use has permeated all social strata.
- On the other hand, an examination of Table 8 shows that in eighth grade, the lowest group on this measure of socioeconomic status does have a somewhat higher rate of use of a number of drugs—particularly *cigarettes*, *marijuana*, and *inhalants*, but to a lesser degree *hallucinogens*, *LSD*, *cocaine*, *crack*, *heroin*, *stimulants*, *tranquilizers*, and *steroids*.
- Practically none of these relationships is ordinal: rather, the bottom category, or sometimes two categories, stand out as having higher usages rates than the others. The major exception to this rule is for *binge drinking* in the prior two weeks, which, among the eighth graders, rises consistently from 10% in the top economic status category to 22% in the bottom one. Again, no such associa-

FIGURE 5

States Included in the Four Regions of the Country



These are the four major regions of the country as defined by the U.S. Bureau of the Census.

tion is found in twelfth grade. For *daily drinking*, there is also a fairly strong negative association; however, this difference does not show up in the twelfth grade sample.

- *Daily smoking* comes close to having an ordinal relationship in all three grade levels, although the association is strongest in eighth grade, where only 5% of the top stratum are current daily smokers vs. 16% of the bottom stratum.
- The diminished socioeconomic differences by twelfth grade could be explained by the upper- and middle-class youngsters "catching up". The difference may also be explained by the impact of dropping out, which is correlated both with social class and drug use. Only a panel study following eighth graders will permit us to determine which of these alternative explanations is correct.

Racial/Ethnic Differences

Racial/ethnic comparisons for blacks, Hispanics, and whites are being added to this monograph series for the first time.¹³ Although the design of this project did not include an oversampling of any minority groups, the large overall sample sizes at each grade level do produce fair numbers of black and Hispanic respondents each year. In this transition year, in which only one year of data is available for eighth and tenth grades, we present one-year data for all three grades. In future years, we will combine two years of data. We caution the reader that, this year, the sampling error of differences between groups is likely to be larger than would be true for other demographic and background variables such as sex or college plans, because blacks and Hispanics are more likely to be clustered by school. Table 10 gives the lifetime, annual, 30-day, and daily use statistics for the three racial/ethnic groups at all three grade levels, along with the numbers of cases upon which the estimates are based.

- Several general points can be derived from Table 10. First, for virtually *all drugs*, licit and illicit, black *seniors* have lower reported lifetime and annual prevalence rates than white or Hispanic seniors. This is mostly true for the 30-day and daily prevalence statistics, as well, although there are a few exceptions.
- Second, the same can be said for blacks in eighth and tenth grades, which means that the low usage rates for blacks in twelfth grade are almost certainly not due to differential dropout rates and/or a differential degree of association between dropping out and using drugs among the three racial/ethnic groups.

¹³We recognize that the Hispanic category is a broad one, encompassing people with various Latin American and Caribbean origins, but for the purposes of this monograph the sample sizes unfortunately are too small to differentiate them. For a more complete treatment of racial/ethnic differences, in which additional subgroups are distinguished and males and females are examined separately within each racial/ethnic category, see Bachman, J.G., Wallace, J.M., Jr., O'Malley, P.M., Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health*, 81, 372-377.

- The third general point is that for many drugs, whites have the highest lifetime and annual prevalence rates in senior year. These include: *marijuana, inhalants, hallucinogens, LSD* specifically, *opiates other than heroin, amphetamines, barbiturates, methaqualone, tranquilizers, alcohol, and cigarettes*. As we will discuss below, not all of these differences occur at lower grade levels.
- Hispanics, taken as a group, have the highest lifetime and annual prevalence rates in senior year for some particularly dangerous classes of drugs, however. These include *PCP, cocaine, crack, other cocaine, heroin, ice, and steroids*. Their rates of *crack* and *steroid* use are particularly high, relative to the other two racial/ethnic groups. Further, it should be remembered that Hispanics have a considerably higher dropout rate, based on Census Bureau statistics, than whites or blacks, which would tend to diminish the differences observable in senior year.
- An examination of the racial/ethnic comparisons at lower grade levels shows Hispanics having higher rates of use not only on all the drugs on which they have the highest prevalence in twelfth grade (except, perhaps, for PCP and ice, which are not included on the lower grade questionnaires), but on a number of other drugs, as well. For example, in eighth grade the lifetime prevalence for Hispanics, whites, and blacks is 17%, 9%, and 8% for *marijuana*; 19%, 18%, and 11% for *inhalants*; 5%, 3%, and 1% for *hallucinogens*; 5%, 4%, and 2% for *tranquilizers*; 51%, 46%, and 35% for *cigarettes*; and so on. In other words, in eighth grade—before there is any dropping out to speak of—Hispanics have the highest rate of use of nearly all the drugs: whereas by twelfth grade, whites are highest in most. Certainly the considerably higher dropout rate among Hispanics could explain this shift, and may be the most plausible explanation. Another explanation worth considering is that Hispanics may tend to start using drugs younger, but that whites catch up to, and pass them at older ages. These explanations are not mutually exclusive, of course. To some degree, both explanations may be true.
- Looking at the daily use figures, we find exceptionally large absolute and proportional differences between the three groups in their rates of *daily cigarette smoking*. Among seniors, whites have a 21% daily smoking rate, Hispanics 12% (which may be low, in part, because of their higher dropout rate), and blacks only 5%. In fact, blacks have much lower smoking rates at all grade levels.
- Among blacks, *daily drinking* is only about half that for whites and Hispanics, and *daily marijuana use* only about one-third the rate of the comparison groups.

- Recent *binge drinking* is lowest among blacks at all grade levels, though the proportional difference is greatest in twelfth grade where 33% of whites report binge drinking and 30% of Hispanics, compared with only 12% of blacks. In eighth grade, Hispanics have the highest rate at 19%, compared with 13% for whites and 10% for blacks.

Chapter 5

TRENDS IN DRUG USE AMONG HIGH SCHOOL SENIORS

This section summarizes trends in drug use among high school seniors, comparing the seventeen graduating classes of 1975 through 1991. As in the previous section, the outcomes to be discussed include measures of lifetime use, use during the past year, use during the past month, and daily use. In addition, trends are compared for the key demographic subgroups discussed earlier; and trends in noncontinuation rates are also examined.

TRENDS IN PREVALENCE 1975-1991: ALL SENIORS

- The years 1978 and 1979 marked the crest of a long and dramatic rise in *marijuana* use among American high school students. As Tables 11 through 14 illustrate, annual and 30-day prevalence of marijuana use leveled between 1978 and 1979, following a long and steady rise in the preceding years. In 1980 both statistics dropped for the first time and continued to decline every year, except in 1985 when there was a brief pause. In 1991, annual use continued to decline significantly, and now stands 27 percentage points below its all-time high of 51% in 1979. Thirty-day use, although dropping from the 1990 level, was not significantly different. Lifetime prevalence began to drop in 1981, though more gradually. It decreased significantly in 1991, but still is only four-tenths lower than its all time high (i.e., 37% vs. 60%).¹⁴ As we will discuss in Chapter 8, there have been some significant changes in the attitudes and beliefs that young people hold in relation to marijuana and which appear to account for much of this decline in use.
- Of greater importance is the even sharper downward trend which has been continuing to occur for *daily marijuana use*. Between 1975 and 1978 there was an almost two-fold increase in daily use. The proportion reporting daily use in the class of 1975 (6%) came as a surprise to many; and then that proportion rose rapidly, so that by 1978 one in every nine high school seniors (11%) indicated that he or she used the drug on a daily or nearly daily basis (defined as use on 20 or more occasions in the last 30 days). In 1979 this rapid and troublesome increase halted. By 1991 the

¹⁴Lifetime use declines more gradually than the annual or 30-day statistics because it reflects changes in initiation rates only, whereas annual and 30-day reflect both changes in initiation rates and noncontinuation rates.

TABLE 11
Trends in Lifetime Prevalence of Various Types of Drugs

Percent ever used

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991
	15400	17100	17800	15900	15900	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000
Any Illicit Drug Use ^a	55.2	58.3	61.6	64.1	65.1	65.4	65.6	65.8	64.1	61.6	60.6	57.6	56.6	53.9	50.9	47.9	44.1
Adjusted Version	-	-	-	-	-	-	-	64.4	62.9	61.6	60.6	57.6	56.6	53.9	50.9	47.9	44.1
Any Illicit Drug Other Than Marijuana ^c	36.2	35.4	35.8	36.5	37.4	38.7	42.8	45.0	44.4	-	-	-	-	-	-	-	-
Adjusted Version	-	-	-	-	-	-	-	41.1	40.4	40.3	39.7	37.7	35.8	32.5	31.4	29.4	26.9
Marijuana/Hashish	47.3	52.8	56.4	59.2	60.4	60.3	59.5	58.7	57.0	54.9	54.2	50.9	50.2	47.2	43.7	40.7	36.7
Inhalants ^d	NA	10.3	11.1	12.0	12.7	11.9	12.3	12.8	13.6	14.4	15.4	15.9	17.0	16.7	17.6	18.0	17.6
Inhalants Adjusted ^e	NA	NA	NA	NA	18.2	17.3	17.2	17.7	18.2	18.0	18.1	20.1	18.6	17.5	18.6	18.5	18.0
Amyl & Butyl Nitrites ^{f,g}	NA	NA	NA	NA	11.1	11.1	10.1	9.8	8.4	8.1	7.9	8.6	4.7	3.2	3.3	2.1	1.6
Hallucinogens	16.3	15.1	13.9	14.3	14.1	13.3	13.3	12.5	11.9	10.7	10.3	9.7	10.3	8.9	9.4	9.4	9.6
Hallucinogens Adjusted ^h	NA	NA	NA	NA	17.7	15.6	15.3	14.3	13.6	12.3	12.1	11.9	10.6	9.2	9.9	9.7	10.0
LSI ^{i,j,g}	11.3	11.0	9.8	9.7	9.5	9.3	9.8	9.6	8.9	8.0	7.5	7.2	8.4	7.7	8.3	8.7	8.8
PCP ^{f,g}	NA	NA	NA	NA	12.8	9.6	7.8	6.0	5.6	5.0	4.9	4.8	3.0	2.9	3.0	2.8	2.9
Cocaine	9.0	9.7	10.8	12.9	15.4	15.7	16.5	16.0	16.2	16.1	17.3	16.9	15.2	12.1	10.3	9.4	7.8
"Crack" ^{k,l}	NA	5.4	4.8	3.5	3.1												
Other cocaine ^j	NA	14.0	12.1	8.5	8.6	7.0											
Heroin	2.2	1.8	1.8	1.6	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.1	1.2	1.1	1.3	1.3	0.9
Other opiates ^k	9.0	9.6	10.3	9.9	10.1	9.8	10.1	9.6	9.4	9.7	10.2	9.0	9.2	8.6	8.3	8.3	6.6
Stimulants ^k	22.3	22.6	23.0	22.9	24.2	26.4	32.2	35.6	35.4	NA							
Stimulants Adjusted ^{h,j,k}	NA	27.9	26.9	27.9	26.2	23.4	21.6	19.8	19.1	17.5	15.4						
Crystal Methamphetamine ^l	NA	2.7															
Sedatives ^{k,m}	18.2	17.7	17.4	16.0	14.6	14.9	16.0	15.2	14.4	13.3	11.5	10.4	8.7	7.8	7.4	7.5	6.7
Barbiturates ^{k,m}	16.9	16.2	15.6	13.7	11.8	11.0	11.3	10.3	9.9	9.9	9.2	8.4	7.4	6.7	6.5	6.8	6.2
Methaqualone ^{k,m}	8.1	7.8	8.5	7.9	8.3	9.5	10.6	10.7	10.1	8.3	6.7	5.2	4.0	3.3	2.7	2.3	1.3
Tranquilizers ^k	17.0	16.8	18.0	17.0	16.3	15.2	14.7	14.0	13.3	12.4	11.9	10.9	10.9	9.4	7.6	7.2	7.2
Alcohol	90.4	91.9	92.5	93.1	93.0	93.2	92.6	92.8	92.6	92.6	92.2	91.3	92.2	92.0	90.7	89.5	88.0
Cigarettes	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4	63.1
Steroids ^l	NA	3.0	2.9														

NOTES: Level of significance of difference between the two most recent classes: $\epsilon = .05$, $ss = .01$, $sss = .001$. NA indicates data not available.

^a Use of "any illicit drugs" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

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

^c Use of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

^d Data based on four questionnaire forms in 1976-1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989-1991; N is five sixths of N indicated.

^e Adjusted for underreporting of amyl and butyl nitrites. See text for details.

^f Data based on a single questionnaire form; N is one-fifth of N indicated in 1979-1988 and one sixth of N indicated in 1989-1991.

^g Question text changed slightly in 1987.

^h Adjusted for underreporting of PCP. See text for details.

ⁱ Data based on two questionnaire forms in 1987-1989; N is two-fifths of N indicated in 1987-1988 and two-sixths of N indicated in 1989. Data based on six questionnaire forms in 1990-1991.

^j Data based on a single questionnaire form in 1987-1989; N is one-fifth of N indicated in 1987-1988 and one sixth of N indicated in 1989. Data based on four questionnaire forms in 1990-1991; N is four-sixths of N indicated.

^k Only drug use which was not under a doctor's orders is included here.

^l Data based on two questionnaire forms; N is two-sixths of N indicated. Steroid data based on a single questionnaire form in 1989-1990.

^m Data based on five questionnaire forms in 1975-1988, six questionnaire forms in 1989, and one questionnaire form in 1990-1991; N is one-sixth of N indicated in 1990-1991.

TABLE 13
Trends in Annual Prevalence of Various Types of Drugs

Percent who used in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Change 1991-1990
	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	
Any Illicit Drug Use ^a	45.0	48.1	51.1	53.8	54.2	53.1	52.1	50.8	49.1	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	-3.1 sss
Adjusted ^b	26.2	25.4	26.0	27.1	28.2	30.4	34.0	33.8	32.5	28.4	27.4	25.9	24.1	21.1	20.0	17.9	16.2	-1.7 s
Any Illicit Drug Other Than Marijuana ^c	40.0	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	-3.1 ss
Adjusted Version ^d	NA																	
Marijuana/Hashish	NA																	
Inhalants ^d	NA																	
Inhalants Adjusted ^e	NA																	
Amyl/Butyl Nitrites ^{f,g}	11.2	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	-0.1
Hallucinogens	NA																	
Hallucinogens Adjusted ^h	7.2	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	-0.2
LSD ^{f,g}	NA																	
PCP ^{f,g}	5.6	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	-1.8 sss
Cocaine	NA																	
"Crack" ⁱ	NA																	
Other cocaine ^j	1.0	0.3	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	-0.1
Heroin	5.7	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	-1.0 sss
Other opiates ^k	16.2	15.8	16.3	17.1	18.3	20.8	26.0	26.1	24.6	NA								
Stimulants ^k	NA																	
Stimulants Adjusted ^{b,k}	NA																	
Crystal Methamphetamine ^l	11.7	10.7	10.8	9.9	9.9	10.3	10.5	9.1	7.9	6.6	5.8	5.2	4.1	3.7	3.7	3.6	3.6	0.0
Sedatives ^{k,m}	10.7	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	0.0
Barbiturates ^k	5.1	4.7	5.2	4.9	5.9	7.2	7.6	6.8	5.4	3.8	2.8	2.1	1.5	1.3	1.3	0.7	0.5	-0.2
Methaqualone ^{k,m}	10.6	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	+0.1
Tranquilizers ^k	84.8	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	-2.9 sss
Alcohol	NA																	
Cigarettes	NA																	
Steroids ^l	NA																	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

^aUse of "any illicit drugs" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

^bBased on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

^cUse of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

^dData based on four questionnaire forms in 1976-1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989-1991; N is five-sixths of N indicated.

^eAdjusted for underreporting of amyl and butyl nitrites. See text for details.

^fData based on a single questionnaire form; N is one-fifth of N indicated in 1979-1988 and one-sixth of N indicated in 1989-1991.

^gQuestion text changed slightly in 1987.

^hAdjusted for underreporting of PCP. See text for details.

ⁱData based on a single questionnaire form in 1986; N is one-fifth of N indicated. Data based on two questionnaire forms in 1987-1989; N is two-fifths of N indicated in 1987-1988 and two-sixths of N indicated in 1989. Data based on six questionnaire forms in 1990-1991.

^jData based on a single questionnaire form in 1987-1989; N is one-fifth of N indicated in 1987-1988 and one-sixth of N indicated in 1989. Data based on four questionnaire forms in 1990-1991; N is four-sixths of N indicated.

^kOnly drug use which was not under a doctor's orders is included here.

^lData based on two questionnaire forms; N is two-sixths of N indicated. Steroid data based on a single questionnaire form in 1989-1990.

^mData based on five questionnaire forms in 1975-1988, six questionnaire forms in 1989, and one questionnaire form in 1990-1991. N is one-sixth of N indicated in 1990-1991.

TABLE 13
Trends in Thirty-Day Prevalence of Various Types of Drugs

Percent who used in last thirty days

Class of 1975-9400	Percent who used in last thirty days																Class of 1990-1991 change	
	1975-9400	1976-15400	1977-17100	1978-17800	1979-15500	1980-15900	1981-17500	1982-17700	1983-16300	1984-15900	1985-16000	1986-15200	1987-16300	1988-16300	1989-16700	1990-15200		1991-15000
Approx. N =	30.7	34.2	37.6	38.9	38.9	37.2	36.9	33.5	32.4	29.2	29.7	27.1	24.7	21.3	19.7	17.2	16.4	-0.8
Any Illicit Drug Use ^a Adjusted Version ^b	15.4	13.9	15.2	15.1	16.8	18.4	21.7	19.2	18.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0	7.1	-0.9
Any Illicit Drug Other Than Marijuana ^c Adjusted Version ^b	27.1	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	-0.2
Marijuana/Hashish ^d	NA	0.9	1.3	1.5	1.7	1.4	1.5	1.5	1.7	1.9	2.2	2.5	2.8	2.6	2.3	2.7	2.4	-0.3
Inhalants ^d	NA	NA	NA	NA	3.2	2.7	2.5	2.5	2.5	2.6	3.0	3.2	3.5	3.0	2.7	2.9	2.6	-0.3
Inhalants Adjusted ^e	NA	NA	NA	NA	2.4	1.8	1.4	1.1	1.4	1.4	1.6	1.3	1.3	0.6	0.6	0.6	0.4	-0.2
Any/Butyl Nitrites ^{f,g}	4.7	3.4	4.1	3.9	4.0	3.7	3.7	3.4	2.8	2.6	2.5	2.5	2.2	2.2	2.2	2.2	2.2	0.0
Hallucinogens ^d	NA	NA	NA	NA	5.3	4.4	4.5	4.1	3.5	3.2	3.8	3.5	2.8	2.3	2.9	2.3	2.4	+0.1
Hallucinogens Adjusted ^h	2.3	1.9	2.1	2.1	2.4	2.3	2.5	2.4	1.9	1.5	1.6	1.7	1.8	1.8	1.8	1.9	1.9	0.0
LSD ^{f,g}	NA	NA	NA	NA	2.4	1.4	1.4	1.0	1.3	1.0	1.6	1.3	0.6	0.3	1.4	0.4	0.5	+0.1
PCP ^{f,g}	1.9	2.0	2.9	3.9	5.7	5.2	5.8	5.0	4.9	5.8	6.7	6.2	4.3	3.4	2.8	1.9	1.4	-0.5
Cocaine ⁱ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.6	1.4	0.7	0.7	0.0
"Crack" ⁱ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.2	1.9	1.7	1.2	-0.5
Other cocaine ^j	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.0
Heroin	2.1	2.0	2.8	2.1	2.4	2.4	2.1	1.8	1.8	1.8	2.3	2.0	1.8	1.6	1.6	1.5	1.1	-0.1
Other opiates ^k	8.5	7.7	8.8	8.7	9.9	12.1	15.8	13.7	12.4	NA	NA							
Stimulants ^k	NA	NA	NA	NA	NA	NA	NA	10.7	8.9	8.3	6.8	5.5	5.2	4.6	4.2	3.7	3.2	-0.5
Stimulants Adjusted ^{h,k}	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0
Crystal Methamphetamine ^l	5.4	4.5	5.1	4.2	4.4	4.8	4.6	3.4	3.0	2.3	2.4	2.2	1.7	1.4	1.6	1.4	1.5	+0.1
Sedatives ^{k,m}	4.7	3.9	4.3	3.2	3.2	2.9	2.6	2.0	2.1	1.7	2.0	1.8	1.4	1.2	1.4	1.3	1.4	+0.1
Barbiturates ^k	2.1	1.6	2.3	1.9	2.3	3.3	3.1	2.4	1.8	1.1	1.0	0.8	0.6	0.5	0.6	0.2	0.2	0.0
Methaqualone ^{k,m}	4.1	4.0	4.6	3.4	3.7	3.1	2.7	2.4	2.5	2.1	2.1	2.1	2.0	1.5	1.3	1.2	1.4	+0.2
Tranquilizers ^k	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.5	65.3	66.4	63.9	60.0	57.1	54.0	-3.1
Alcohol	36.7	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	-1.1
Cigarettes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.2
Steroids ^l																		

NOTES: Level of significance of difference between the two most recent classes: $s = .05$, $ss = .01$, $sss = .001$. NA indicates data not available.

^aUse of "any illicit drugs" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

^bBased on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

^cUse of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

^dData based on four questionnaire forms in 1975-1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989-1991; N is five-sixths of N indicated.

^eAdjusted for underreporting of amyl and butyl nitrites. See text for details.

^fData based on a single questionnaire form; N is one-fifth of N indicated in 1979-1988 and one-sixth of N indicated in 1989-1991.

^gQuestion text changed slightly in 1987.

^hAdjusted for underreporting of PCP. See text for details.

ⁱData based on two questionnaire forms in 1987-1989; N is two-fifths of N indicated in 1987-1988 and two-sixths of N indicated in 1989. Data based on six questionnaire forms in 1990-1991.

^jData based on a single questionnaire form in 1987-1989; N is one-fifth of N indicated in 1987-1988 and one-sixth of N indicated in 1989. Data based on four questionnaire forms in 1990-1991; N is four-sixths of N indicated.

^kOnly drug use which was not under a doctor's orders is included here.

^lData based on two questionnaire forms; N is two-sixths of N indicated. Steroid data based on a single questionnaire form in 1989-1991.

^mData based on five questionnaire forms in 1975-1988, six questionnaire forms in 1989-1991; N is one sixth of N indicated in 1990-1991.

TABLE 14
Trends in Thirty-Day Prevalence of Daily Use of Various Types of Drugs

Percent who used daily in last thirty days

	Class of 1975 15400	Class of 1976 17100	Class of 1977 17800	Class of 1978 17800	Class of 1979 15500	Class of 1980 15900	Class of 1981 17500	Class of 1982 17700	Class of 1983 16300	Class of 1984 15900	Class of 1985 16000	Class of 1986 15200	Class of 1987 16300	Class of 1988 16300	Class of 1989 16700	Class of 1990 15200	Class of 1991 15000	change 1991
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	
Marijuana/Hashish	6.0	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	-0.2
Inhalants ^h	NA	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	-0.1
Inhalants Adjusted ^b	NA	NA	NA	NA	NA	0.1	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.5	+0.2
Amyl & Butyl Nitrites ^{c,d}	NA	NA	NA	NA	0.0	0.1	0.1	0.0	0.2	0.1	0.3	0.5	0.3	0.1	0.3	0.1	0.2	+0.1
Hallucinogens	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0
Hallucinogens Adjusted ^f	NA	NA	NA	NA	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.0	0.3	0.3	0.1	-0.2
LSD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0
PCP ^{c,d}	NA	NA	NA	NA	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.0
Cocaine	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.1	0.1	0.0
"Crack" ^{g,f}	NA	0.1	0.1	0.2	0.1	0.1	0.0											
Other cocaine ^f	NA	0.2	0.2	0.1	0.1	0.1	0.0											
Heroin	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Other opiates ^h	0.1	0.1	0.2	0.1	0.0	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
Stimulants ^h	0.5	0.4	0.5	0.5	0.6	0.7	1.2	1.1	1.1	NA	NA							
Stimulants Adjusted ^{h,i}	NA	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.0						
Crystal Methamphetamine ^j	NA	0.1	0.1	-0.1														
Sedatives ^{h,k}	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Barbiturates ^h	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0
Barbiturates ^{h,k}	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Methaqualone	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0
Tranquilizers ^h	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0
Alcohol	5.7	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	-0.1
Daily	56.8	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	-2.4
5 + drinks in a row/ last 2 weeks																		
Cigarettes	26.9	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	0.6
Daily	17.9	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	-0.6
Half-pack or more per day	NA	0.1	0.2	0.1														
Steroids ^j																		

NOTES: Level of significance of difference between the two most recent classes: $s = .05$, $ss = .01$, $sss = .001$. NA indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.

^aData based on four questionnaire forms in 1976-1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989-1991; N is five-sixths of N indicated.

^bAdjusted for underreporting of amyl and butyl nitrites. See text for details.

^cData based on a single questionnaire form; N is one-fifth of N indicated in 1979-1988 and one-sixth of N indicated in 1989-1991.

^dQuestion text changed slightly in 1987.

^eAdjusted for underreporting of PCP. See text for details.

^fData based on two questionnaire forms in 1987-1989; N is two fifths of N indicated in 1987-1988 and two sixths of N indicated in 1989. Data based on four questionnaire forms in 1990-1991.

^gData were based on a single questionnaire form in 1987-1989; N is one fifth of N indicated in 1987-1988 and one-sixth of N indicated in 1989. Data based on four questionnaire forms in 1990-1991; N is four-sixths of N indicated.

^hOnly drug use which was not under a doctor's orders is included here.

ⁱBased on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

^jData based on two questionnaire forms; N is two sixths of N indicated. Steroid data based on a single questionnaire form in 1989-1990.

^kData based on five questionnaire forms in 1975-1988, six questionnaire forms in 1989, and one questionnaire form in 1990-1991; N is one sixth of N indicated in 1990-1991.

daily usage rate had dropped to 2%, well below the 6% level we first observed in 1975. As later sections of this report document, much of this dramatic reversal appears to be due to a continuing increase in concerns about possible adverse effects from regular use, and a growing perception that peers would disapprove of marijuana use, particularly regular use.

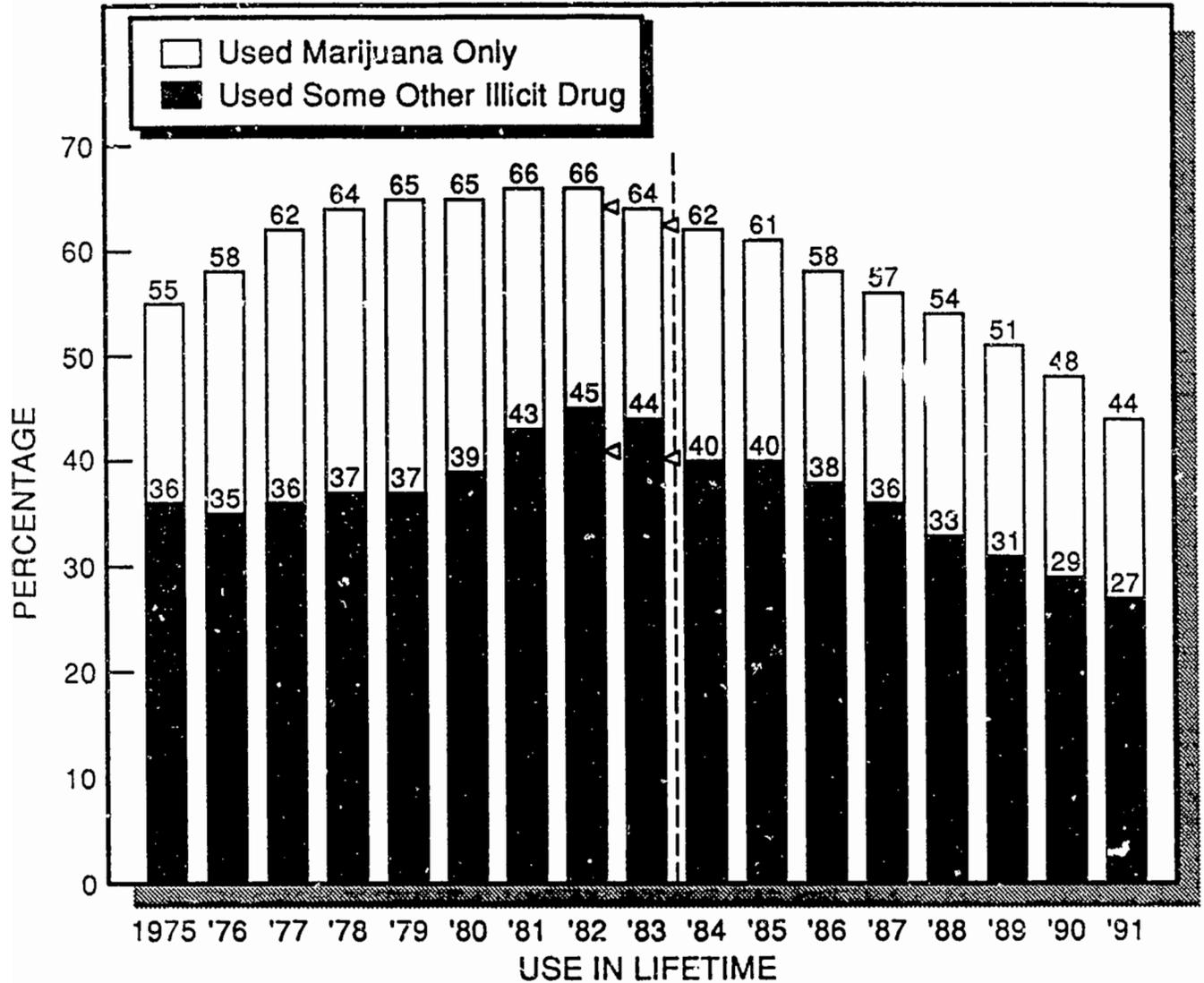
- Until 1978, the proportion of seniors involved in *any illicit drug use* had increased steadily, primarily because of the increase in marijuana use. About 54% of the classes of 1978 and 1979 reported having tried at least one illicit drug during the prior year, up from 45% in the class of 1975. Between 1979 and 1984, however, the proportion reporting using any illicit drug during the prior year dropped by 1 or 2% annually until 1985, when there was a brief pause in the decline. In 1986 the decline resumed, with annual prevalence dropping to 29% in 1991. The overall decline in the proportion of students having any involvement with illicit drugs appears to be due primarily to the change in marijuana use.
- As Figure 6 and Table 11 illustrate, between 1976 and 1982 there had been a very gradual, steady increase in the proportion who have ever used *some illicit drug other than marijuana*. The proportion going beyond marijuana in their lifetime had risen from 35% to 45% between 1976 and 1982, the peak year. Between 1982 and 1991 the revised version of this statistic has declined gradually from 41% to 27%. The annual prevalence of such behaviors (Figure 7), which had risen 9% between 1976 and 1981, leveled in 1982, and then dropped back slightly in each subsequent year to 16% in 1991. But the current (or 30-day) prevalence figures actually began to drop a year earlier—in 1982—and have shown the largest proportional drop (as may be seen in Figure 8 and in Table 13).
- Most of the earlier rise in *other illicit drug use* appeared to be due to the increasing popularity of cocaine with this age group between 1976 and 1979, and then due to the increasing use of stimulants between 1979 and 1982. (As stated earlier, we believe that the upward shift in stimulant use was exaggerated because some respondents included instances of using over-the-counter stimulants in their reports of amphetamine use.)
- Although the overall proportion using illicit drugs other than marijuana has changed rather gradually during recent years, greater fluctuations have occurred for specific drugs within the class. (See Tables 11, 12, and 13 for trends in lifetime, annual, and monthly prevalence figures for each class of drugs.)
- From 1976 to 1979 *cocaine* exhibited a substantial increase in popularity, with annual prevalence going from 6% in the class of 1976 to 12% in the class of 1979—a two-fold increase in just three years. For the nation as a whole, we judge there to have been little or no change in any of the cocaine prevalence statistics for this age

TABLE 15
Trends in Lifetime, Annual, and Thirty-Day Prevalence in an Index of Illicit Drug Use
 (Based on Original and Adjusted Amphetamine Questions)^a

	Percent reporting use in lifetime												'90-'91 change							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986		Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991		
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	16200	15000	15000		
Marijuana Only Adjusted Version	19.0	22.9	25.8	27.6	27.7	26.7	22.8	20.8	19.7	23.3	22.5	21.3	20.9	19.9	20.8	21.4	19.5	18.5	17.2	-1.3
Any Illicit Drug Other Than Marijuana Adjusted Version	36.2	35.4	35.8	36.5	37.4	38.7	42.8	45.0	44.4	41.1	40.4	40.3	39.7	37.7	35.8	32.5	31.4	29.4	26.9	-2.5 ^{ss}
Total: Any Illicit Drug Use Adjusted Version	55.2	58.3	61.6	64.1	65.1	65.4	65.6	65.8	64.1	64.4	62.9	61.6	60.6	57.6	56.6	53.9	50.9	47.9	44.1	-3.8 ^{ss}
	Percent reporting use in last twelve months																			
Marijuana Only Adjusted Version	18.8	22.7	25.1	26.7	26.0	22.7	18.1	17.0	16.6	19.3	19.0	17.8	18.9	18.4	17.6	17.4	15.4	14.6	13.2	-1.4
Any Illicit Drug Other Than Marijuana Adjusted Version	26.2	25.4	26.0	27.1	28.2	30.4	34.0	33.8	32.5	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	-1.7 ^{ss}
Total: Any Illicit Drug Use Adjusted Version	45.0	48.1	51.1	53.8	54.2	53.1	52.1	50.8	49.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	-3.1 ^{ss}
	Percent reporting use in last thirty days																			
Marijuana Only Adjusted Version	15.3	20.3	22.4	23.8	22.2	18.8	15.2	14.3	14.0	15.5	15.1	14.1	14.8	13.9	13.1	11.3	10.6	9.2	9.3	+0.1
Any Illicit Drug Other Than Marijuana Adjusted Version	15.4	13.9	15.2	15.1	16.8	18.4	21.7	19.2	18.4	17.0	15.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0	7.1	-0.9 ^{ss}
Total: Any Illicit Drug Use Adjusted Version	30.7	34.2	37.6	38.9	38.9	37.2	36.9	33.5	32.4	32.5	30.5	29.2	29.7	27.1	24.7	21.3	19.7	17.2	16.4	-0.8

NOTES: Level of significance of difference between the two most recent classes: $s = .05$, $ss = .01$, $sss = .001$.
^a Adjusted questions about stimulant use were introduced in 1982 to exclude more completely the inappropriate reporting of non-prescription stimulants.
^b Use of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

FIGURE 6
Trends in Lifetime Prevalence of an Illicit Drug Use Index
All Seniors



NOTES: Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

◁ shows the percentage which results if non-prescription stimulants are excluded.

The dashed vertical line indicates that after 1983 the shaded and open bars are defined by using the amphetamine questions which were revised to exclude non-prescription stimulants from the definition of "illicit drugs."

group between 1979 and 1984. (Possible regional differences in trends will be discussed below.) In 1985, however, we reported statistically significant increases in annual and monthly use, with a leveling again in 1986. However, since 1986 both indicators of use have decreased substantially: annual use decreased from 12.7% in 1986 to 3.5% in 1991; monthly use decreased from 6.2% to 1.4% over the same period (more than a 75% drop). The reasons will be considered below in our discussion of seniors' attitudes and beliefs about cocaine.

- Use of *crack cocaine* was measured by only a single question in 1986, which was contained in one questionnaire form and asked only of those who reported any use of cocaine in the past 12 months. It simply asked if crack was one of the forms of cocaine they had used. It is thus an estimate of the annual prevalence of crack use.

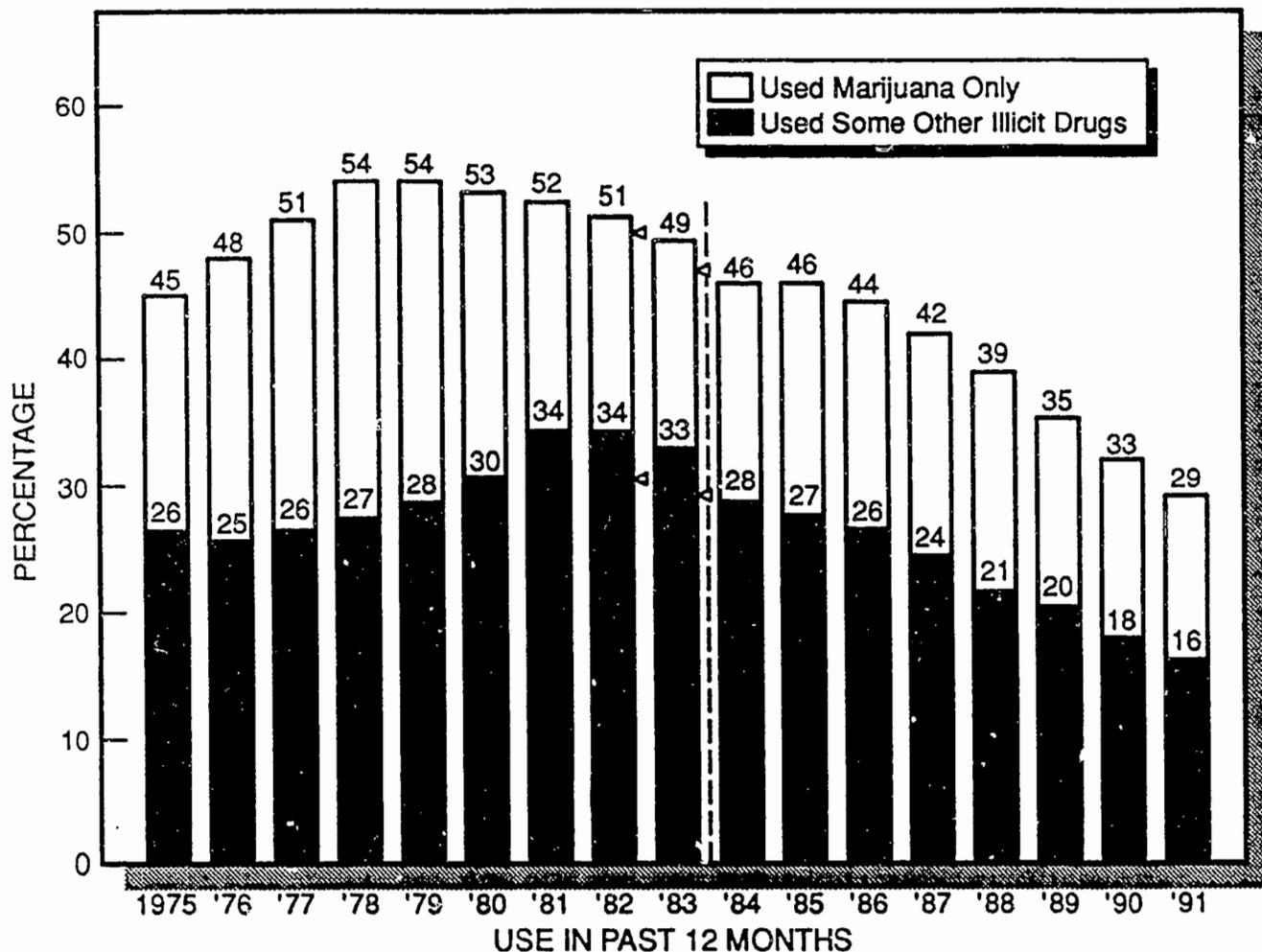
But other indicators that were gathered routinely in the study show some indirect evidence of the rapid spread of this form of the drug prior to 1986. For example, we found that (a) the proportion of seniors reporting that they smoked cocaine (as well as having used in the past year) more than doubled between 1983 and 1986 from 2.4% to 5.7%. (b) there was also a doubling in the same period (from 0.4% to 0.8%) in the proportion of all seniors who said that they both had used cocaine during the prior year and had at some time been unable to stop using when they tried to stop, and (c) there was a doubling between 1984 and 1986 in the proportion of seniors reporting active daily use of cocaine (from 0.2% to 0.4%). We think it likely that the advent of crack use during this period contributed to these statistics.

In 1987 we introduced into two questionnaire forms the standard set of three questions (about crack use) which are used for all other classes of drugs reported here, and which ask separately about frequency of use in lifetime, past 12 months, and past 30 days. We added this set of questions about crack use to the other four forms beginning in 1990.

- The annual *crack* prevalence measured by the 1986 question was 4.1%; this figure declined to 3.9% in 1987, 3.1% in 1988 and 1989, and in 1991 was down to 1.5%. In other words, the annual prevalence for crack has fallen by about 60% since 1986. Lifetime prevalence rates were 5.4% in 1987 (the first year this measure was available) and now is down significantly to 3.1% in 1991. The figures for 30-day prevalence are 1.3% in 1987, 1.6% in 1988, and 0.7% in 1991.
- It is important to note that *crack* use may be disproportionately located in the out-of-school population relative to most other drugs. (The same is likely true for PCP and heroin, as well.) Whether similar trends are taking place in that population remains an open

FIGURE 7

Trends in Annual Prevalence of an Illicit Drug Use Index
All Seniors



NOTES: Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

< shows the percentage which results if non-prescription stimulants are excluded.

The dashed vertical line indicates that after 1983 the shaded and open bars are defined by using the amphetamine questions which were revised to exclude non-prescription stimulants from the definition of "illicit drugs."

question. In general, it would seem likely that the trends there would parallel those seen in the majority of the population the same age, but one could imagine exceptions.

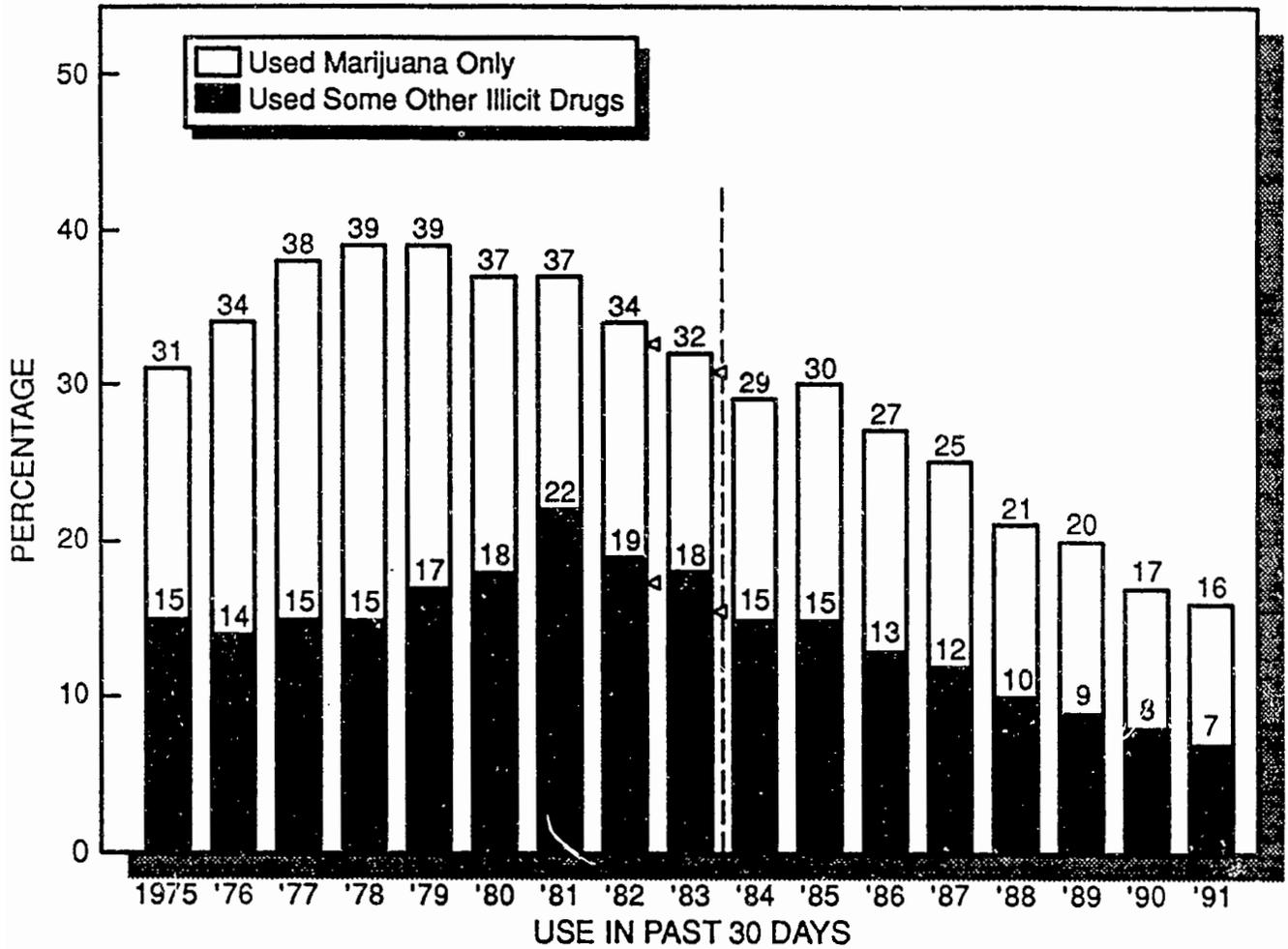
- Like cocaine use, *inhalant* use had been rising steadily in the late 1970's, though more slowly. Annual prevalence (in the unadjusted version) rose from 3.0% in 1976 and reached a peak of 5.4% in 1979. Starting in 1979 an adjustment was introduced for the underreporting of nitrite inhalants. Between 1979 and 1983, there was some overall decline in this adjusted version—in part due to a substantial drop in the use of the *amyl and butyl nitrites*, for which annual prevalence declined from 6.5% in 1979 to 3.6% in 1983. Both measures increased modestly between 1983 and 1986, with annual use for inhalants (adjusted for use of nitrites) increasing from 6.2% in 1983 to 8.9% in 1986, and the use of nitrites increasing less, from 3.6% to 4.7%.

Since 1986, there has been a slight decline in inhalant use (adjusted), with annual prevalence falling from 8.9% in 1986 to 7.0% in 1991, but a larger decline in nitrite use (from 4.7% to 1.0%). The gradual convergence of the unadjusted and adjusted inhalant prevalence rates seen in Figure 9b, suggests that the number of seniors who use nitrites, but do not report themselves as inhalant users on the general question, has diminished considerably, as would be expected in light of the overall decline in nitrite use.

- *Stimulant* (amphetamine) use, which had remained relatively unchanged between 1975 and 1978, began to show evidence of a gradual increase in use in 1979, with even greater increases to occur in 1980 and 1981. Between 1976 and 1981, reported annual prevalence rose by a full 10% (from 16% in 1976 to 26% in 1981); and daily use tripled, from 0.4% in 1976 to 1.2% in 1981. As stated earlier, we think these increases were exaggerated—perhaps sharply exaggerated—by respondents in the 1980 and 1981 surveys in particular including nonamphetamine, over-the-counter diet pills (as well as “look-alike” and “sound-alike” pills) in their answers. In 1982, we added new versions of the questions on amphetamine use, which were more explicit in instructing respondents not to include such nonprescription pills. (These were added to only three of the five forms of the questionnaire being used; the amphetamine questions were left unchanged in the other two forms until 1984.) As a result, Tables 11 through 15 give two estimates for amphetamines: one is based on the unchanged questions, which provides comparable data across time for longer-term *trend*

FIGURE 8

Trends in Thirty-Day Prevalence of an Illicit Drug Use Index
All Seniors



NOTES: Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

◁ shows the percentage which results if non-prescription stimulants are excluded.

The dashed vertical line indicates that after 1983 the shaded and open bars are defined by using the amphetamine questions which were revised to exclude non-prescription stimulants from the definition of "illicit drugs."

estimates; the second (adjusted) estimate, based on the revised questions, provides our best assessments of current prevalence and recent trends in true amphetamine use.¹⁵

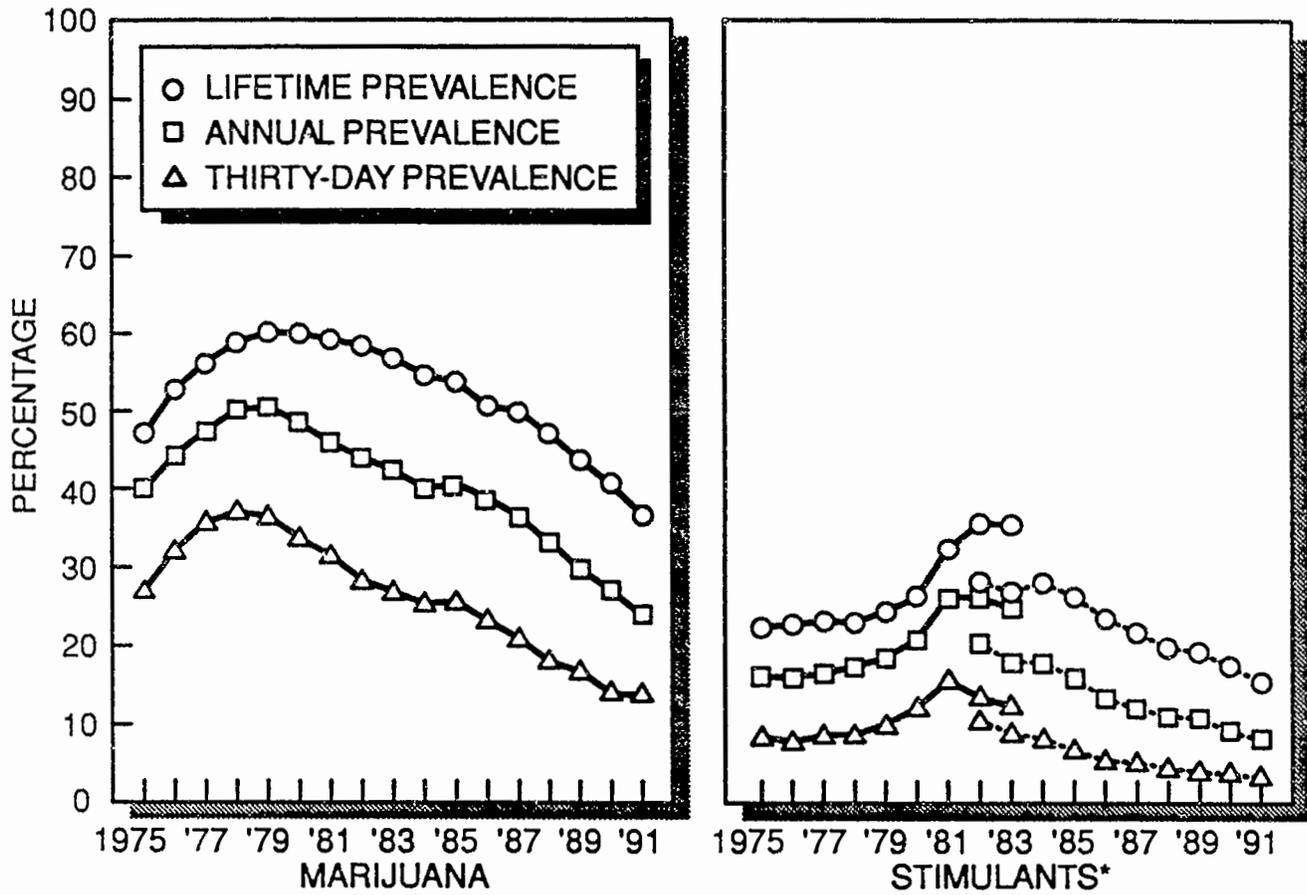
As can be seen in 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted showed a modest amount of overreporting. Both types of statistics, however, suggest that a downturn in the current use of stimulants began to occur in 1982 and has continued since. For example, between 1982 and 1991 the annual prevalence for amphetamines (adjusted) fell by six-tenths from 20% to 8%. Current use also fell by more than half. Still, in the class of 1991 about one-seventh of all seniors (15.4%) have tried amphetamines (adjusted), even though the decline continues.

- For *sedatives* the sustained, gradual decline between 1975 and 1979 halted in 1980 and 1981. For example, annual prevalence, which dropped steadily from 11.7% in 1975 to 9.9% in 1979, increased slightly to 10.5% by 1981. In 1982, though, the longer-term decline resumed again and annual prevalence has now fallen to 3.6%. No change was observed in 1991. In sum, annual sedative use has dropped by two-thirds since the study began in 1975. But, the overall trend lines for sedatives mask differential trends occurring for the two components of the measure (see Figure 9c). *Barbiturate* use declined rather steadily between 1975 and 1987 before leveling; annual prevalence (3.4%) is now less than one-third of the 1975 level (10.7%). *Methaqualone* use, on the other hand, rose sharply from 1978 until 1981. In fact, it was the only drug other than stimulants that was still rising in 1981. But in 1982, the use of methaqualone also began to decline, which accounted for the overall sedative category resuming its decline. Annual use now stands at less than one-fifteenth of its peak level observed by 1981 (0.5% in 1991 vs. 7.6% in 1981). This very low prevalence rate allowed us to drop the questions about methaqualone from five of the six forms beginning in 1990; the sedative prevalence estimates in the tables, being a combination of barbiturate and methaqualone prevalence, are thus based also on only one questionnaire form since 1990.
- The usage statistics for *tranquilizers* (Figure 9b) peaked in 1977, and have declined fairly steadily since then. Lifetime prevalence has dropped by more than half (from 18% in 1977 to 7% in 1991), annual prevalence by more than two-thirds (from 11% to 3.6%), and 30-day prevalence by three-fourths (from 4.6% to 1.4%).

¹⁵We think the unadjusted estimates for the earliest years of the survey were probably little affected by the improper inclusion of nonprescription stimulants since sales of the latter did not burgeon until after the 1979 data collection.

FIGURE 9a

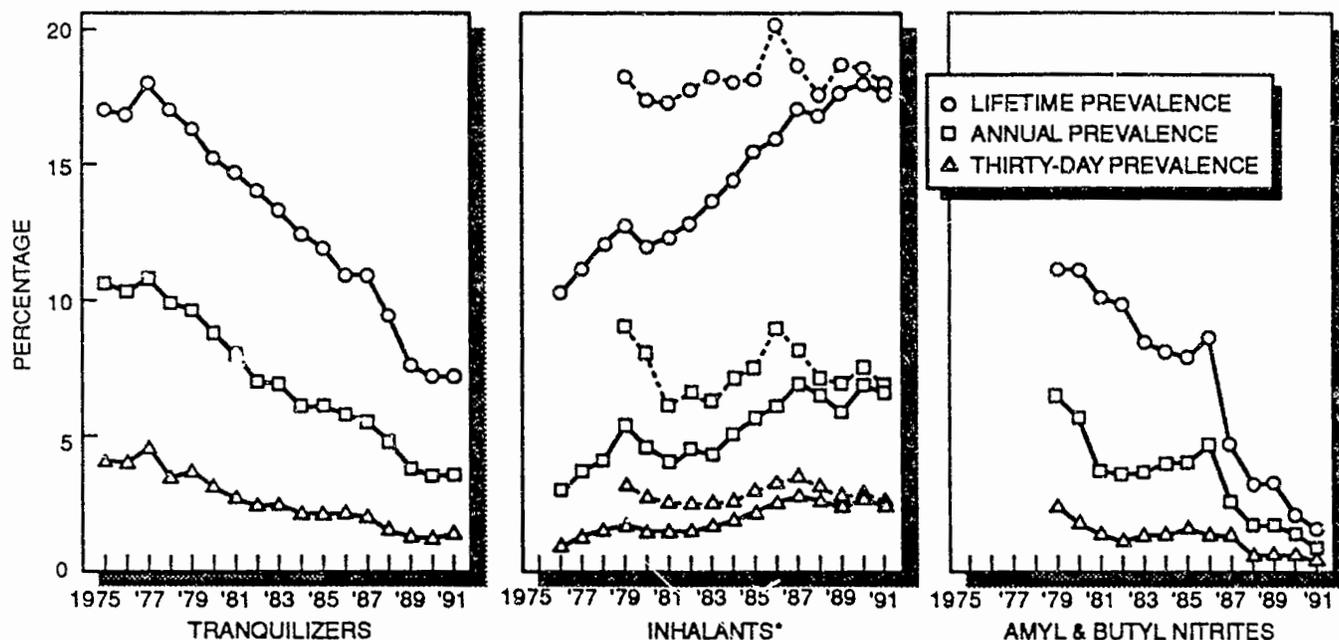
Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors



*The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 9b

Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors



*The dotted lines connect percentages which are adjusted for underreporting of amyl and butyl nitrites.

FIGURE 9c

Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors

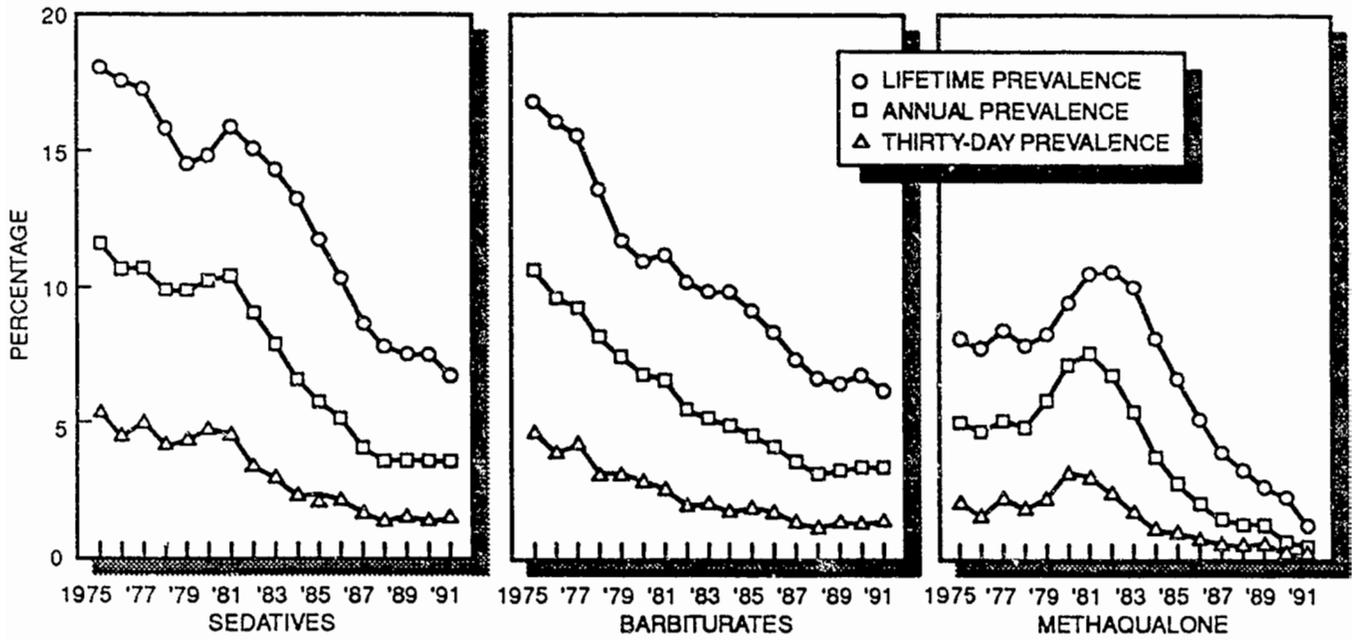
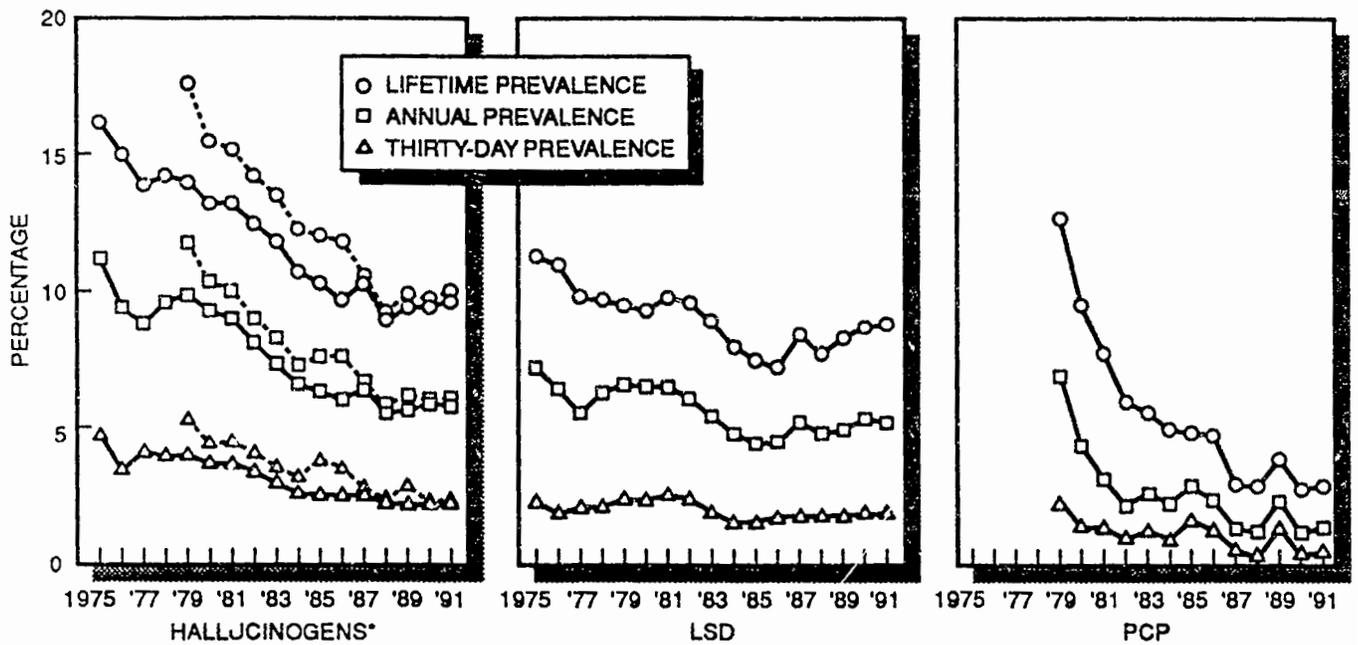


FIGURE 9d

Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors



*The dotted lines connect percentages which are adjusted for underreporting of PCP.

FIGURE 9e

Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors

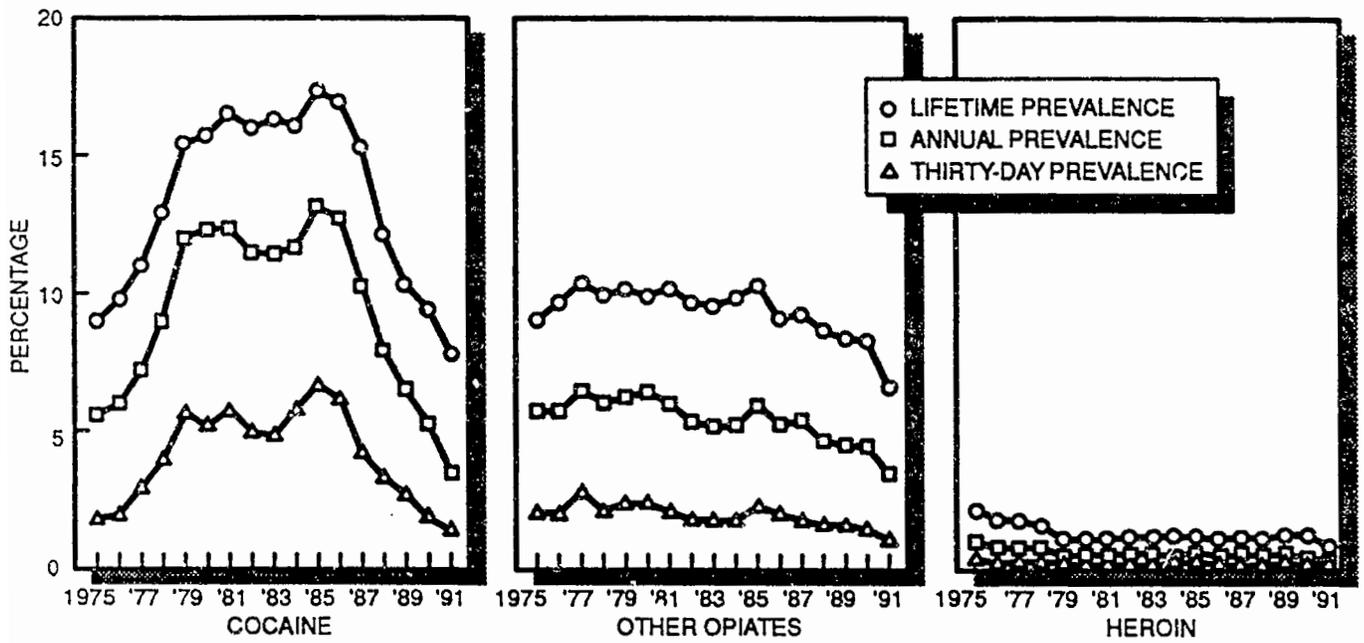


FIGURE 9f

Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors

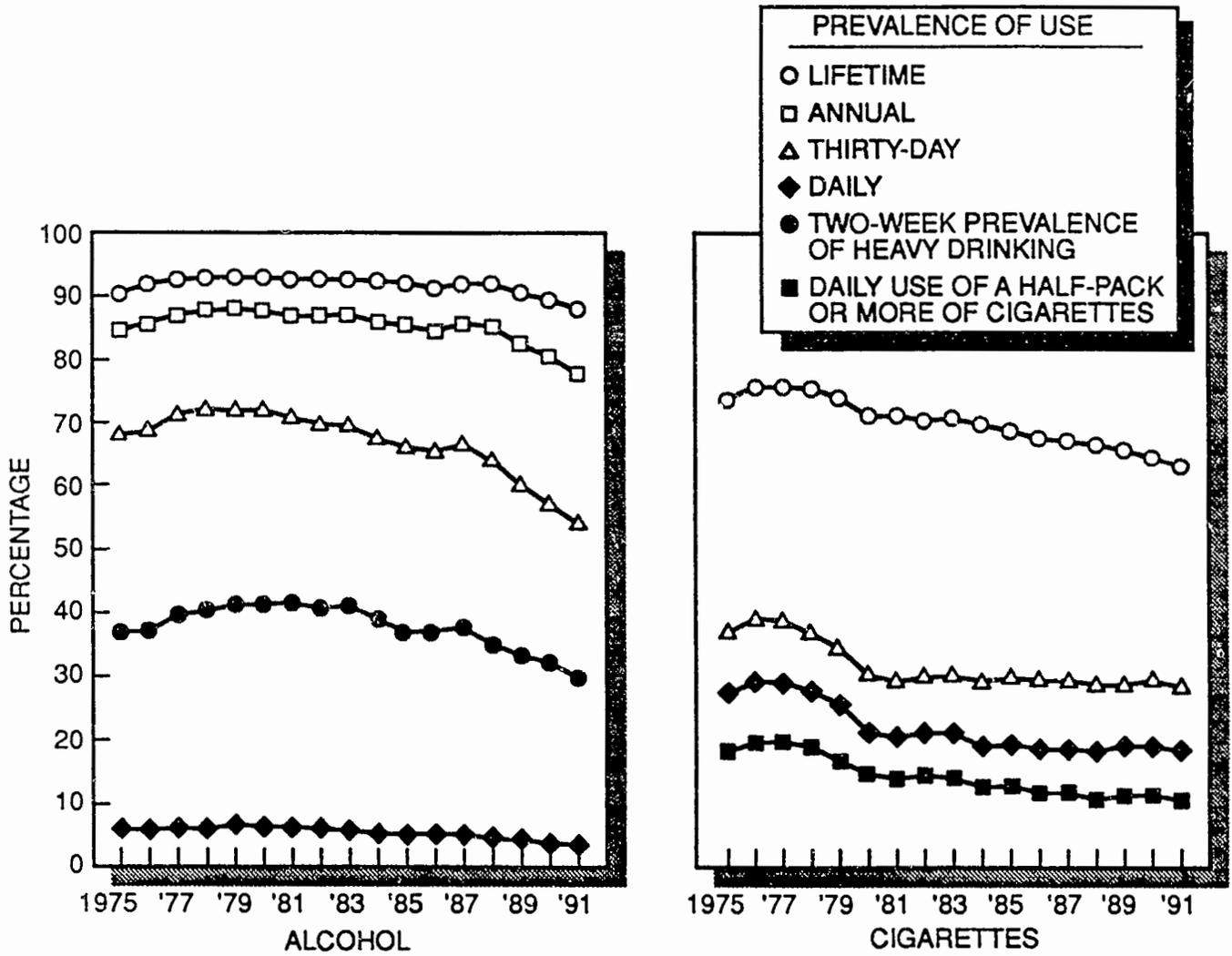
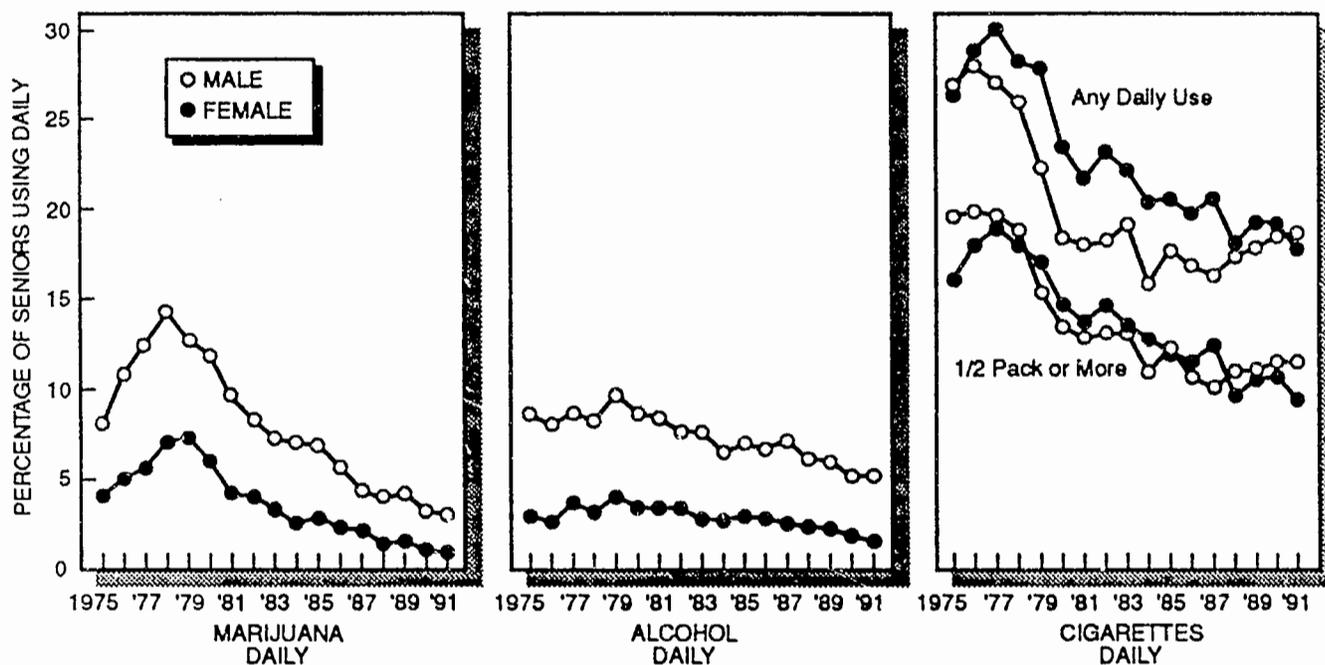


FIGURE 10

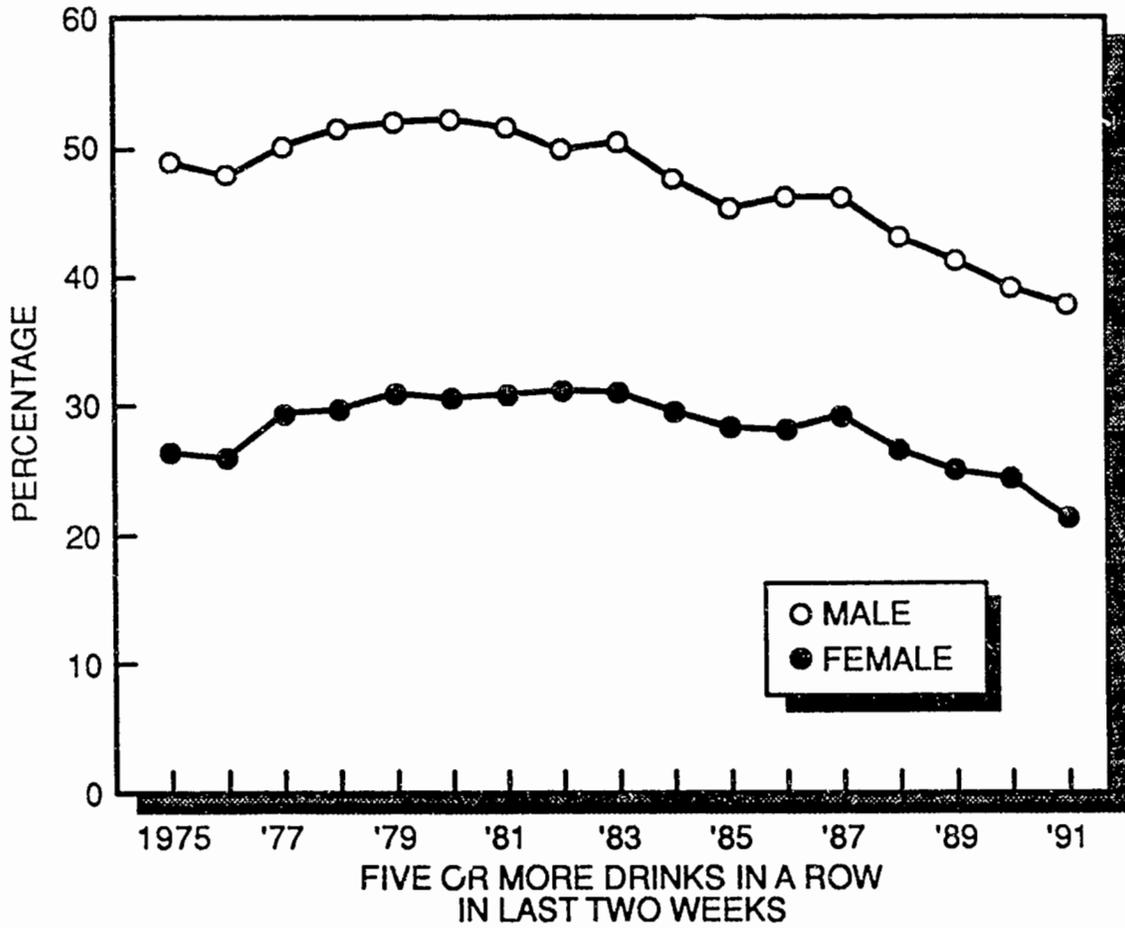
Trends in Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes by Sex



NOTE: Daily use for alcohol and marijuana is defined as use on 20 or more occasions in the past thirty days. Daily use of cigarettes is defined as smoking one or more cigarettes per day in the past thirty days.

FIGURE 11

Trends in Two-Week Prevalence of Heavy Drinking Among Seniors
by Sex



- Between 1975 and 1979 the prevalence of *heroin* use had been dropping rather steadily (Figure 9e). Lifetime prevalence dropped from 2.2% in 1975 to 1.1% in 1979 and annual prevalence also had dropped by half, from 1.0% in 1975 to 0.5% in 1979. This decline halted in 1980 and the statistics have remained almost constant for a decade (through 1990). In 1991, lifetime prevalence fell significantly from 1.3% in 1990 to 0.9% in 1991, though the annual and 30-day statistics did not.
- For a twelve-year interval the use of *opiates other than heroin* remained fairly stable, with annual prevalence fluctuating between 5.2% and 6.4%. Since 1988, there has been a steady decline, including a significant drop between annual use in 1990 (to 4.5%) and 1991 (to 3.5%).
- *Hallucinogen* use (unadjusted for underreporting of PCP) declined some in the middle of the seventies (from 11.2% in 1975 to 9.6% in 1978 on annual prevalence). (See Figure 9d.) It then leveled for several years before beginning another sustained decline. Between 1979, when the first figures adjusted for the underreporting of PCP were available, and 1984, there was a steady decline, with adjusted annual prevalence dropping from 11.8% in 1979 to 7.3% in 1984. The rate remained level through 1986 but then began dropping again, and stands at 6.1% in 1991—roughly half of what it was when the the study began in 1975.
- *LSD*, one of the major drugs comprising the hallucinogen class, showed a modest decline from 1975 to 1977, followed by considerable stability through 1981. Between 1981 and 1985, however, there was a second period of gradual decline, with annual prevalence falling from 6.5% in 1981 to 4.4% in 1985. Use has remained fairly level since 1985, with annual prevalence in 1991 at 5.2%.
- Prevalence statistics for the specific hallucinogen *PCP* have shown a very substantial decline since 1979 when we first measured the use of this drug. Annual prevalence dropped from 7.0% in the class of 1979 to 2.2% in the class of 1982. After leveling for a few years, it has since dropped further to reach 1.4% in 1991.
- As can be seen from these varied patterns for the several classes of illicit drugs, while the overall proportion of seniors using *any* illicit drugs in their lifetime other than marijuana has changed some over the years, the mix of drugs they are using has changed even more. A number of drug classes have shown dramatic declines, some have shown substantial declines, and some have remained fairly stable. Further, the periods in which they either increased or declined varied considerably for the different classes of drugs.

- Turning to the licit drugs, in the latter half of the 70's there was a small upward shift in the prevalence of *alcohol* use among seniors. (See Figure 9f.) To illustrate, between 1975 and 1979 the annual prevalence rate rose steadily from 85% to 88%, the monthly prevalence rose from 68% to 72%, and the daily prevalence rose from 5.7% to 6.9%. As with marijuana, 1979 was the peak year for use. Since 1979, there has been a slight decrease in lifetime prevalence (from 93% in 1979 to 88% in 1991), and some drop for the more current prevalence intervals: between 1979 and 1985, annual prevalence fell from 88% to 86%, monthly prevalence from 72% to 66%, and daily prevalence from 6.9% to 5.0%. (Clearly the change in daily use is the most important of these shifts.) They all remained fairly level from about 1985 to 1987, but since 1987 all rates have shown some further decline. Thirty-day prevalence, for example, fell from 66% to 54%, and is down by about one-fourth from its peak level in 1979 (72%) to 54% in 1991. Daily prevalence fell from 4.8% to 3.6% between 1987 and 1991, and is now down by almost one-half from its peak level in 1979 (6.9%).
- There was a similar pattern observed in the frequency of *occasional heavy drinking* (Figure 9f). When asked whether they had taken five or more drinks in a row during the prior two weeks, 37% of the seniors in 1975 said they had. This proportion rose gradually to 41% by 1979, where it remained through 1983. In both 1984 and 1985, we observed drops of 2% in this troublesome statistic, to 37%, exactly where it was in 1975; there was no further change in 1986 or 1987. Since 1987, however, it has dropped by another 8%, from 38% to 30% in 1991. This statistic, then, also has fallen by about one-fourth from its peak level.
- Thus, to answer a frequently asked question, there is no evidence that the drop in marijuana use observed in recent years is leading to a concomitant increase in alcohol use. If anything, there has been some parallel decline in annual, monthly and daily alcohol use as well as in occasional heavy drinking.
- As for *cigarette* use, 1976 and 1977 appear to have been the years of peak smoking rates in this age group, as measured by lifetime, 30-day, and daily prevalence. (Annual prevalence is not asked.) Over the four subsequent graduating classes, 30-day prevalence dropped substantially from 38% in the class of 1977 to 29% in the class of 1981. (See Tables 13 and 14 and Figure 9f.) More importantly, *daily cigarette use* dropped over that same interval from 29% to 20%, and daily use of half-pack-a-day or more from 19.4% to 13.5% between 1977 and 1981 (nearly a one-third decrease). In 1981 we reported that the decline appeared to be decelerating; in 1982 and 1983 it clearly had halted. There was a brief resumption of the earlier decline in 1984, with daily use falling from 21% to 19%, and daily use of half-pack-a-day dropping from 13.8% to 12.3%. Since 1984, there has been very little change in most of these statistics. In 1991 daily use still stands at 19%,

and half-pack-a-day use at 11%. What seems most noteworthy is the lack of appreciable decline in the smoking rates since the early 80's, despite (a) the general decline which has occurred for most other drugs (including alcohol), and (b) the considerable amount of restrictive legislation which has been debated and enacted at state and local levels in the past eight years.

TRENDS IN NONCONTINUATION RATES

Table 16 shows how the user noncontinuation rates observed for the various classes of drugs have changed over time. Recall that the noncontinuation rate, as used here, is defined as the percentage of those who ever used the drug but did not use in the year prior to the survey.

- For *most drugs* there has been relatively little change in noncontinuation rates among those who have tried the drug at least once. There are some noteworthy exceptions, however.
- *Marijuana* has shown some increase in the noncontinuation rates between 1979 (when it was 16%) and 1984 (when it was 27%). This is what gave rise to the greater drop in annual use than in lifetime use, described earlier. Between 1984 and 1987 there was no further increase, but since then the noncontinuation rate has risen further to 35%.
- The noncontinuation rate for *cocaine* decreased from 38% 1976 to 22% in 1979, corresponding to the period of increase in the overall prevalence of use. It then remained fairly stable through 1986, corresponding to a period of stability in the actual prevalence statistics. Since 1986, use has fallen substantially, reflecting in part a considerable increase in the rate of noncontinuation, which rose from 25% in 1986 to 55% in 1991, including a rise of 11 percentage points in 1991 alone.
- For *crack*, statistics exist only since 1987, but they also show a sharp rise in noncontinuation, from 28% in 1987 to 52% in 1991.
- There was considerably more noncontinuation of *stimulant* use in 1991 (47%) than in 1982 (when it was 27%), based on the revised usage questions. Earlier data (based on the unrevised questions), suggest that the change began after 1981.
- Much of the recent decline in *sedative* use is also accounted for by a changing rate of noncontinuation for the specific substances involved. For example, in the case of *barbiturates* the noncontinuation rate rose from 36% in 1979 to 45% in 1991.

Similarly, in 1980, 24% of the seniors who ever used *methaqualone* did not use in the prior year, whereas the comparable statistic by 1991 was more than twice as high (62%).

TABLE 16
Trends in Noncontinuation Rates
Twelfth Graders Who Ever Used Drug in Lifetime

	Percent who did not use in last twelve months																			
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991			
Marijuana/Haashish	15.4	15.7	15.6	15.2	15.9	19.1	22.5	24.5	25.8	27.1	25.1	23.8	27.7	29.9	32.3	33.7	34.9			
Inhalants Adjusted	NA	70.9	66.7	65.8	57.5	61.3	66.7	64.8	68.4	64.6	63.0	61.6	59.4	61.1	66.5	61.7	62.5			
Nitrites	NA	NA	NA	NA	NA	50.8	65.5	63.3	64.4	58.4	59.8	55.7	56.5	59.4	62.9	59.5	61.7			
Hallucinogens Adjusted	31.3	37.7	36.7	32.9	29.8	30.1	32.3	35.2	38.7	39.3	38.8	38.1	37.9	38.2	40.4	37.2	39.6			
LSD	36.3	41.8	43.9	35.1	30.5	30.1	33.7	36.5	39.3	41.3	41.3	37.5	38.1	37.7	41.0	37.9	40.9			
PCP	NA	NA	NA	NA	45.3	54.2	59.0	63.3	53.6	54.0	40.8	50.0	56.7	58.6	38.5	57.1	51.7			
Cocaine	37.8	38.1	33.3	30.2	22.1	21.7	24.8	28.1	29.6	28.0	24.3	24.9	32.2	34.7	26.9	43.6	57.1			
"Crack"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.8	35.4	34.0	45.7	11.6			
Heroin	54.5	55.6	55.6	50.0	54.5	54.5	54.5	50.0	50.0	61.6	50.0	54.5	58.3	54.5	53.8	61.5	55.6			
Other Opiates	36.7	40.6	37.9	39.4	38.6	35.7	41.6	44.8	45.7	46.4	42.2	42.2	42.4	46.5	47.0	45.8	47.0			
Stimulants Adjusted	27.4	30.1	29.1	25.3	24.4	21.2	19.3	26.7	30.5	NA										
Sedatives	35.7	39.5	37.9	38.1	32.2	30.9	34.4	40.1	45.1	50.4	50.8	50.0	52.9	52.6	50.0	NA	NA			
Barbiturates	36.7	40.7	40.4	40.9	36.4	38.2	41.6	46.6	47.5	50.5	50.0	50.0	51.4	52.2	49.2	50.0	45.2			
Methaqualone	37.0	39.7	38.8	38.0	28.9	24.2	28.3	36.4	46.5	54.2	58.2	59.6	62.5	60.6	51.9	69.6	61.5			
Tranquilizers	37.6	38.7	40.0	41.8	41.1	42.8	45.6	50.0	48.1	50.8	48.7	46.8	49.5	48.9	50.0	51.4	50.0			
Alcohol	6.2	6.7	5.9	5.8	5.3	5.7	6.0	6.5	5.7	7.1	7.2	7.4	7.0	7.3	8.8	9.9	11.7			
Cigarettes ^a	16.0	16.7	16.2	17.9	19.6	21.4	20.8	19.1	18.6	18.5	15.9	17.0	17.1	18.2	18.5	18.2	17.4			

^aPercentage of regular smokers (ever) who did not smoke at all in the last thirty days.

TABLE 17

Trends in Noncontinuation Rates Among Twelfth Graders Who Used Drug Ten or More Times in Lifetime

	Percent who did not use in last twelve months																
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	
Marijuana/Hashish	4.0	4.0	4.1	3.7	4.6	5.4	7.2	7.6	8.3	8.8	7.8	7.9	9.2	9.9	10.6	12.3	10.5
Inhalants	NA	48.9	42.6	34.6	23.8	25.2	23.8	27.2	23.1	23.4	25.8	15.3	21.1	21.5	25.9	24.0	23.7
Nitrites*																	
Hallucinogens	10.8	16.1	15.2	10.8	8.1	8.4	7.7	7.5	13.0	14.1	12.2	11.1	11.9	16.6	21.8	16.5	17.4
LSD PCP*	15.2	17.3	18.0	12.2	7.4	6.4	7.1	7.5	15.3	12.1	12.6	12.2	11.5	16.0	21.2	16.0	18.5
Cocaine	7.7	8.2	6.2	3.8	3.1	3.1	3.1	2.9	6.2	3.1	2.5	3.5	7.6	11.4	11.3	19.6	25.3
*Crack***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.4	2.1	5.2	26.2	31.1
Heroin*																	
Other Opiates	9.6	11.6	9.7	9.9	8.7	10.8	10.1	13.5	16.4	15.4	12.2	13.8	16.6	19.3	15.2	15.9	16.1
Stimulants Adjusted	8.0	9.8	7.6	7.4	6.1	4.1	4.4	6.4	7.5	NA	NA						
Sedatives	13.6	16.2	12.4	12.8	8.6	10.5	7.6	8.6	16.4	20.8	23.6	19.7	23.1	25.2	17.3	NA	NA
Barbiturates	13.4	16.5	12.9	13.5	11.2	11.7	8.9	12.6	17.7	22.8	20.6	19.7	20.7	23.4	18.0	19.8	19.7
Methaqualone	13.5	15.9	11.9	13.1	6.1	6.0	4.9	8.0	16.3	23.3	26.7	24.9	32.2	29.8	18.6	***	***
Tranquilizers	12.0	13.0	11.1	14.4	14.1	14.3	16.3	16.0	14.8	18.8	19.2	15.0	17.1	15.8	11.7	19.3	13.1
Alcohol	0.6	0.8	0.6	0.9	0.7	0.8	1.0	0.9	0.9	1.1	1.2	1.0	1.1	1.2	1.5	1.9	1.9

*The cell entries in these rows were omitted because they were based on fewer than 50 seniors who used ten or more times. All other cells contain more than 50 cases.

**Based on 85 cases in 1987, 54 cases in 1988, and 56 cases in 1989. Crack was included in all six questionnaire forms in 1990 and 1991.

***Based on too few cases in 1990 and 1991, because this question was asked in only one of the six questionnaire forms.

- *Tranquilizer* users showed a steady, gradual increase in noncontinuation between 1975 and 1982, as the rate rose from 38% to 50%. Since 1982 there has not been any further systematic change, however.
- Table 17 provides noncontinuation rates for seniors who were more established users—that is, for those who report having used the drug ten or more times in their life. It shows that noncontinuation is far less likely among such heavier users than among all users of a given drug. Further, while the trends in noncontinuation mentioned above for *marijuana*, *cocaine*, *stimulants*, *barbiturates*, *methaqualone*, and *tranquilizers* are all similar to trends observed in the noncontinuation rates for heavier users of those same drugs, the percentage fluctuations tend to be considerably smaller among the heavier users.
- Note that noncontinuation rates for experienced users of *inhalants* actually dropped in the late 70's, probably as a result of the nitrites—which are used at older ages than most of the other inhalants—coming onto the scene.
- Note also the sharp rise in the late 80's in the noncontinuation rates for *cocaine* and *crack*, even among the more experienced users.

COMPARISONS AMONG SUBGROUPS IN TRENDS IN PREVALENCE

Sex Differences in Trends

- Most of the sex differences mentioned earlier for individual classes of drugs have remained relatively unchanged over the past fifteen years—that is, any trends in overall use have been fairly parallel for both males and females. There are, however, some exceptions (tabular data not shown).
- The absolute differences between the sexes in *marijuana* use narrowed somewhat during the eighties from what they were in the seventies, although both sexes have seen a similar decline in use since about 1981.
- After 1977, the small sex difference involving *tranquilizer* use (males this age had used them less frequently than females) virtually disappeared.
- The sex differences in *cocaine* use were greatest in the peak years of use (1979-1986) and have diminished considerably during the decline phase. Although the differences have lessened, males still use more frequently than females. Both sexes showed a decline in

crack use since 1986, the first year for which data are available. Males continue to have higher rates and the difference has not narrowed.

- Regarding **stimulant** use, a sex difference emerged in 1981 and 1982 using the original version of the question; but the revised question introduced in 1982 showed no sex difference, suggesting that over-the-counter diet pills accounted for higher use among females in those two years. Since 1982 females have shown slightly higher or equivalent rates of use of stimulant use due to their more frequent use of amphetamines for the purpose of weight loss. Both sexes have shown declines in use of stimulants since 1984.
- Sex differences in the use of **opiates other than heroin** have narrowed in recent years.
- While in the mid-70's females reported higher rates of **tranquilizer** use than males, the sexes have had nearly identical rates since 1978.
- An examination of the trends in the proportion of each sex using **any illicit drug** in the prior year (see Figure 12) shows that use among males rose between 1975 and 1978, and then declined steadily (from 59% in 1978 to 32% in 1991). Use among females peaked later (in 1981), increasing from 41% in 1975 to 51% in 1981 and then dropping through 1991 to 26%. However, if amphetamine use is deleted from the statistics, female use peaked earlier (in 1979) and then declined as well. Note that the earlier declines for both males and females were attributable largely to the declining marijuana use rates; the later drops were due to decreases in use of the other illicit drugs (primarily cocaine), in addition to marijuana.
- Regarding the apparent parity between the sexes in the levels and trends in the prevalence of use of **illicit drugs other than marijuana**, when amphetamine use is excluded from the calculations, somewhat differential levels emerge for males vs. females (males are higher), although the trends tend to remain fairly parallel. (See Figure 12.)
- The sex differences in **alcohol** use have narrowed slightly since 1975. For example, the sex differences in annual prevalence have been nearly eliminated. The 30-day prevalence rates for males and females differed by 12.8% in 1975 (75.0% vs. 62.2%, respectively), but that difference was down to 9.4% by 1991 (58.4% vs. 49.0%). And, although there still remain substantial sex differences in daily use and occasions of heavy drinking, there has been some narrowing of the differences there, as well (Figure 11). For example, between 1975 and 1991 the proportion of males admitting to

having five drinks in a row during the prior two weeks showed a net decrease of 11% from (49% to 38%), whereas females decreased by only 5% from 26% to 21%.¹⁶

- On one of the six questionnaire forms used in the study, respondents are asked separately about their use of beer, wine, and hard liquor. The answers to these questions reveal that it is primarily a differential rate of beer consumption that accounts for the large sex differences in occasions of heavy drinking: 37% of 1991 senior males report having five or more *beers* in a row during the prior two weeks vs. 20% of the females. Males are only somewhat more likely than females to report having 5 or more drinks of *hard liquor* (20% for males vs. 14% for females) and only slightly more likely to drink *wine* that heavily (7% for males and 5% for females). This pattern—a large sex difference in heavy use of beer, a smaller difference in heavy use of hard liquor, and very little difference in heavy use of wine—has been present throughout the study, with little systematic change over time. More recently questions on wine coolers were added; and here we find 10% of both males and females drinking five or more in a row in the past two weeks.
- In 1977 we observed that, for the first time, females caught up to males at the half-a-pack per day level of *cigarette smoking* (Figure 10 given earlier). Then, between 1977 and 1981, both sexes showed a decline in the prevalence of such smoking; but use among males dropped slightly more, resulting in a modest reversal of the sex differences. Since 1988 there has been practically no difference in smoking rates. An examination of Figure 10 shows that in 1991 slightly more males smoke at the half-a-pack per day level and that any daily smoking is as common among males (19%) as females (18%).

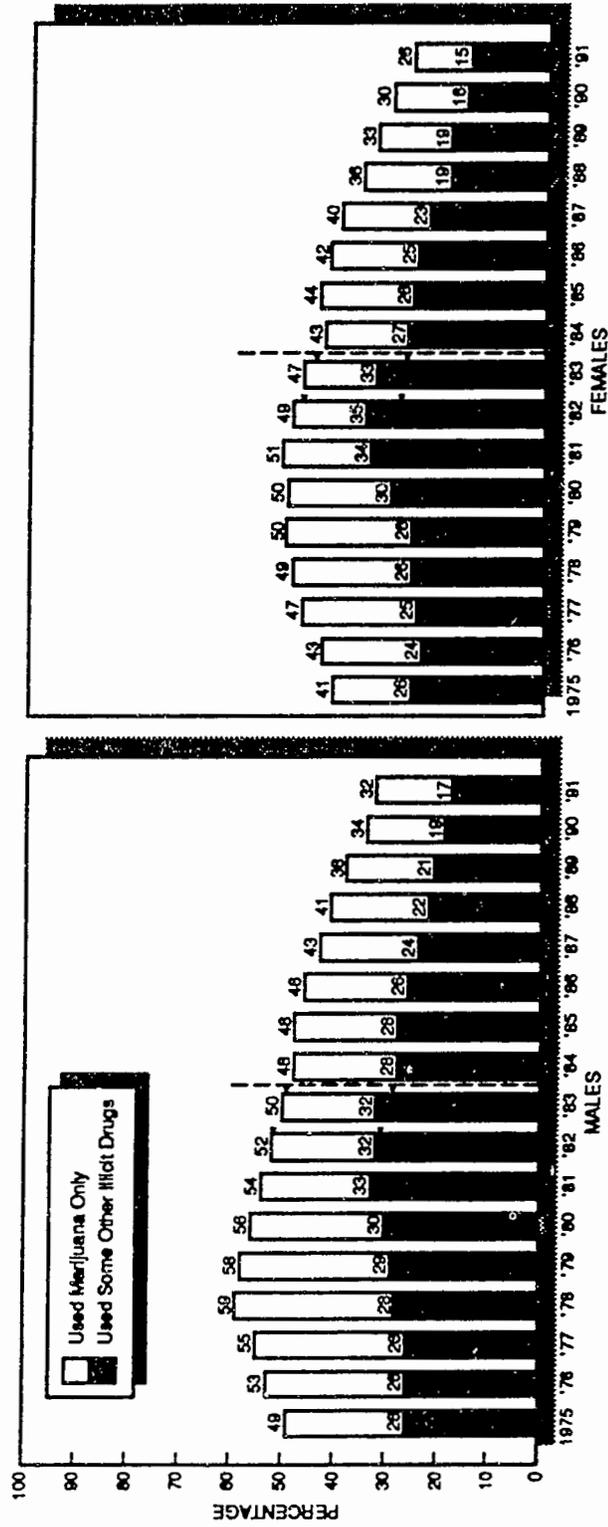
Trend Differences Related to College Plans

- Both college-bound and noncollege-bound students have been showing fairly parallel trends in overall *illicit drug use* over the last several years (see Figure 13).¹⁷
- Changes in use of the *specific drug classes* have also been generally quite parallel for the two groups since 1976, with only minor exceptions. (Data not shown.) Between 1983 and 1986 annual *cocaine* use increased very little among the college-bound,

¹⁶It is worth noting that the same number of drinks produces substantially greater impact on the blood alcohol level of the average female than the average male, because of sex differences in the metabolism of alcohol and body weight. Thus, sex differences in frequency of actually getting drunk may not be as great as the binge drinking statistics would indicate, since they are based on a fixed number of drinks.

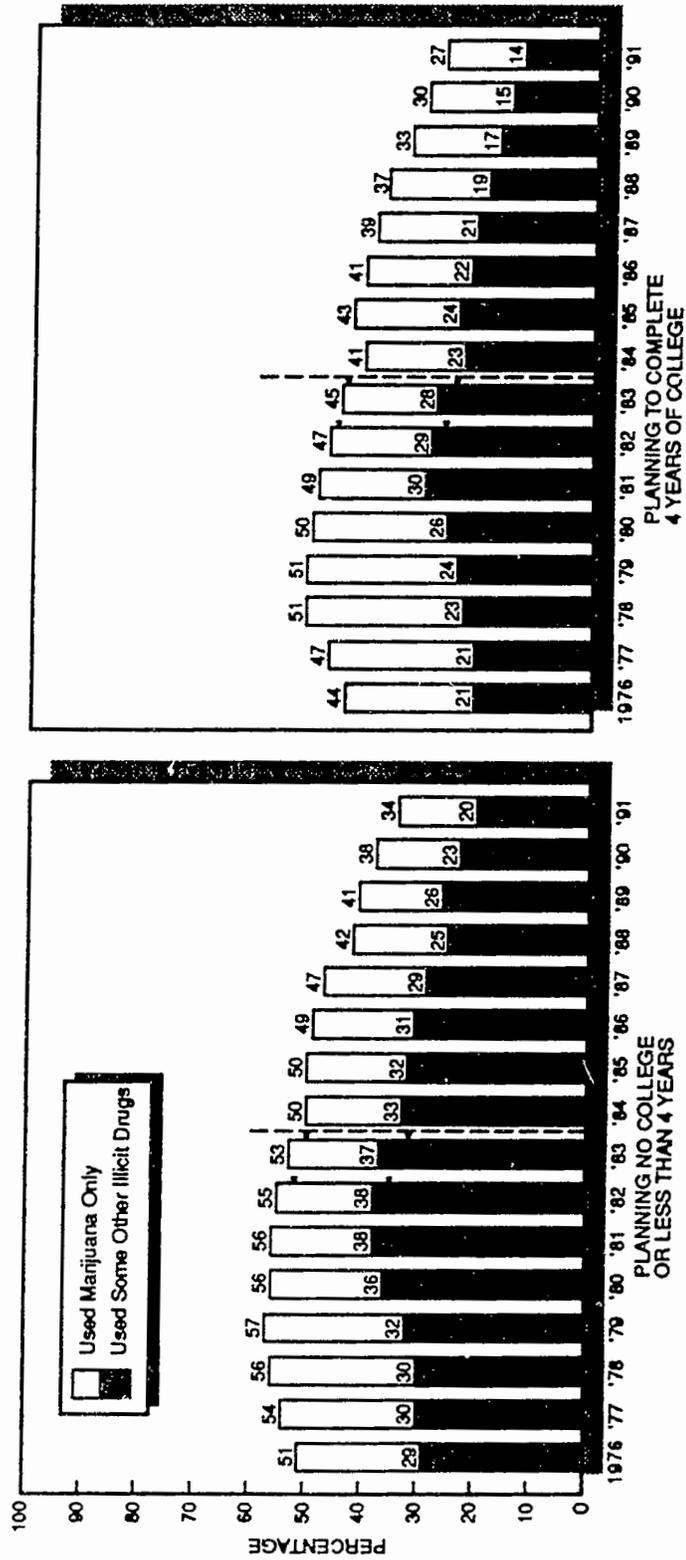
¹⁷Because of excessive missing data in 1975 on the variable measuring college plans, group comparisons are not presented for that year.

FIGURE 12
Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index
by Sex



NOTE: See Figure 8 for relevant footnotes.

FIGURE 13
Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index
by College Plans



NOTE: See Figure 8 for relevant footnotes.

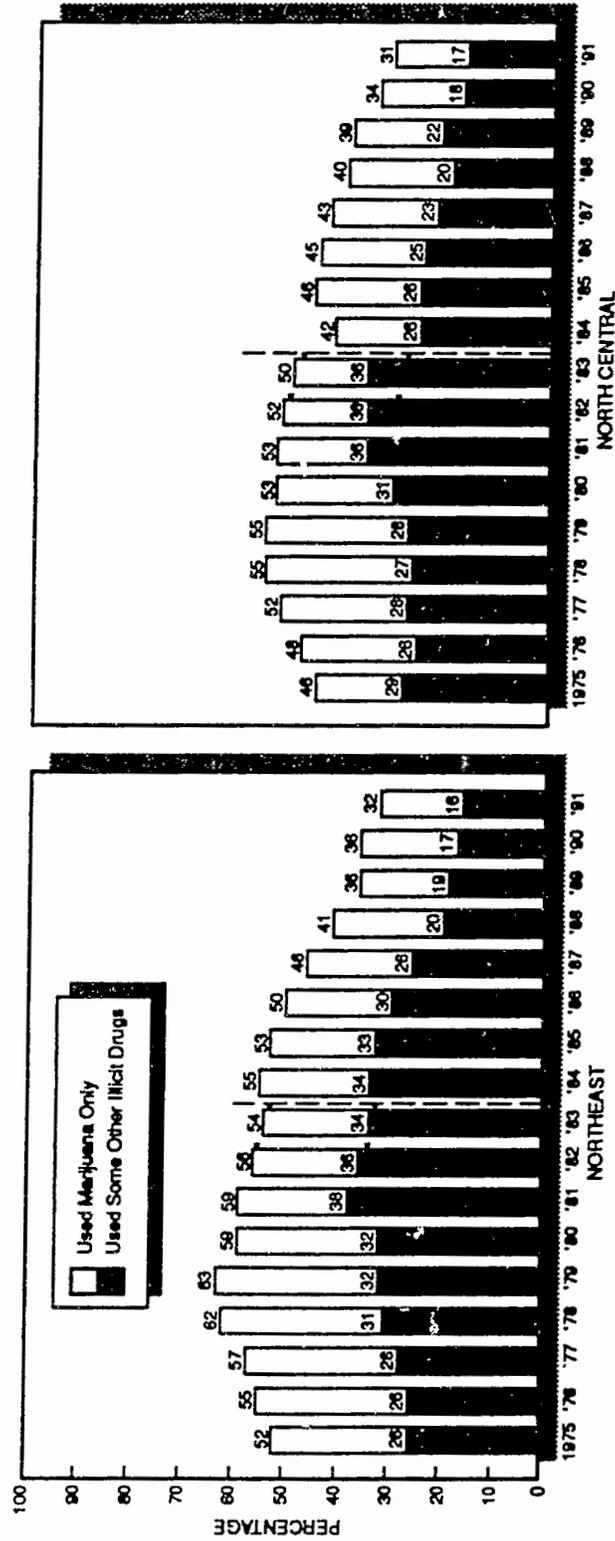
but rose by about one-quarter among the noncollege-bound, perhaps due to the greater popularity of crack among the noncollege-bound. Since 1986 both groups have shown large declines in use, and some convergence in their rates of use.

- In fact, as the overall prevalence of a number of drugs has fallen there has been some convergence of usage rates between the college bound and noncollege-bound, due to a greater drop among the latter group. This has been true for *tranquilizers*, *sedatives*, *meth-aqualone*, *nitrite inhalants*, *hallucinogens*, *LSD*, and *opiates other than heroin*.

Regional Differences in Trends

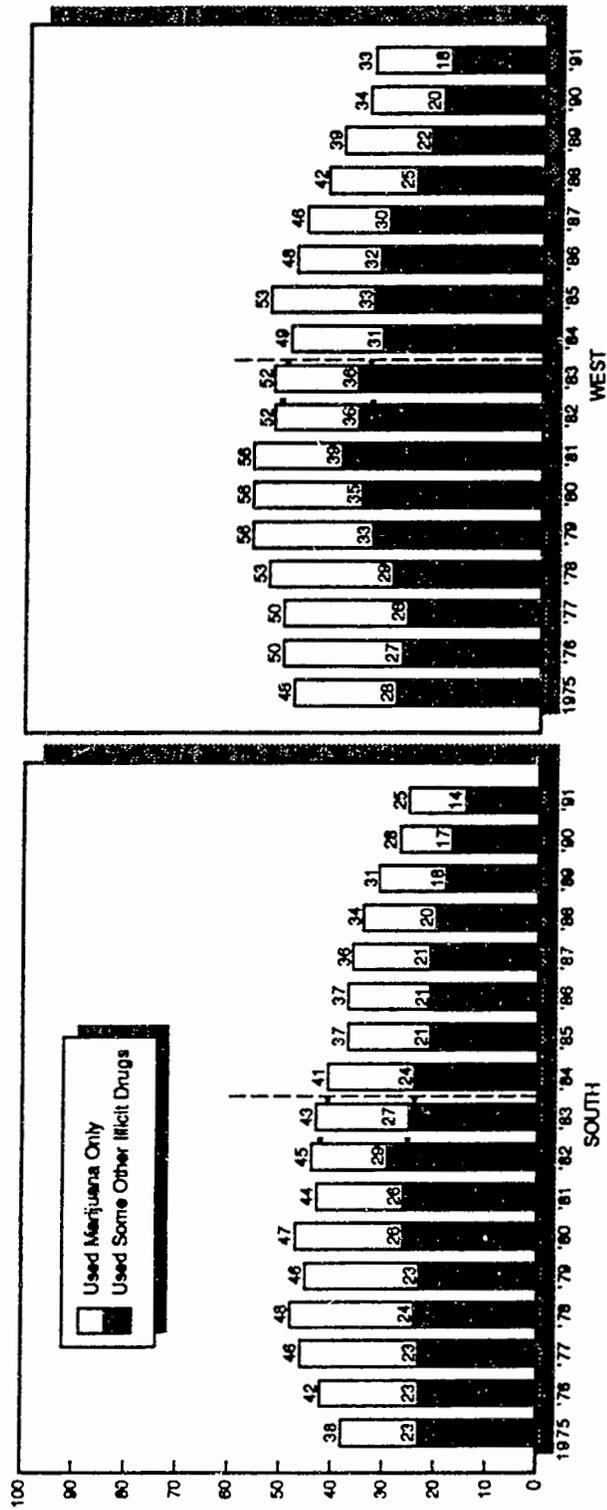
- In all four regions of the country proportions of seniors using *any illicit drug* during the year reached their peaks in 1978 or 1979 (Figure 14), and generally have been falling since then.
- As noted earlier, a major factor in the rise of *illicit drug use other than marijuana* had been an increase in reported *amphetamine* use. The rise in amphetamine use appeared in all four regions; however, the rise in lifetime prevalence from 1978 to 1981 was only 6% in the South, whereas in the other regions the percentages all had risen between 9% and 12%. In essence, the South has been least affected by both the rise and the fall in reported amphetamine use.
- Over the longer term, *cocaine* use has shown very different trends in the four regions of the country leading to the emergence of one of the largest regional differences observed for any of the drugs (see Figure 15 for differences in lifetime prevalence trends). In the mid-seventies, there was relatively little regional variation in cocaine use. As the nation's cocaine epidemic grew in the late seventies, large regional differences emerged, so that by 1981 annual use had roughly tripled in the West and Northeast, nearly doubled in the North Central, and increased "only" by about 30% in the South. After 1981, this pattern of large regional differences—with the annual prevalence being higher in the West and Northeast than in the South and North Central—has remained for about six years. However, a sharp decline in the Northeast since 1985, and in the West since 1987, reduced these regional differences very substantially.
- Since the peak years of usage (1986 and 1987) *crack* use dropped in all four regions but by far the most in the West and the Northeast, which started out considerably higher than the other regions. There is very little regional difference remaining today.
- Between 1975 and 1981, sizeable regional differences in *hallucinogen* use emerged, as use in the South dropped appreciably. In 1981, both the North Central and the West had annual rates

FIGURE 14
Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index
 by Region of the Country



NOTE: See Figure 8 for relevant footnotes.

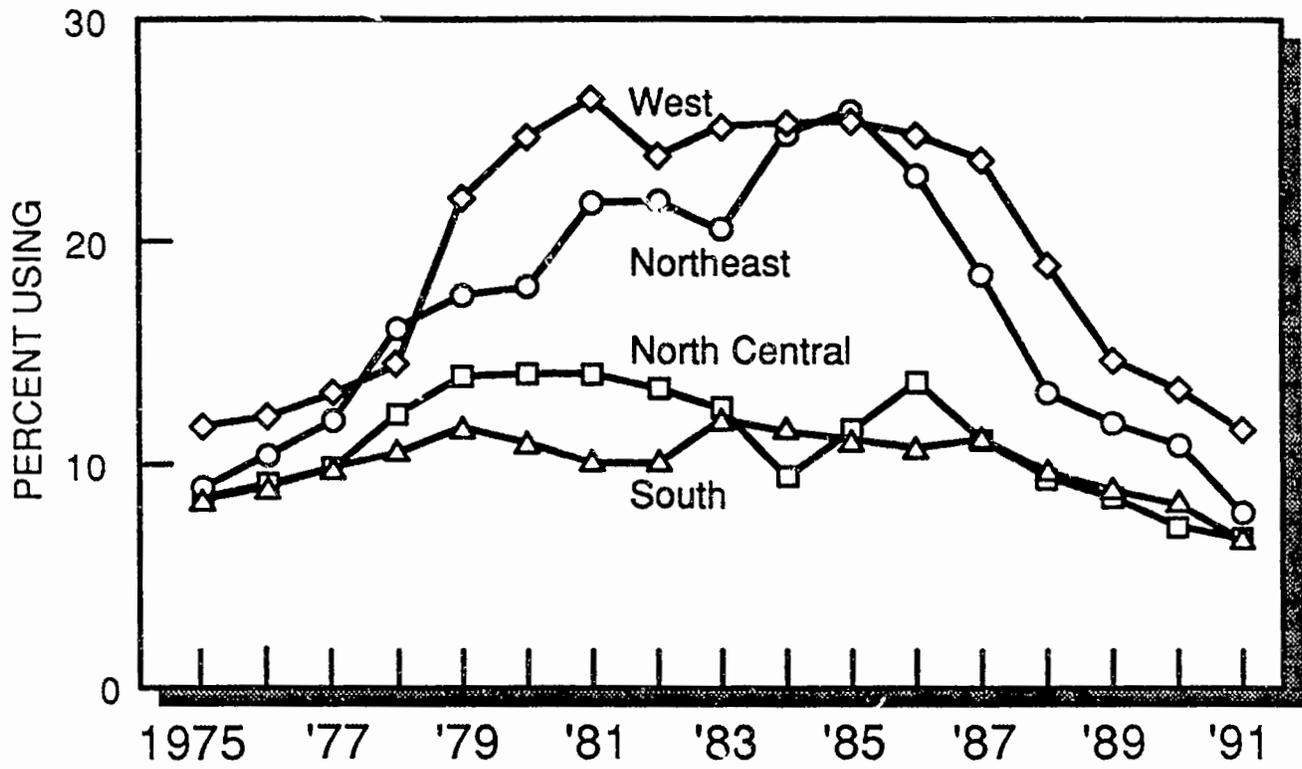
FIGURE 14 (cont.)
Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index
 by Region of the Country



NOTE: See Figure 8 for relevant footnotes.

FIGURE 15

Trends in Seniors' Lifetime Prevalence of Cocaine Use
by Region of the Country



that were about two and one-half times higher than the South (10.3%, 10.4%, and 4.1%, respectively), and the Northeast was three times as high (12.9%). After 1981, hallucinogen use dropped appreciably in all regions except the South, practically eliminating previous regional differences.

- Between 1979 and 1982, *PCP* use dropped precipitously in all regions, though the drop was greatest in the Northeast which in 1979 had a usage rate roughly double that of all the other regions. In general, PCP use has remained low (and without much regional difference).
- All four regions have shown a decline in current *alcohol* use and in occasions of *binge drinking* since the early 80's.

Trend Differences Related to Population Density

- There was a peaking in 1979 in the proportions using *any illicit drug* in all three levels of community size (Figure 16). Although the smaller metropolitan areas and the nonmetropolitan areas never caught up completely with their larger counterparts, they did narrow the gap some between 1975 and 1979. Most of that narrowing was due to changing levels of marijuana use, and most of it occurred prior to 1978.

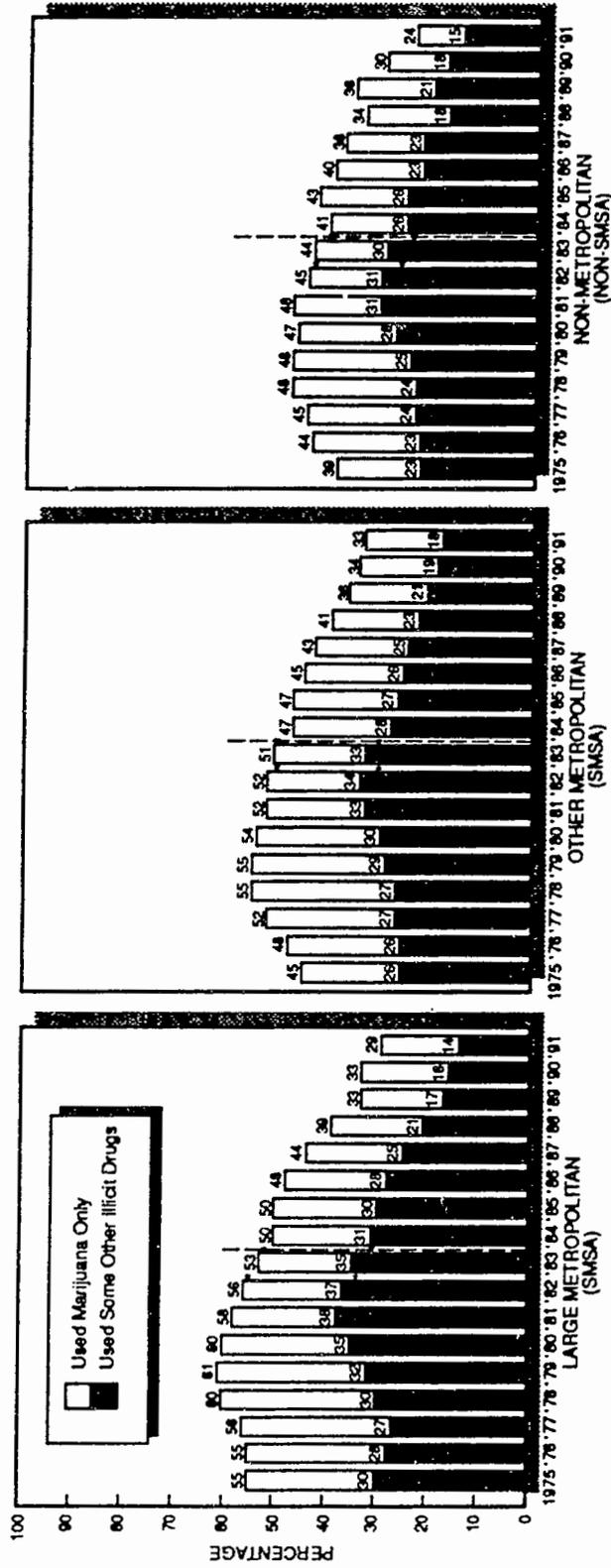
Since 1979, there had been a fairly steady decrease in all three community size strata—until 1985, when the metropolitan areas remained level and the nonmetropolitan areas showed a slight rise. Since then the declines have continued and, in fact, been sharpest in the large cities, which in 1991 actually showed lower prevalence rates than the smaller cities.

- The overall proportion involved in *illicit drugs other than marijuana* also has peaked in communities of all sizes in 1981 or 1982. Up to 1981, the proportions reporting the use of some illicit drug other than marijuana in the last 12 months had been increasing continuously (over a four-year period in the very large cities, and over a three-year period in the smaller metropolitan and nonmetropolitan areas). Almost all of this increase is attributable to the rise in reported amphetamine use (which likely is artifactual in part). Since 1983 there has been a fair-sized decline in all three groups in the use of illicit drugs other than marijuana—again largely attributable to changes in amphetamine use and later to changes in cocaine use. Again, in recent years the large metropolitan areas have shown lower rates than the other two strata—a reversal of earlier differences.

- For a number of the individual classes of drugs, there has emerged a narrowing of previous differences as they have been in a decline phase, much as there was an emergence of those differences during their incline phases. Figure 17 shows the trends for annual prevalence of alcohol, marijuana, and cocaine.
- The increase in *cocaine* use between 1976 and 1979, although dramatic at all levels of urbanicity, was clearly greatest in the large cities. Between 1980 and 1984, use was fairly stable in all groupings, and in 1985 they all showed a rise in annual prevalence, in 1986 they all stabilized again, and in 1987, began a decline that continues today. However, just as the earlier rise had been greatest in the large cities, so was the decline (see Figure 17). There are virtually no differences by urbanicity today in cocaine use among seniors.
- *Crack*, measured for the first time in 1986 (annual prevalence) or 1987 (lifetime prevalence), has shown the largest declines in the large cities. For example, lifetime prevalence in the large cities is down by 4.0% (from 6.6% in 1987 to 2.6% in 1991); in the smaller metropolitan areas, the decline is 1.5% (from 5.3% to 3.8%), and in the nonmetropolitan areas, the decline is 2.1% (from 4.6% to 2.5%).
- There is evidence of a decline in current *alcohol* use in the large cities in recent years—one which has narrowed the differences considerably. For example, 30-day prevalence in the large cities is down by 25 percentage points, from 78% in 1980 to 53% in 1991; during the same interval, the smaller metropolitan areas decreased 14 points (from 71% to 56%), and the nonmetropolitan areas dropped by 17 points (from 69% to 52%).
- Differences in *LSD* use related to community size were nearly eliminated by the mid-30's due to a greater amount of decrease in the large cities and other cities than in the nonmetropolitan areas, which started out lower. But, since 1986 differences have emerged again—this time with the smaller cities showing some increase in use which gives them the highest rate of *LSD* use. Until 1981, the large cities consistently had the highest rate of use.
- In the late 70's *PCP* use was correlated with community size, but since 1981, there has been no consistent relationship.
- *Marijuana* use also has shown a convergence among the three urbanicity groups by 1989 (Figure 17). Use has consistently been positively correlated with community size, with the differences being greatest in one of the peak years of usage, 1978. Since then both the absolute and proportional differences have been diminishing and the more urban areas have exhibited a greater decline.

FIGURE 16a

Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index by Population Density



NOTE: See Figure 8 for relevant footnotes.

FIGURE 16b

Trends in Seniors' Annual Prevalence of Alcohol, Marijuana, and Cocaine Use by Population Density

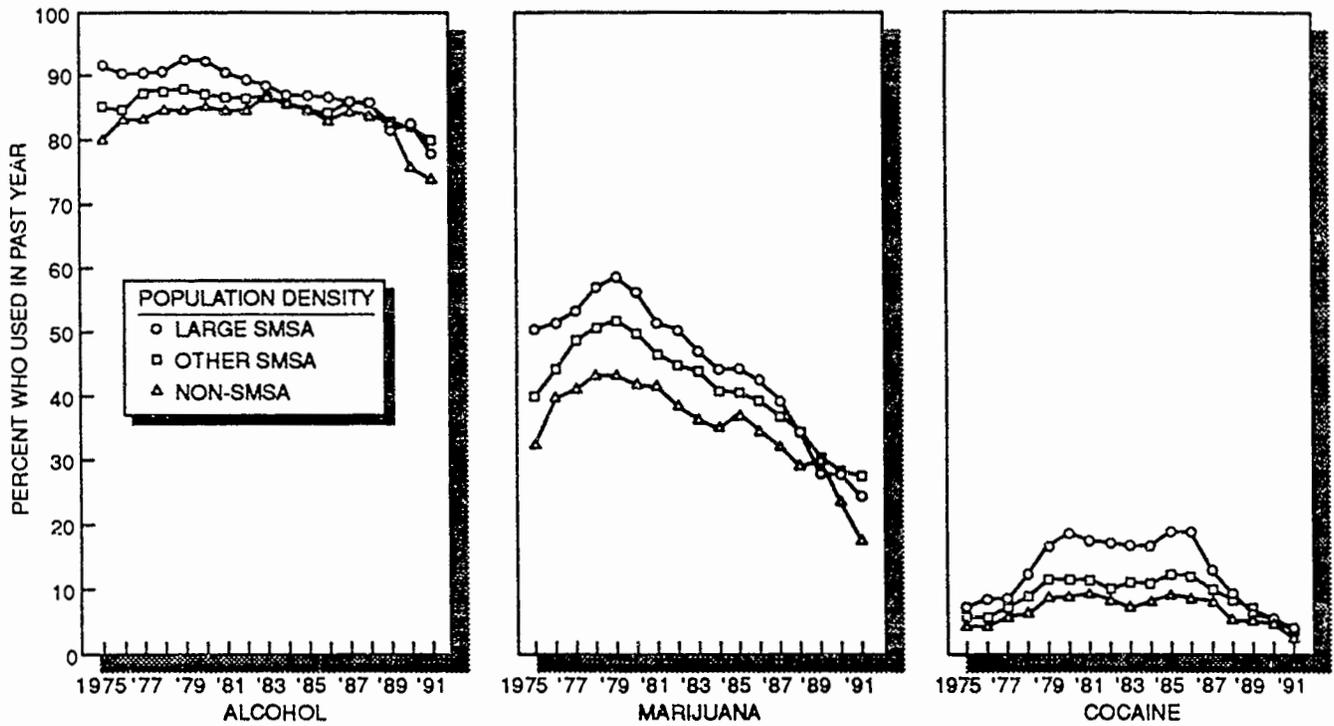
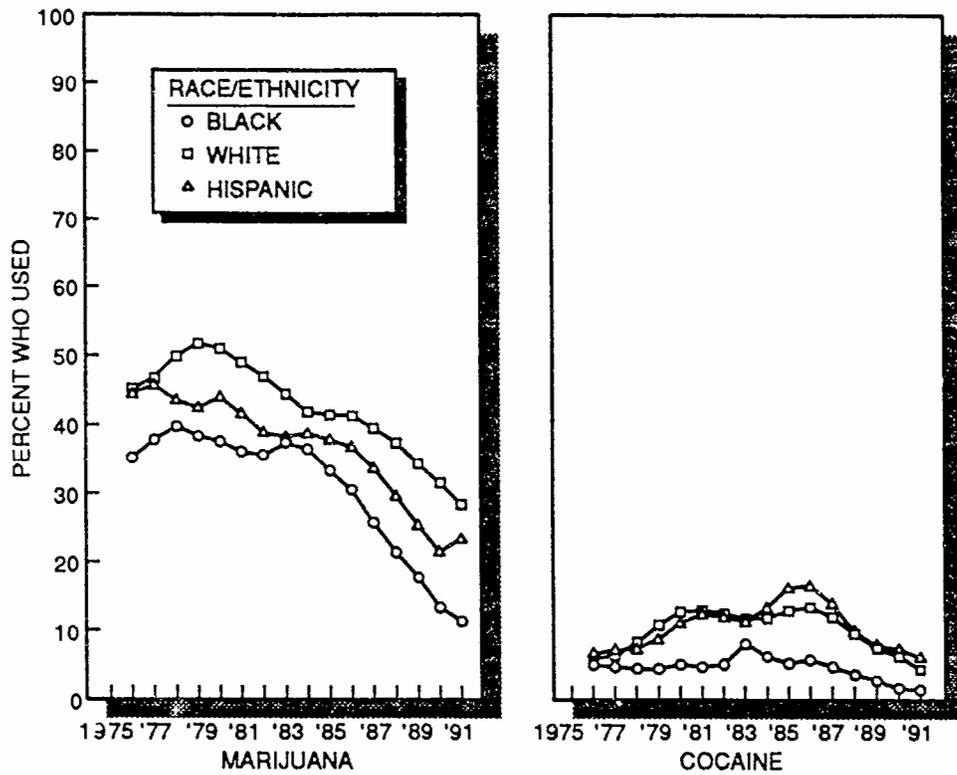


FIGURE 17a

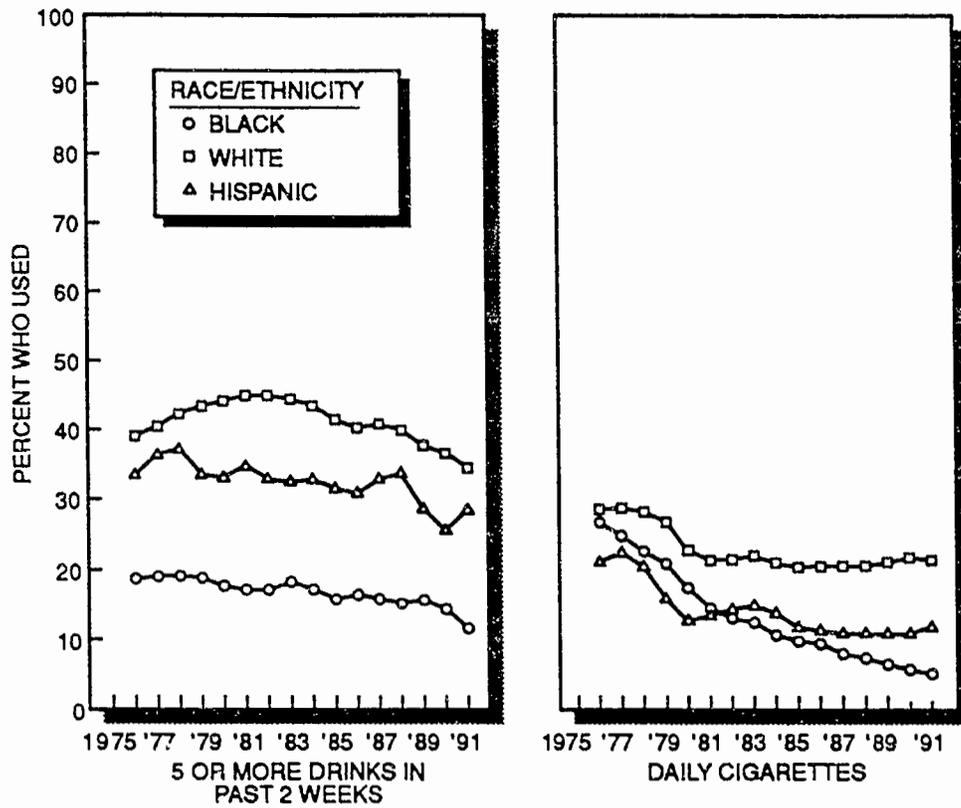
**Trends in Seniors' Annual Prevalence of
Marijuana and Cocaine Use
by Race/Ethnicity
(Two-year moving average*)**



*Each point plotted here is the mean of the specified year and the previous year.

FIGURE 17b

**Trends in Seniors' Prevalence of
5 or More Drinks in the Past 2 Weeks and Daily Use of Cigarettes
by Race/Ethnicity
(Two-year moving average*)**



*Each point plotted here is the mean of the specified year and the previous year.

- In the last half of the seventies, the use of *opiates other than heroin* was consistently highest in the large metropolitan areas and lowest in the nonmetropolitan areas. However, in recent years, there has been no consistent difference among these groups.
- The remaining drugs show little systematic variation in trends related to population density.

Racial/Ethnic Differences in Trends Among Seniors

While the three major racial/ethnic groups examined here—whites, blacks, and Hispanics—have quite different levels of use of some drugs, it appears that their use has trended in similar ways.¹⁸ Data have been examined for these three groups using two-year moving averages in annual prevalence in order to provide smoother and more reliable trend lines. They are derived from seniors, of course, since no trend data yet exist for lower grade levels.

- Figure 17a shows the trends in annual *marijuana* use for the three groups, and illustrates that they have generally moved in parallel—particularly during the long decline phase.
- Figure 17a shows the trends for annual *cocaine* use. It shows quite clearly that, among high school seniors at least, the rise in cocaine use occurred much more sharply among whites and Hispanics than among blacks. Also the decline among blacks appears to have begun earlier; but of perhaps greatest importance, all three groups have participated in the sustained decline since 1986 in the use of cocaine.
- The rise in reported *inhalant* use (unadjusted for the underreporting of nitrites) occurred about equally in whites and Hispanics from 1975–1985, whereupon whites kept rising and Hispanics leveled. By way of contrast, blacks started out with half the annual prevalence rate of the other two groups and did *not* show any increase over the next fifteen years, leaving their more recent usage rates at nearly a third that of whites.
- Most of the decline in the use of *stimulants*, which began in 1982, occurred among whites—primarily because Hispanics started out in 1982 at considerably lower levels and blacks at much lower levels. This decline has reduced the differences among these three groups.
- There has been a convergence among these three racial/ethnic groups in their use of *sedatives, barbiturates, methaqualone,* and *tranquilizers* as use of all of these drugs has declined. In

¹⁸A recent article looking at a larger set of ethnic groups used groupings of respondents from adjacent 5-year intervals to get more reliable estimates of trends. See Bachman, J.G., Wallace, J.M. Jr., O'Malley, P.M., Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health*, 81, 372–377.

general, whites consistently have had the highest usage rates in senior year, and also the largest declines; blacks have had the lowest rates, and therefore the smallest absolute declines.

- Most of the remaining illicit drugs have shown parallel trends for all three groups.
- Like most of the illicit drugs, the current *daily alcohol* rates are lowest for blacks. They have hardly changed at all during the life of the study. Whites and Hispanics have daily usage rates now which are about equivalent, although whites had higher rates in the period 1977–1985.

There are large racial/ethnic differences in *binge drinking* with blacks consistently having a rate below 20% (and now below 15%). In comparison, the rates for whites rose to a peak of around 45% in the early 80's before declining to under 40% a decade later (Figure 17b). Hispanics have been in the middle, and also have shown a gradual decline in use during the 80's.

- *Cigarette smoking* shows differential trends that are quite interesting. All three groups had daily smoking rates that were not dramatically different in the late 1970's. All three groups showed declines between 1977 and 1981, with the declines somewhat stronger for blacks and Hispanics, leaving whites with the highest smoking rates in 1981. Since then, blacks have shown a consistent and continuing decline, and now have a rate of smoking daily that is only about a quarter to a third what it is for whites, whose rate changed hardly at all between 1981 and 1991. The 1991 rate of daily smoking for Hispanics is down only slightly since 1981; thus, Hispanics, who used to have slightly lower rates than blacks, now have somewhat higher rates.

Chapter 6

USE AT EARLIER GRADE LEVELS

Knowing the age at which young people begin first use of the various drugs is important, especially because it provides a calendar for the planning of interventions in the school, the home, and the larger society. Any such intervention is likely to be considerably less effective in preventing drug use if it is administered after the ages of peak initiation. It also may be less effective if it substantially precedes this decision-making period. Not all drugs are begun at the same age; rather, a certain progression tends to occur, beginning with the drugs which are seen as least risky, deviant, or illegal, and progressing toward those that are more so.

Age of initiation has been ascertained from seniors by a set of questions which have been included in the study since its inception in 1975. The results have been used in this series of monographs to give a retrospective view of trends in lifetime prevalence at earlier grade levels. Because of the long time period these trends span, we continue to include here the series of figures based on seniors' responses, even though we now measure drug usage rates directly from eighth and tenth graders.

One would not necessarily expect today's eighth, tenth, and twelfth graders to all give the same retrospective prevalence rate for a drug (say by sixth grade), since there are a number of differences among them. These differences can be summarized as follows:

- (1) The lower grades still contain the eventual school dropouts, while twelfth grade does not. The lower grades also have lower absentee rates.
- (2) Each class cohort was in sixth grade in different years, so any secular trends in the use of a drug could contribute to differences in their reports of sixth grade experiences.
- (3) The 1991 eighth, tenth, and twelfth graders are in three different class cohorts, so any lasting cohort differences could contribute to a difference at any grade level, including sixth grade.

There are also two types of method artifacts which could explain observed differences in the retrospective reports of use by eighth, tenth, and twelfth graders:

- (4) Recall may be distorted for older respondents. For example, it could be that the longer the time period over which recall must occur, the later the age at which the initial event will be remembered.
- (5) The definition of the eligible event may change as a respondent gets older. Thus, an older student may be less likely to include an occasion of taking a sip from someone's beer as an occasion of

alcohol use, or an older student may be more likely to exclude (appropriately) an over-the-counter stimulant when reporting amphetamine use. While we attempt to ask the questions as clearly as possible, some of these drug definitions are fairly subtle, and may be more difficult for the younger students.

INCIDENCE OF USE BY GRADE LEVEL

Tables 18a through 18c give the retrospective initiation rates as reported by eighth, tenth, and twelfth graders, respectively. Obviously, the older students have a longer time for which they can report initiation. Table 18d puts together the retrospective initiation rates from all three sets of respondents in order to facilitate a comparison of reported initiation rates by particular grades.

- Eighth, tenth, and twelfth grade students all report very low usage rates (below 1%) by sixth grade for *hallucinogens*, *LSD* specifically, *cocaine*, and *heroin*. Fewer than 2% reported any use of *tranquilizers* and fewer than 3% any use of *stimulants*. *Marijuana* was tried by no more than 4% of youngsters by sixth grade. These findings are consistent with what we have been reporting in the past based on the retrospective data from twelfth graders, and gives us much greater confidence in those retrospective reports.
- Of the illicit drugs, only *inhalants* show very large differences by age of reporting. While only 2.6% of the twelfth graders report having used inhalants by sixth grade, a much higher 11.5% of the eighth graders report such use by sixth grade. Although any of the explanations offered above might explain these differences, we believe that early inhalant use may be associated with dropping out, and that the use of types of inhalants generally used at younger ages (glues, aerosols, butane) may actually be on the rise.
- *Alcohol* use by sixth grade is retrospectively reported by 38% of the 1991 eighth graders, but by only 12% of the 1991 twelfth graders. Several factors probably contribute to the difference. One is a secular trend in which initiation of alcohol use appears to be occurring earlier (see Figure 18r). Another is related to the issue of what is meant by "first use." The questions for all grades refer specifically to the first use of "an alcoholic beverage—more than just a few sips," but it is likely that the older students (12th grade) are more inclined to report only use that is not adult-approved, and not to count having two or three sips with parents or for religious purposes. Certainly, many more of the twelfth graders will have had a full drink or more. Younger students (8th grade) are less likely to have had a full drink or more, and may be more likely to report "first use" of a limited amount. Generally speaking, younger students tend to respond to questions in a more literal fashion, and this too may help account for the much higher proportion reporting use at an early age. Thus, the eighth grade data probably exag-

TABLE 18a

Incidence of Use for Various Types of Drugs, by Grade
Eighth Graders, 1991

(Entries are percentages)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Cocaine	Heroin	Stimulants	Tranquilizers	Alcohol	Getting Drunk	Cigarettes	Cigarettes (daily)
4th	0.9	4.7	0.2	0.2	0.2	0.1	0.6	0.4	12.7	1.8	11.0	0.5
5th	1.1	2.6	0.1	0.1	0.1	0.1	0.6	0.4	9.6	2.0	8.3	0.8
6th	2.1	4.2	0.6	0.4	0.4	0.2	1.5	0.8	16.1	5.2	10.9	1.7
7th	3.6	3.6	1.2	1.1	0.8	0.5	4.0	1.1	20.5	9.8	10.2	2.7
8th	2.6	2.6	1.0	1.0	0.7	0.2	3.8	1.1	11.2	7.8	3.7	1.5
Never used	89.8	82.4	96.8	97.3	97.7	98.8	89.5	96.2	29.9	73.3	56.0	92.8

NOTE: All drugs were asked about in both questionnaire forms except for the following: hallucinogens, LSD, heroin, stimulants, barbiturates, and tranquilizers which were in one form only. The approximate N for both forms was 17,500.

TABLE 18b

Incidence of Use for Various Types of Drugs, by Grade
Tenth Graders, 1991

(Entries are percentages)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Cocaine	Heroin	Stimulants	Tranquilizers	Alcohol	Getting Drunk	Cigarettes	Cigarettes (daily)
4th	0.9	2.6	0.1	0.1	0.1	0.0	0.2	0.3	8.0	1.6	9.0	0.2
5th	0.6	1.3	0.1	0.1	0.1	0.0	0.2	0.2	4.5	1.2	6.5	0.5
6th	1.8	2.1	0.2	0.2	0.1	0.0	0.9	0.2	8.8	3.3	8.8	1.0
7th	3.4	2.8	0.6	0.4	0.4	0.1	2.1	0.8	16.7	7.3	10.5	2.2
8th	5.7	3.0	1.1	1.1	1.1	0.4	3.2	1.9	20.1	12.0	9.3	3.1
9th	6.7	2.7	2.7	2.5	1.6	0.4	3.8	1.6	19.6	15.9	8.4	3.7
10th	4.2	1.3	1.2	1.1	0.7	0.3	2.9	0.9	7.1	8.7	2.6	1.9
Never used	76.6	84.3	93.9	94.4	95.9	98.8	86.8	94.2	16.2	50.0	44.9	87.4

NOTE: All drugs were asked about in both questionnaire forms except for the following: hallucinogens, LSD, heroin, stimulants, barbiturates, and tranquilizers which were in one form only. The approximate N for both forms was 14,800.

TABLE 18c

Incidence of Use for Various Types of Drugs, by Grade
Twelfth Graders, 1991

(Entries are percentages)

Grade in which drug was first used:	Marijuana ^a	Inhalants ^a	Amyl/Butyl Nitrites	Hallucinogens ^a	LSD	PCP	Cocaine	Heroin	Other Opiates	Stimulants ^b	Barbiturates	Methaqualone	Tranquilizers	Alcohol	Getting Drunk	Cigarettes	Cigarettes (daily)
6th	2.6	2.6	0.1	0.4	0.2	0.0	0.2	0.0	0.3	0.7	0.2	0.1	0.2	11.5	3.5	19.6	1.8
7-8th	9.2	5.7	0.5	1.5	1.3	0.8	1.1	0.2	1.3	3.6	1.7	0.3	1.6	26.3	16.5	20.8	5.8
9th	8.3	3.2	0.4	1.6	1.4	0.7	1.7	0.2	1.3	3.6	1.2	0.3	1.4	21.6	17.0	10.1	5.1
10th	7.8	2.8	0.3	2.4	2.2	0.9	2.2	0.2	1.6	3.6	1.5	0.2	1.2	14.7	13.8	6.5	4.0
11th	5.3	2.3	0.3	2.3	2.2	0.4	1.8	0.1	1.6	2.4	1.0	0.2	1.6	9.8	10.0	4.0	3.4
12th	3.5	0.9	0.1	1.5	1.4	0.1	0.8	0.1	0.5	1.4	0.5	0.1	1.2	4.2	4.5	2.2	1.7
Never used	63.3	82.4	98.4	90.4	91.2	97.1	92.2	99.1	93.4	84.6	93.8	98.7	92.8	12.0	34.6	36.9	78.3

NOTE: Percents are based on three of the six forms (N = approximately 6900) except for cocaine which is based on four of the six forms (N = approximately 9200), inhalants which is based on two of the six forms (N = approximately 4600), and PCP and nitrites which are based on one of the six forms (N = approximately 2300).

^aUnadjusted for known underreporting of certain drugs. See text for details.

^bBased on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

TABLE 18d

Incidence of Use for Various Types of Drugs: A Comparison of Responses from Eighth, Tenth, and Twelfth Graders, 1991

(Entries are percentages)

Marijuana Inhalants Hallucinogens LSD Cocaine Heroin Stimulants Tranquilizers Alcohol Getting Drunk Cigarettes Cigarettes (daily)

Percent who used by end of 6th grade

8th	4.1	11.5	0.9	0.7	0.7	0.4	2.7	1.6	38.4	9.0	30.2	3.0
10th	3.3	6.0	0.4	0.4	0.3	0.0	1.3	0.7	21.3	6.1	24.3	1.7
12th	2.6	2.6	0.4	0.2	0.2	0.0	0.7	0.2	11.5	3.5	19.6	1.8

Percent who used by end of 8th grade

8th	10.2	17.6	3.2	2.7	2.3	1.2	10.5	3.8	70.1	26.7	44.0	7.2
10th	12.4	11.8	2.1	1.9	1.8	0.5	6.6	3.4	57.1	25.4	44.1	7.0
12th	11.8	8.3	1.9	1.5	1.3	0.2	4.3	1.8	37.8	20.0	40.4	7.6

Percent who used by end of 10th grade

10th	23.4	15.7	6.1	5.6	4.1	1.2	13.2	5.8	83.8	50.0	55.1	12.6
12th	27.9	14.3	5.9	5.1	5.2	0.6	11.5	4.4	74.1	50.8	57.0	16.7

gerate considerably the phenomenon of having more than a few sips, whereas the twelfth grade data do not. Note that as we ask about lifetime alcohol use by the upper grade levels, the data from the three groups of respondents converge.

- A fair number from all three grade levels indicate having ***gotten drunk*** by sixth grade (between 4% and 9%), and much of the difference may be attributable to the differential inclusion of eventual dropouts.
- Even larger proportions indicate having had their first ***cigarette*** by sixth grade (from 20% to 30%). Again, because educational attainment is highly correlated with smoking, the differential inclusion of eventual dropouts could account for most of the difference.
- Clearly the ***legal drugs*** are the most likely to be initiated at an early age, with ***inhalants*** and ***marijuana*** likely to come next.
- The peak ages for initiation of ***cigarette*** smoking appear to be in the sixth and seventh grade, but with a considerable amount occurring even earlier.
- For ***alcohol***, we are more inclined to rely on the data from seniors, which suggest that the peak ages of initiation are in seventh through ninth grade. The first occasion of ***drunkenness*** is most likely to occur in grades 7 through 10, which is also when the first ***marijuana*** use is most likely to occur.
- ***Inhalant*** use tends to occur early, with peak initiation rates in grades 6 through 9.
- The ***illicit drugs other than marijuana*** (or inhalants) do not reach peak initiation rates until the high school years (grades 10 through 12), consistent with the progression model noted earlier.
- For most illicit drugs, half to two-thirds of those who use by twelfth grade initiate use prior to grade 10; this is true for ***inhalants*** (65%), ***nitrites*** (63%), ***marijuana*** (55%), ***methaqualone*** (54%), ***PCP*** (52%), ***amphetamines*** (51%), and ***barbiturates*** (50%). One-third to less than a half of users of ***heroin*** (44%), ***opiates other than heroin*** (44%), ***tranquilizers*** (44%), ***cocaine*** (38%), and ***LSD*** (33%) initiated prior to grade 10.

TRENDS IN USE AT EARLIER GRADE LEVELS

Using the retrospective data provided by members of each senior class concerning their grade at first use, it is possible to reconstruct lifetime prevalence trend curves for lower grade levels over earlier years. Obviously, data from school dropouts are not included in any of the curves. Figures 18a through 18r show the reconstructed lifetime prevalence curves for earlier grade levels for a number of drugs.

- Figure 18a provides the trends at each grade level for lifetime use of *any illicit drug*. It shows that for all grade levels there was a continuous increase in illicit drug involvement through the seventies. The increase is fortunately quite small for use prior to seventh grade; only 1.1% of the class of 1975 reported having used an illicit drug in 6th grade or below (which was in 1969 for that class), but the figure has increased modestly, and for the graduating class of 1991 is at 3.3% (which was in 1985 for that class). The lines for the other grade levels all show much steeper upward slopes. For example, about 52% of the class of 1982 had used some illicit drug by the end of grade 10, compared to 37% of the class of 1975. It has fallen back to 33% for the class of 1991.
- Beginning in 1980 there was a leveling off at the high school level (grades 10, 11, and 12) in the proportion becoming involved in illicit drugs. The leveling in the lower grades came about a year earlier.
- Most of the increase in any illicit drug use was due to increasing proportions using marijuana. We know this from the results in Figure 18b showing trends for each grade level in the proportion having used *any illicit drug other than marijuana* in their lifetime. Compared to Figure 18d for marijuana use, these trend lines are relatively flat throughout the seventies and, if anything, began to taper off among ninth and tenth graders between 1975 and 1977. The biggest cause of the increases in these curves from 1978 to 1981 was the rise in reports of amphetamine use. As noted earlier, we suspect that at least some of this rise is artifactual. If amphetamine use is removed from the calculations, even greater stability is shown in the proportion using *illicits other than marijuana or amphetamines*. (See Figure 18c.)
- As can be seen in Figure 18d, for the years covered across the decade of the 70's, *marijuana* use had been rising steadily at all grade levels down through the seventh-eighth grades. Beginning in 1980, lifetime prevalence for marijuana began to decline for grades 9 through 12. Declines in grades 7 and 8 began a year later, in 1981.

There was also some small increase in marijuana use during the 1970's at the elementary level (that is, prior to seventh grade). Use by sixth grade or lower rose gradually from 0.6% for the class of 1975 (who were sixth graders in 1968-69) to a peak of 4.3% in

the class of 1984 (who were sixth graders in 1977-78). Use began dropping thereafter and in 1991 is down to 2.6%. Results from the six recent national household surveys currently available from NIDA suggest that this relatively low level of use among this age group continues to hold true.

- **Cocaine** use at earlier grade levels is given in Figure 18e. One clear contrast to the marijuana pattern is that more than half of initiation into cocaine use takes place in grades ten through twelve (rather than earlier, as is the case for marijuana). Further, most of the increase in cocaine experience between 1976 and 1980 occurred in the 11th and 12th grades, not below. After 1980, experience with cocaine generally remained fairly level until after 1986, when eleventh and twelfth graders began to show a significant decline.
- The lifetime prevalence statistics for **stimulants** peaked briefly for grade levels 9 through 12 during the mid-70's. (See Figure 18f.) However, it showed a sharp rise in the late 70's at virtually all grade levels. As has been stated repeatedly, we believe that some—perhaps most—of this recent upturn is artifactual in the sense that nonprescription stimulants account for much of it. However, regardless of what accounts for it, there was a clear upward secular trend—that is, one observed across all cohorts and grade levels—beginning in 1979. The unadjusted data from the class of 1983 give the first indication of a reversal of this trend. The adjusted data from the classes of 1982 through 1991 suggest that the use of stimulants leveled around 1982 and has fallen appreciably since in grades 9 through 12. There is less evidence of a decline in lifetime prevalence among 7th and 8th graders.
- Lifetime prevalence of **hallucinogen** use (unadjusted for under-reporting of PCP) began declining among students at most grade levels in the mid-1970's (Figure 18g), and this gradual decline continued through the mid-1980's, reaching low points at several grade levels for the class of 1986. Recent classes have shown some fluctuations, but the class of 1991 is very similar to the class of 1986 in incidence rates for the various grade levels. Trend curves for **LSD** (Figure 18h) are similar in shape (though at lower rates, of course), except that recent classes have shown a very gradual increase in incidence rates. Incidence rates for **psychedelics other than LSD** (data not shown) have shown some decreases in incidence rates in recent classes, resulting in little net change between the classes of 1986 and 1991 in overall hallucinogen incidence rates.
- While there is less trend data for **PCP**, since questions about grade of first use of **PCP** were not included until 1979, some interesting results emerge. A sharp downturn began around 1979 (see Figure 18i), and use has declined in all grade levels since, though propor-

tionately more in the upper grades. Thus, if the hallucinogen figure (18g) were adjusted for underreporting of PCP use, it would be showing even more downturn in recent years.

- Questions about age at first use for *inhalants* (unadjusted for the nitrites) were introduced in 1978. The retrospective trend curves (Figure 18j) suggest that during the mid-1970's, experience with inhalants decreased slightly for most grade levels and then began to rise. For the upper grade levels there was a continued gradual rise since 1980 in lifetime prevalence (at least through the class of 1989), whereas the curves have been more uneven in the lower grades. However, the trend data on use by senior year (see Figure 9b), which *have* been adjusted for the underreporting of nitrites, suggest that much of the rise in recent years is an artifact resulting from the inappropriate exclusion of nitrite inhalants in earlier years. Still, these data very likely reflect a rise in the use of inhalants other than nitrites.
- Since grade-at-first-use data have been gathered for the *nitrites* beginning in 1979, only limited retrospective data exist (Figure 18k). These do not show the recent increase observed for the overall inhalant category. Instead they show a substantial decline. Because their use level has gotten so low, their omission by respondents from their reports of overall inhalant use has much less effect on the latter in recent years than it did when nitrite use was more common.
- As the graphs for the two subclasses of sedatives—barbiturates and methaqualone—show, the trend lines have been quite different for them at earlier grade levels as well as in twelfth grade (see Figures 18l and 18m). Since about 1974 or 1975, lifetime prevalence of *barbiturate* use had fallen off sharply for the upper grade levels for all classes until the late 70's; the lower grades showed some increase in the late 70's (perhaps reflecting the advent of some look-alike drugs) and in the mid-80's all grades resumed the decline. Most recently there is some leveling in the rates.

During the mid-70's *methaqualone* use started to fall off at about the same time as barbiturate use in nearly all grade levels, but dropped rather little and then flattened. Between 1978 and 1981 there was a fair resurgence in use in all grade levels; but since 1982 there has been a sharp and continuing decline through near zero.

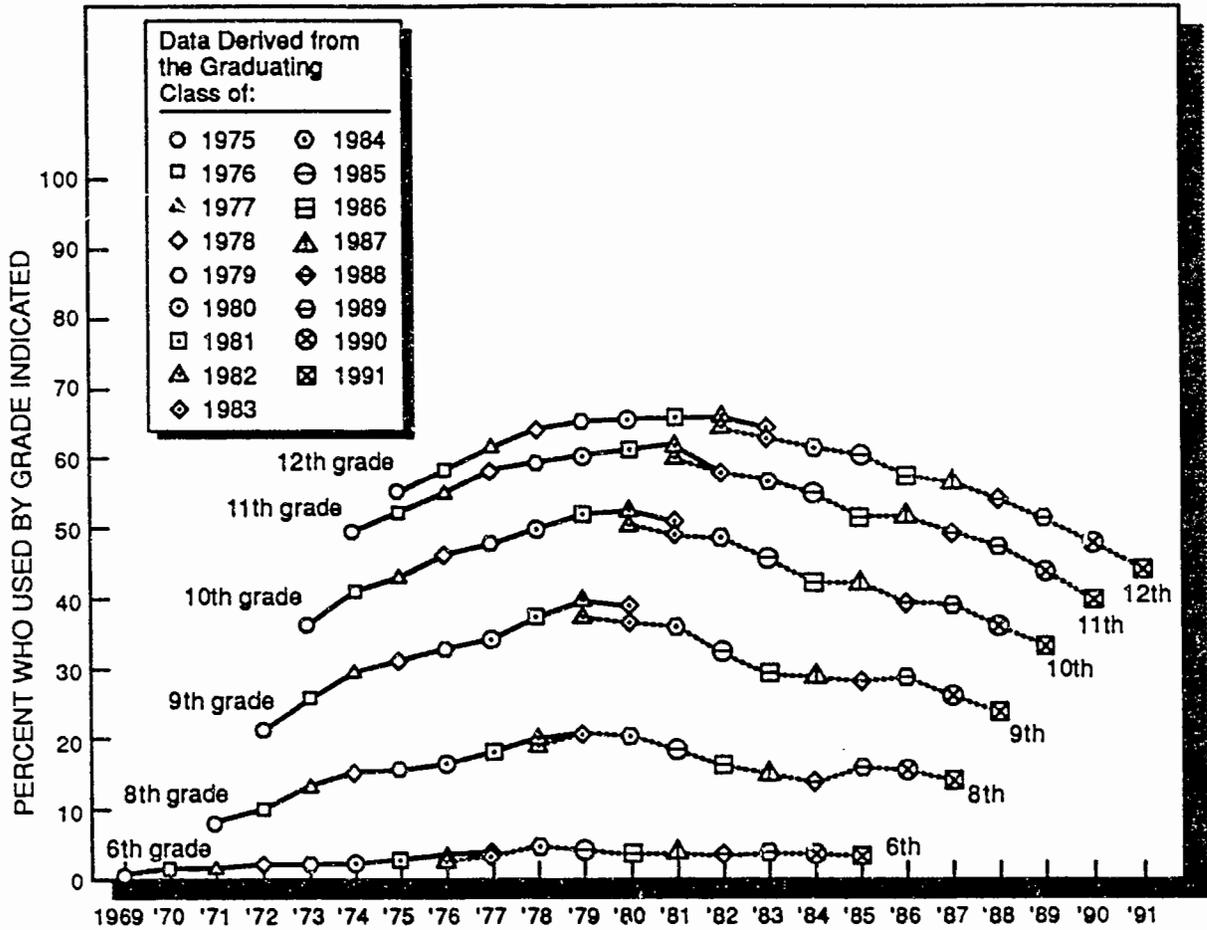
- Lifetime prevalence of *tranquilizer* use (Figure 18n) also began to decline at all grade levels in the mid-70's. It is noteworthy that, like sedatives, the overall decline in tranquilizer use has been considerably greater in the upper grade levels than the lower ones. Overall, it would appear that the tranquilizer trend lines have been following a similar course to that of barbiturates. So far, the curves are different only in that tranquilizer use has continued a

steady decline among eleventh and twelfth graders since 1977 (at least through the class of 1990), while barbiturate use had its decline interrupted for awhile in the early 80's.

- Though difficult to see in Figure 18o, the *heroin* lifetime prevalence figures for grades 9 through 12 all began declining in the mid-1970's, then leveled, and show no evidence of reversal as yet.
- The lifetime prevalence of use of *opiates other than heroin* has remained relatively flat at all grade levels since the mid-70's, with the class of 1991 showing the first evidence of decline when they reached the upper grades (Figure 18p).
- Figure 18q presents the lifetime prevalence curves for cigarette smoking on a daily basis. It shows that initiation to *daily smoking* was beginning to peak at the lower grade levels in the early to mid-1970's. This peaking did not become apparent among high school seniors until a few years later. In essence, these changes reflect in large part cohort effects—changes which show up consistently across the age band for certain class cohorts. Because of the highly addictive nature of nicotine, this is a type of drug-using behavior in which one would expect to observe enduring differences between cohorts if any are observed at a formative age. The classes of 1982 and 1983 showed some leveling of the previous decline, but the classes of 1984 through 1986 showed an encouraging resumption of the decline while they were in earlier grade levels. The data from the classes of 1987 and 1988 showed a pause in the decline, and the class of 1988 was just about even with the class of 1986. The classes of 1989, 1990, and 1991 have unfortunately shown a new rise in their lifetime prevalence of daily cigarette use at all grade levels. This rise is first discernible when these class cohorts were in eighth grade (between 1984 and 1987).
- The curves for lifetime prevalence of *alcohol* at grades 11 and 12 (Figure 18r) are very flat between the early 1970's and late 1980's, reflecting little change over more than a decade. More recent classes (1989–1991) show slight declines. At the 7–10th grade levels, the curves show slight upward slopes in the early 1970's, indicating that, compared to the earlier cohorts (prior to the class of 1978), more recent classes initiated use at earlier ages. There was an even sharper upward trending in the mid-80's, particularly at the 7–8th grade level. Thus, while 27% of the class of 1975 first used alcohol in eighth grade or earlier, 38% in the class of 1991 had done so. Females account for most of the change; 42% of females in the class of 1975 first used alcohol prior to tenth grade, compared to 55% in the class of 1991.

FIGURE 18a

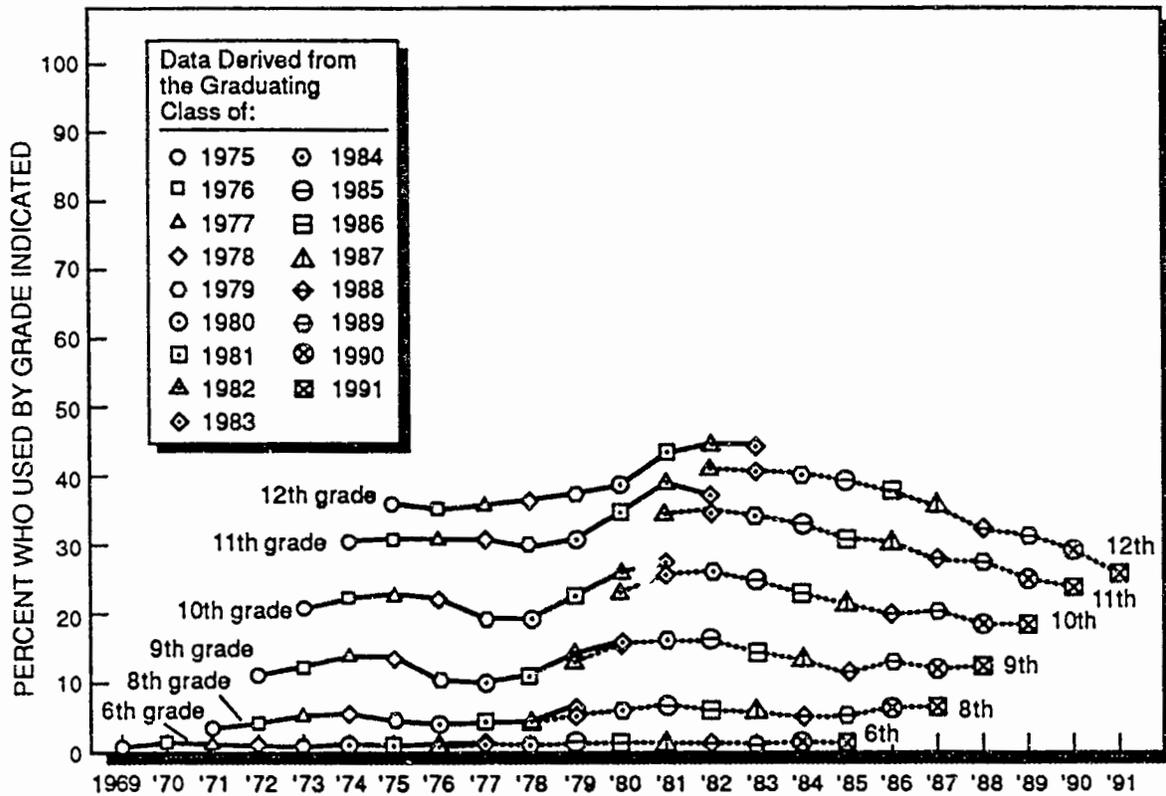
Use of Any Illicit Drug: Trends in Lifetime Prevalence for Earlier Grade Levels Based on Retrospective Reports from Seniors



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 18b

Use of Any Illicit Drug Other Than Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels
 Based on Retrospective Reports from Seniors



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 18c

**Use of Any Illicit Drug Other Than Marijuana or Amphetamines:
Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

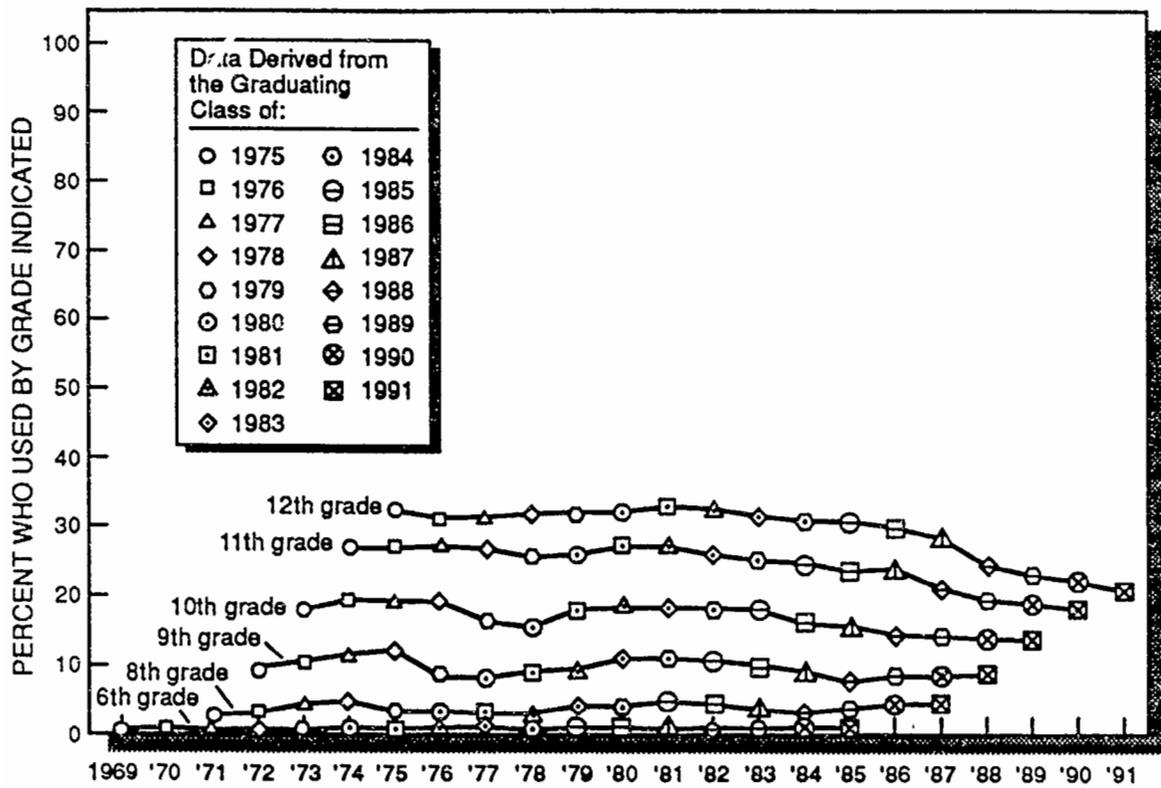


FIGURE 18d

Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors

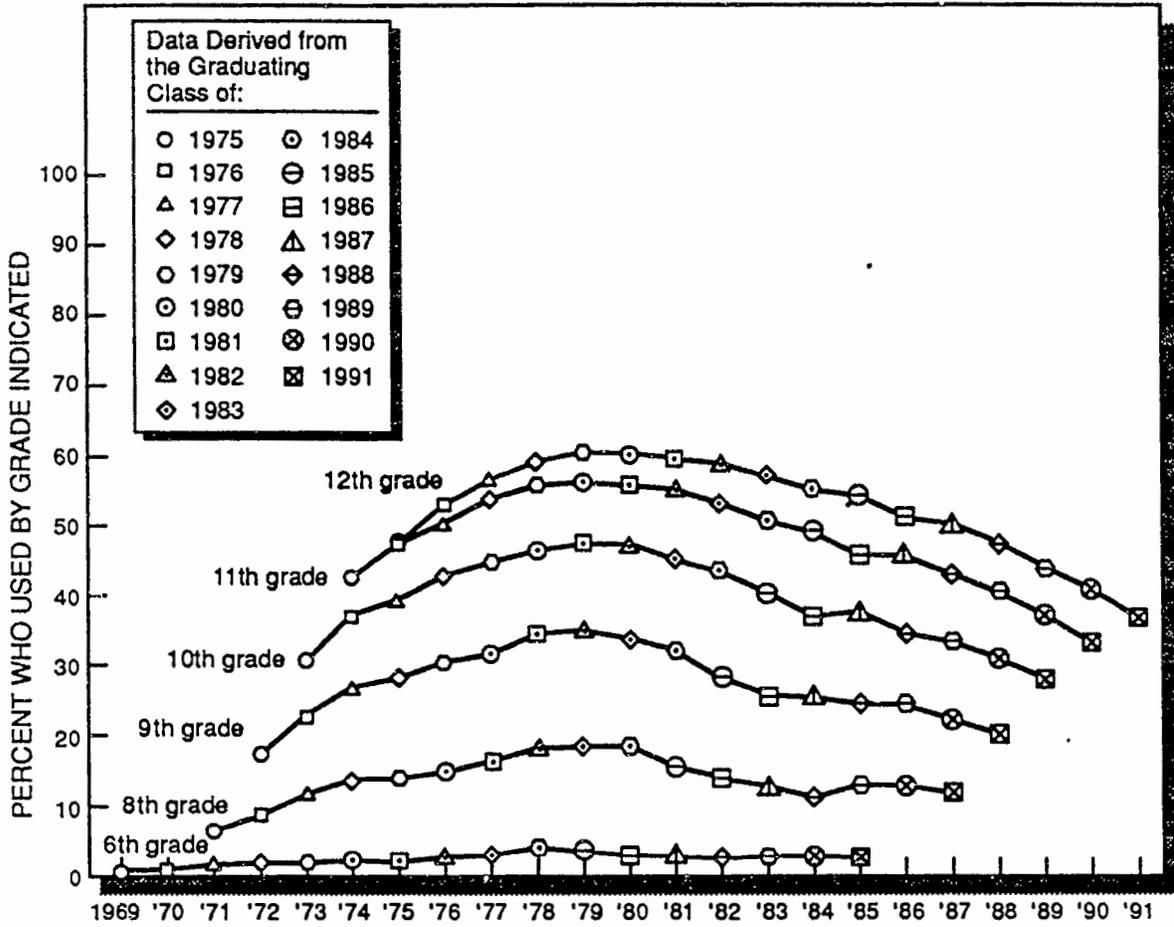


FIGURE 18e

**Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

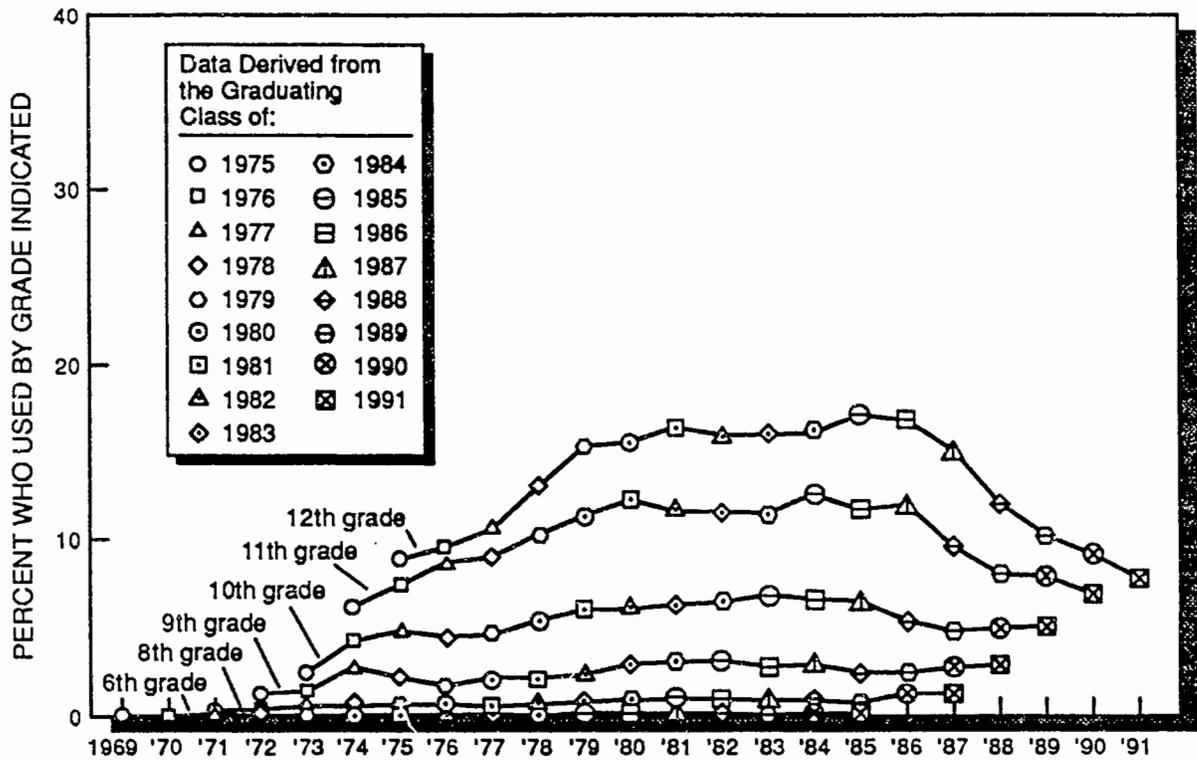
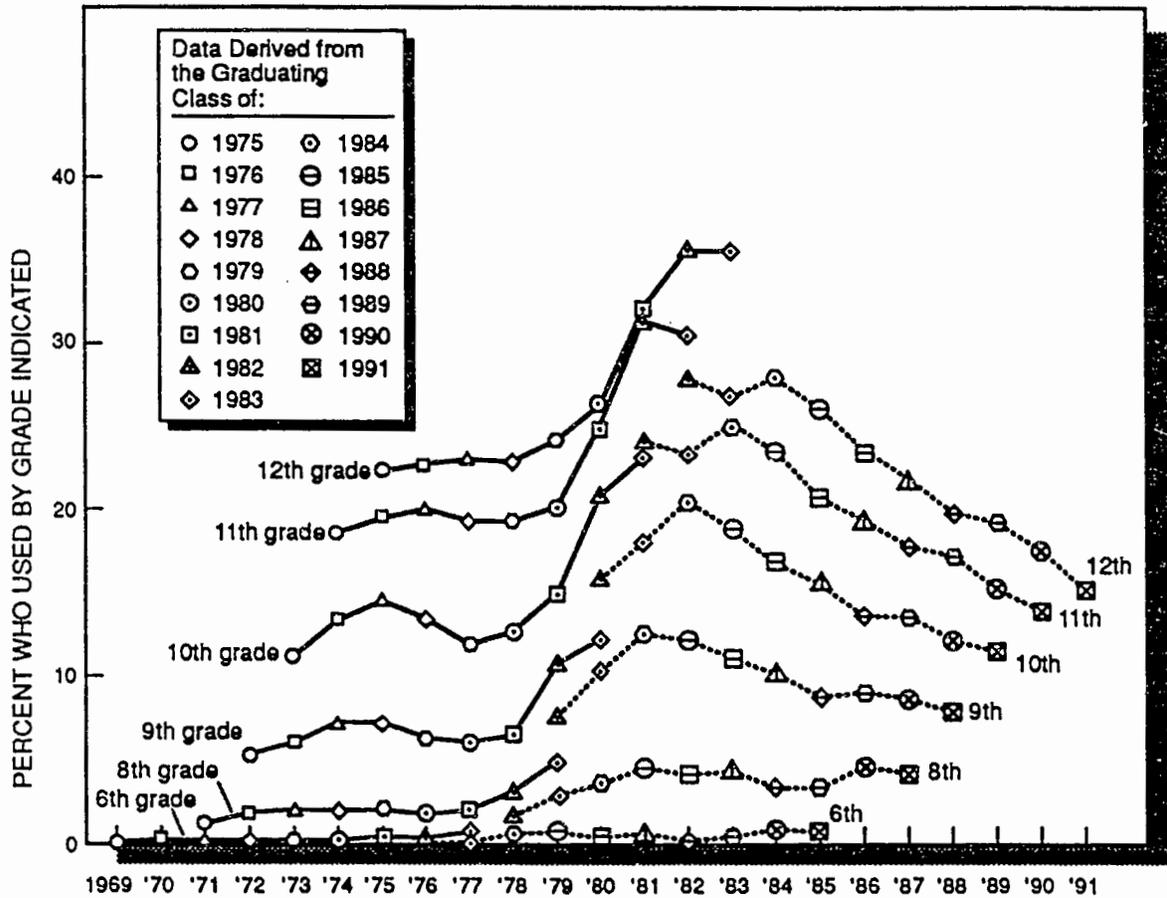


FIGURE 18f

**Stimulants: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 18g

Hallucinogens: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors

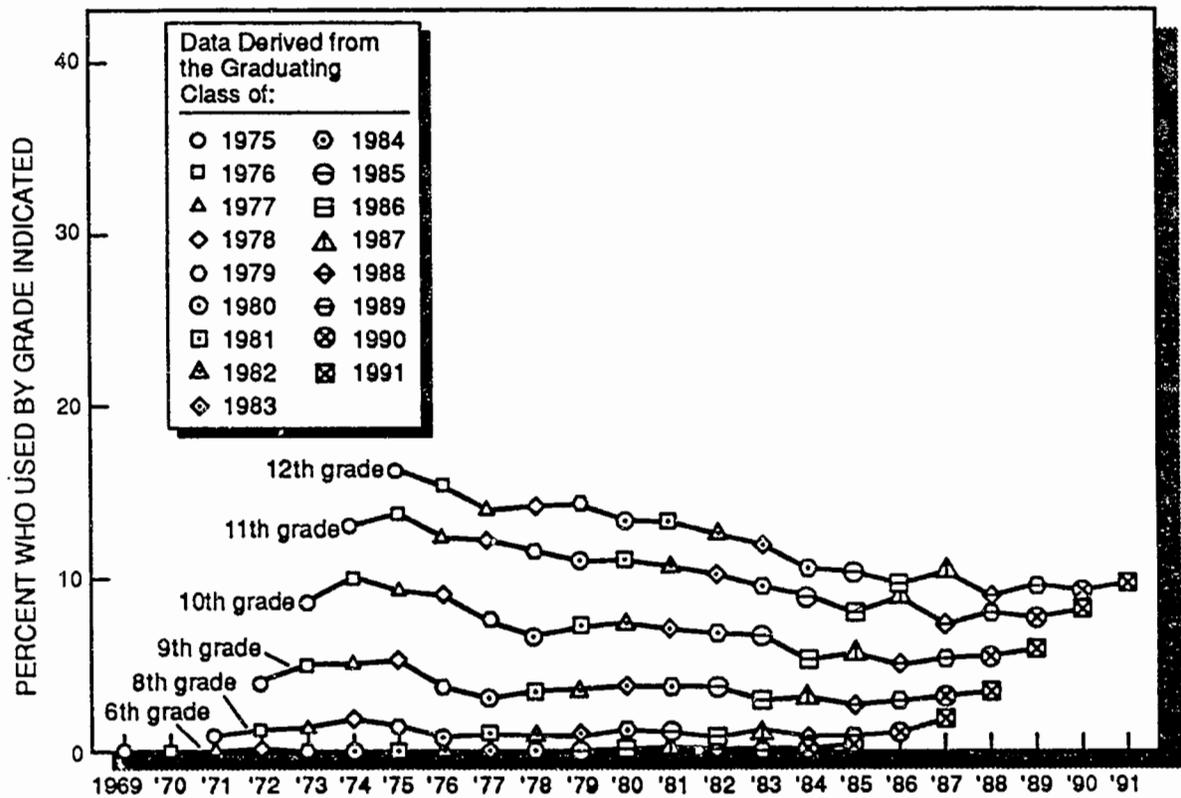
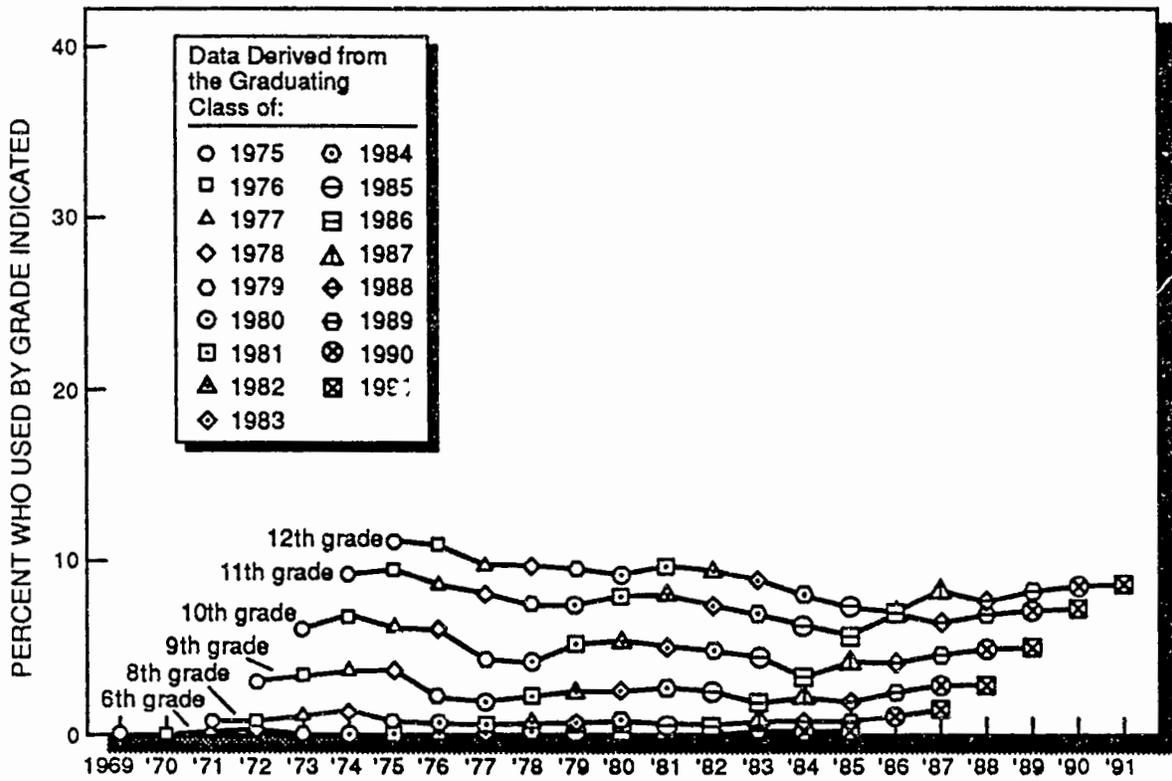


FIGURE 18h

LSD: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors



170

FIGURE 18i

**PCP: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

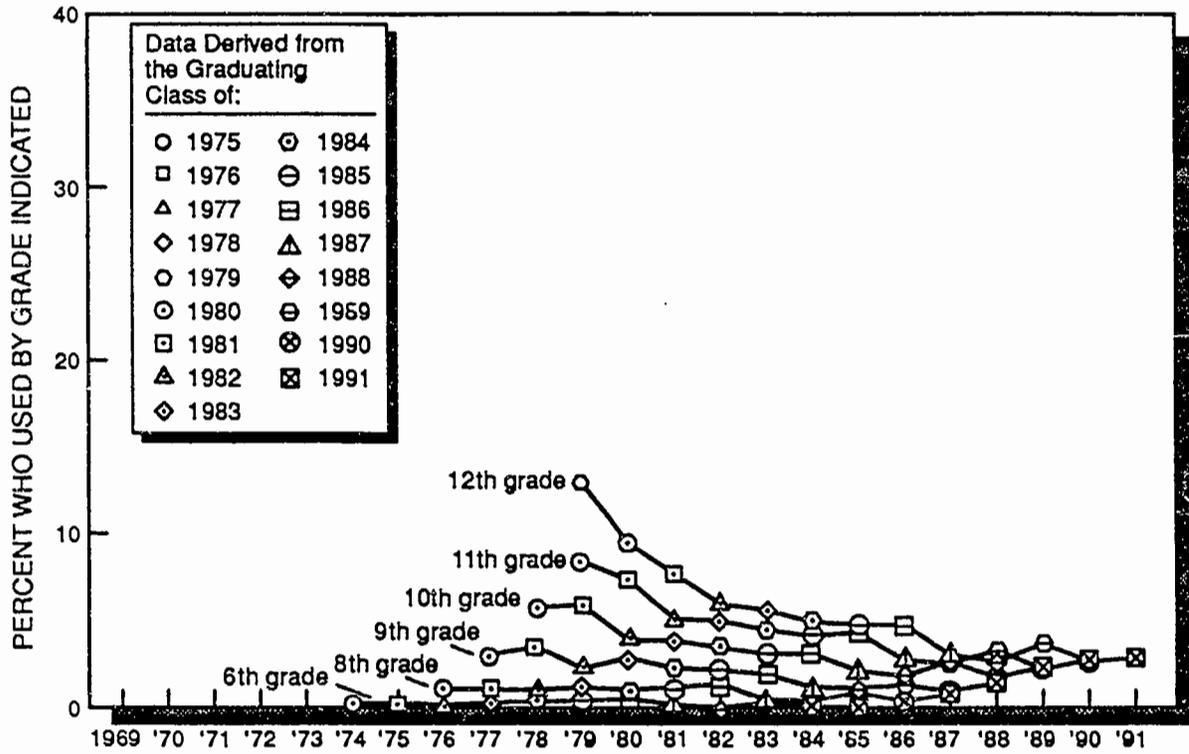


FIGURE 18j

**Inhalants: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

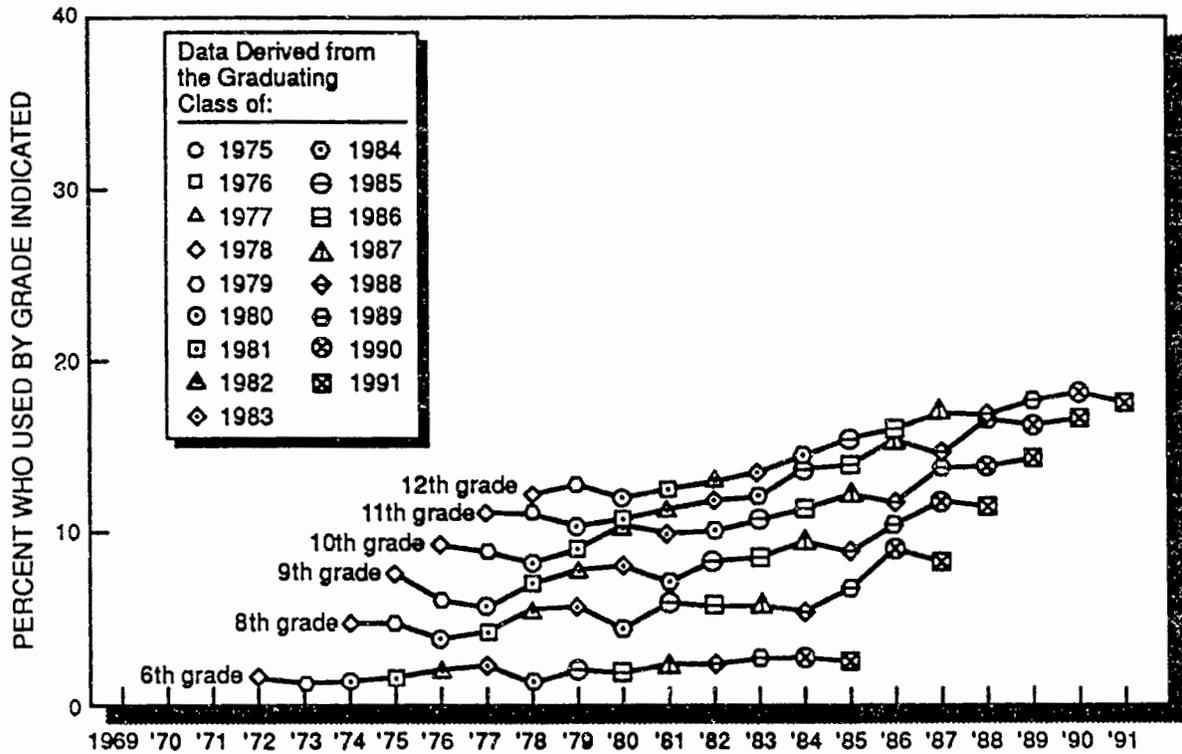


FIGURE 18k

**Nitrites: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

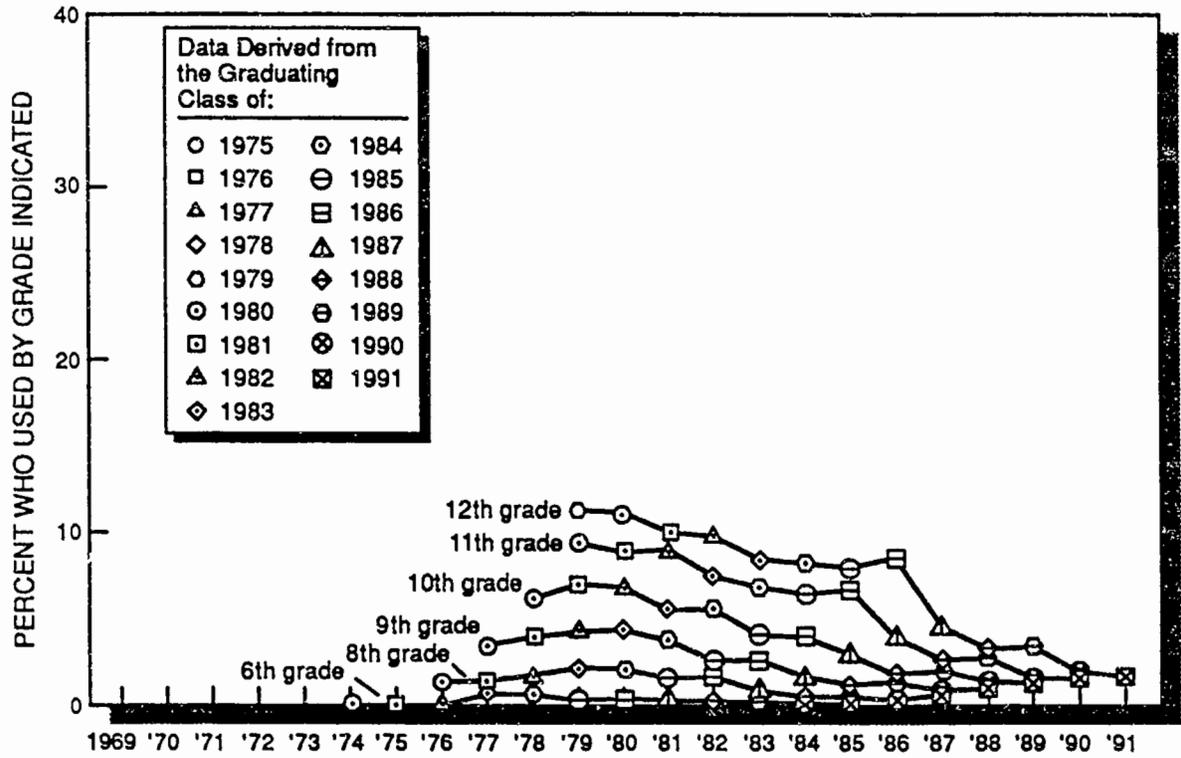


FIGURE 181

**Barbiturates: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

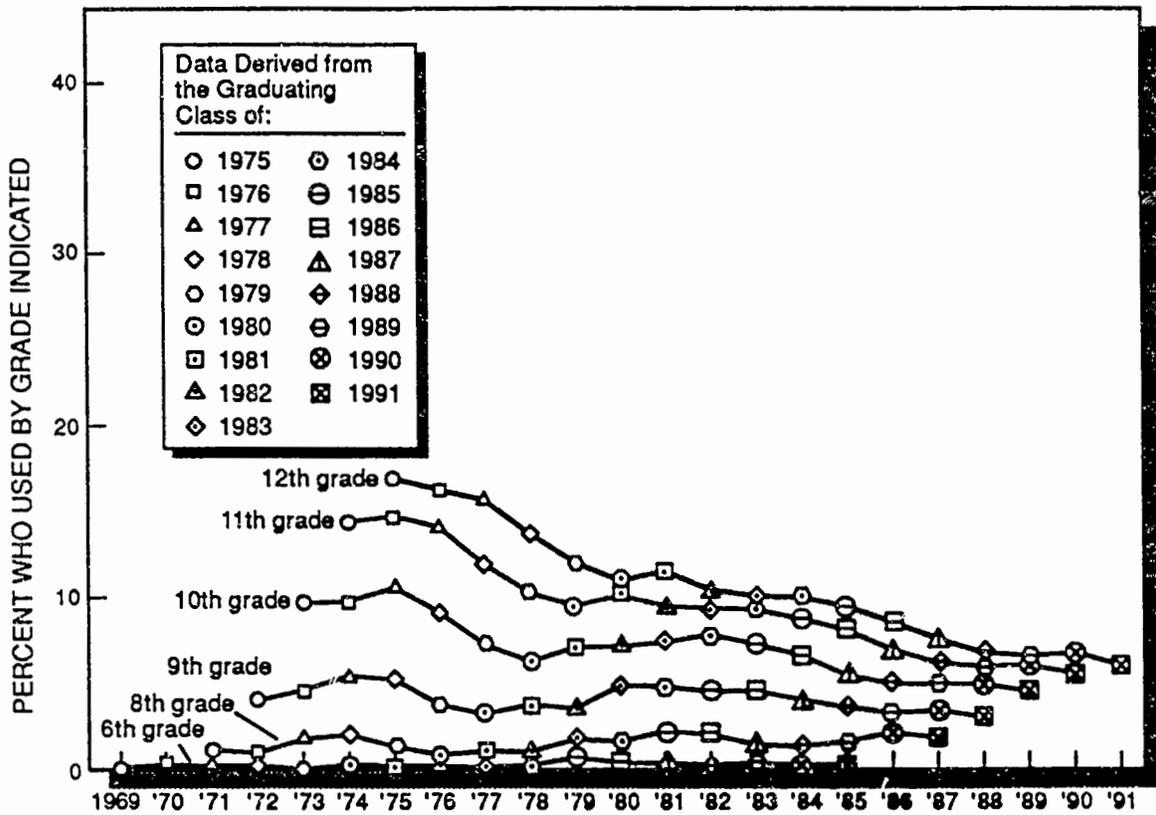


FIGURE 18m

Methaqualone: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors

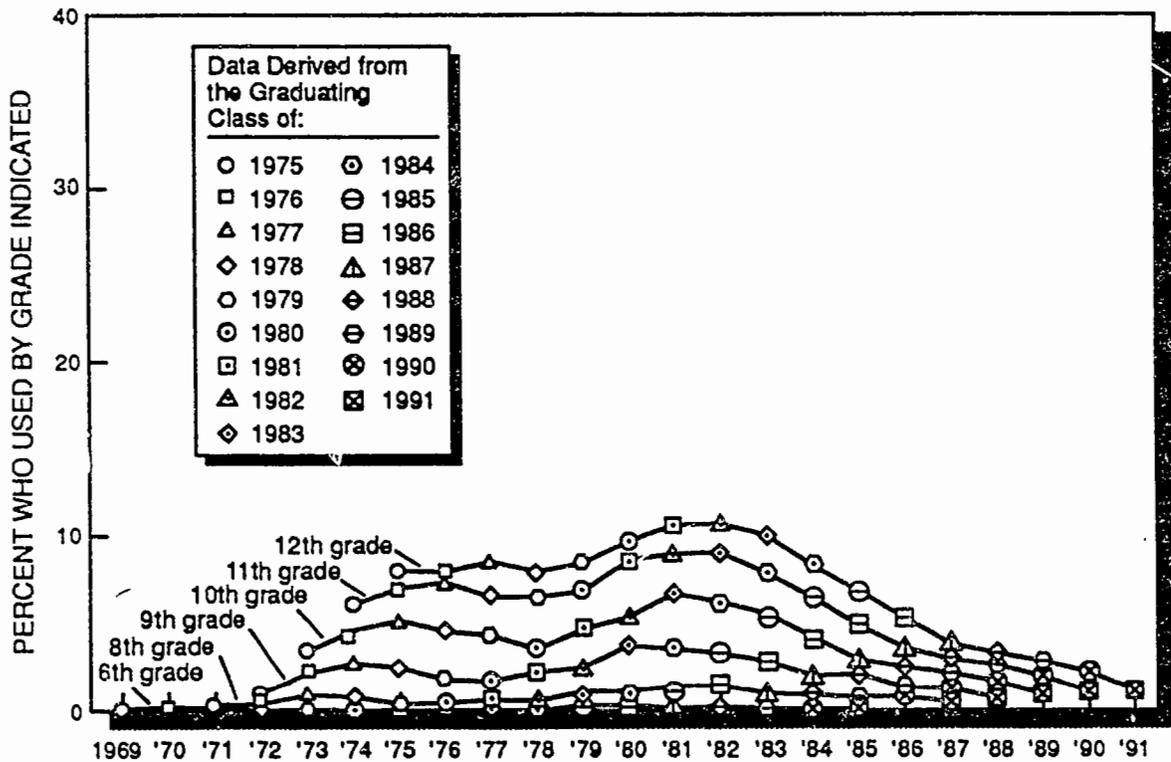


FIGURE 18n

**Tranquilizers: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

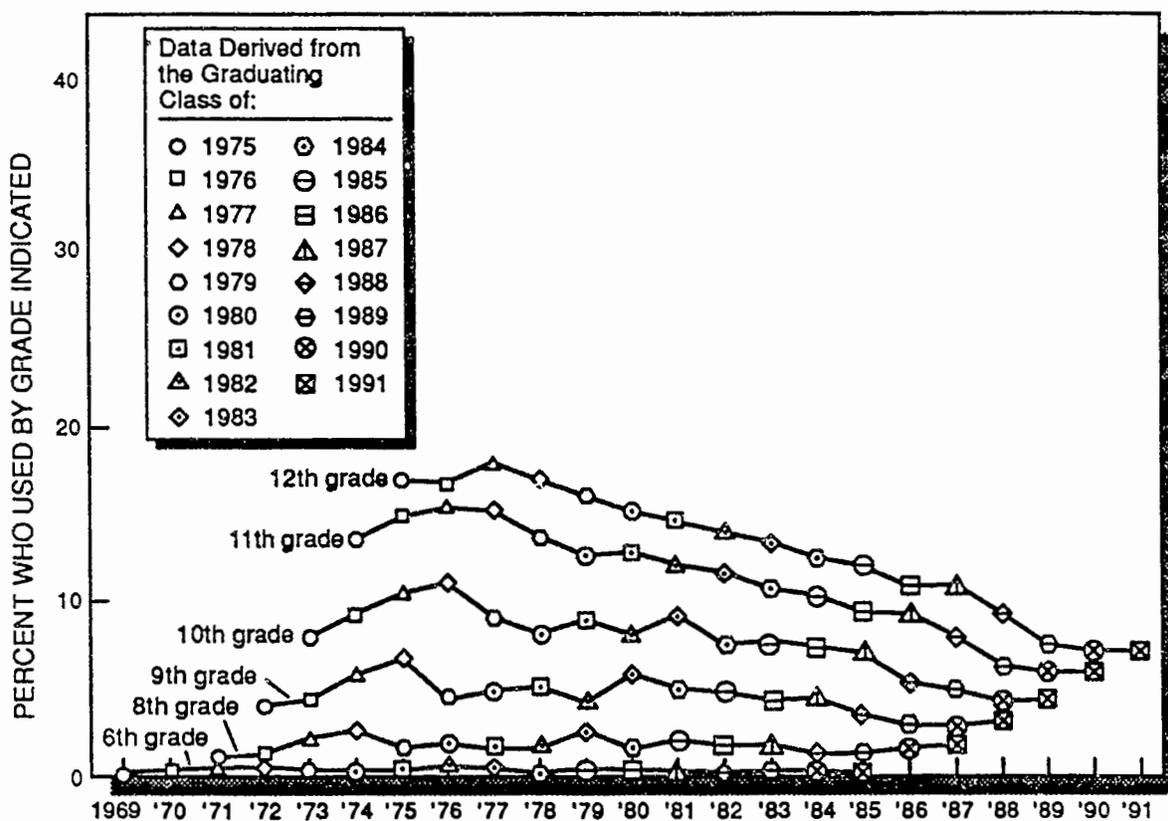


FIGURE 18o

**Heroin: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**

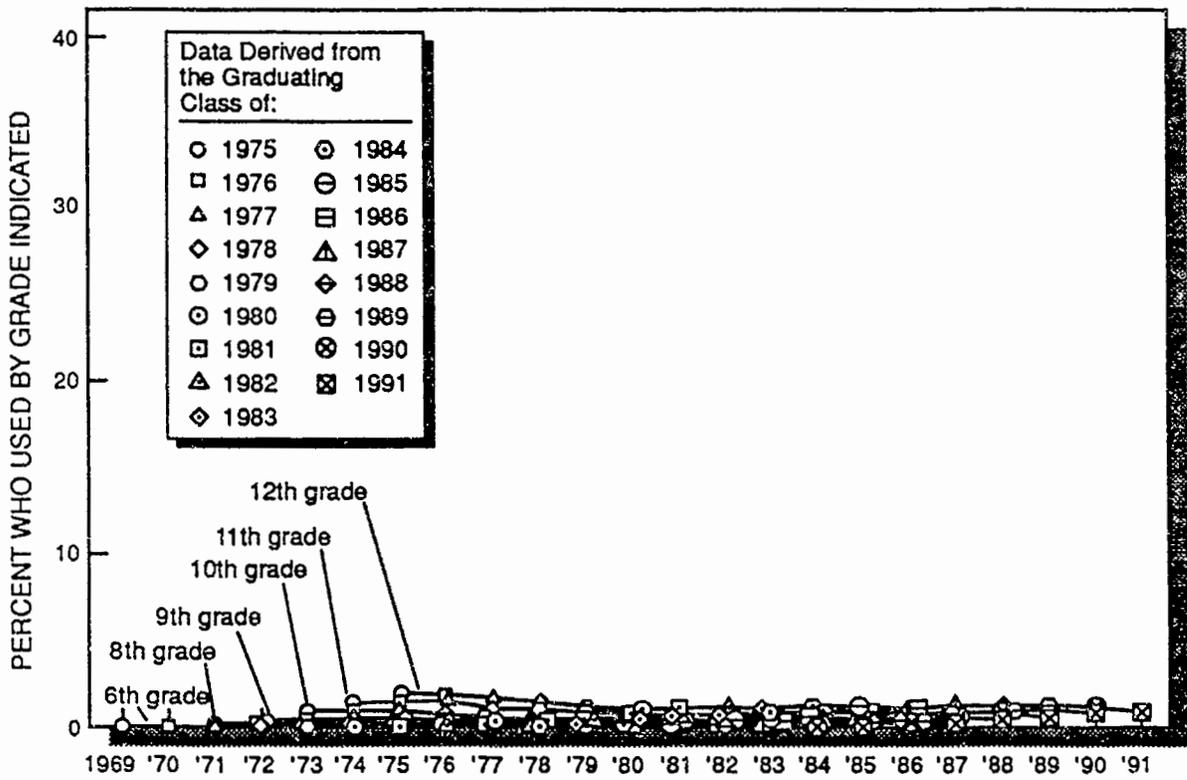


FIGURE 18p

Other Opiates: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors

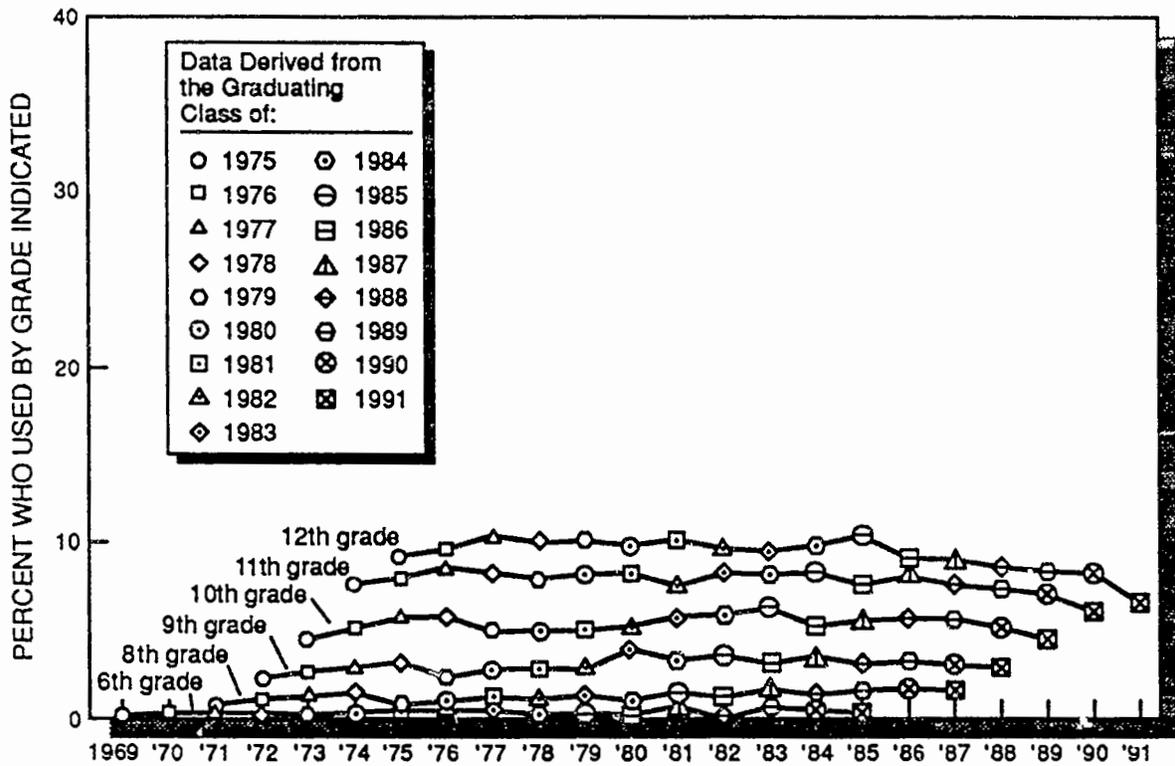


FIGURE 18q

Cigarette Smoking on a Daily Basis: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors

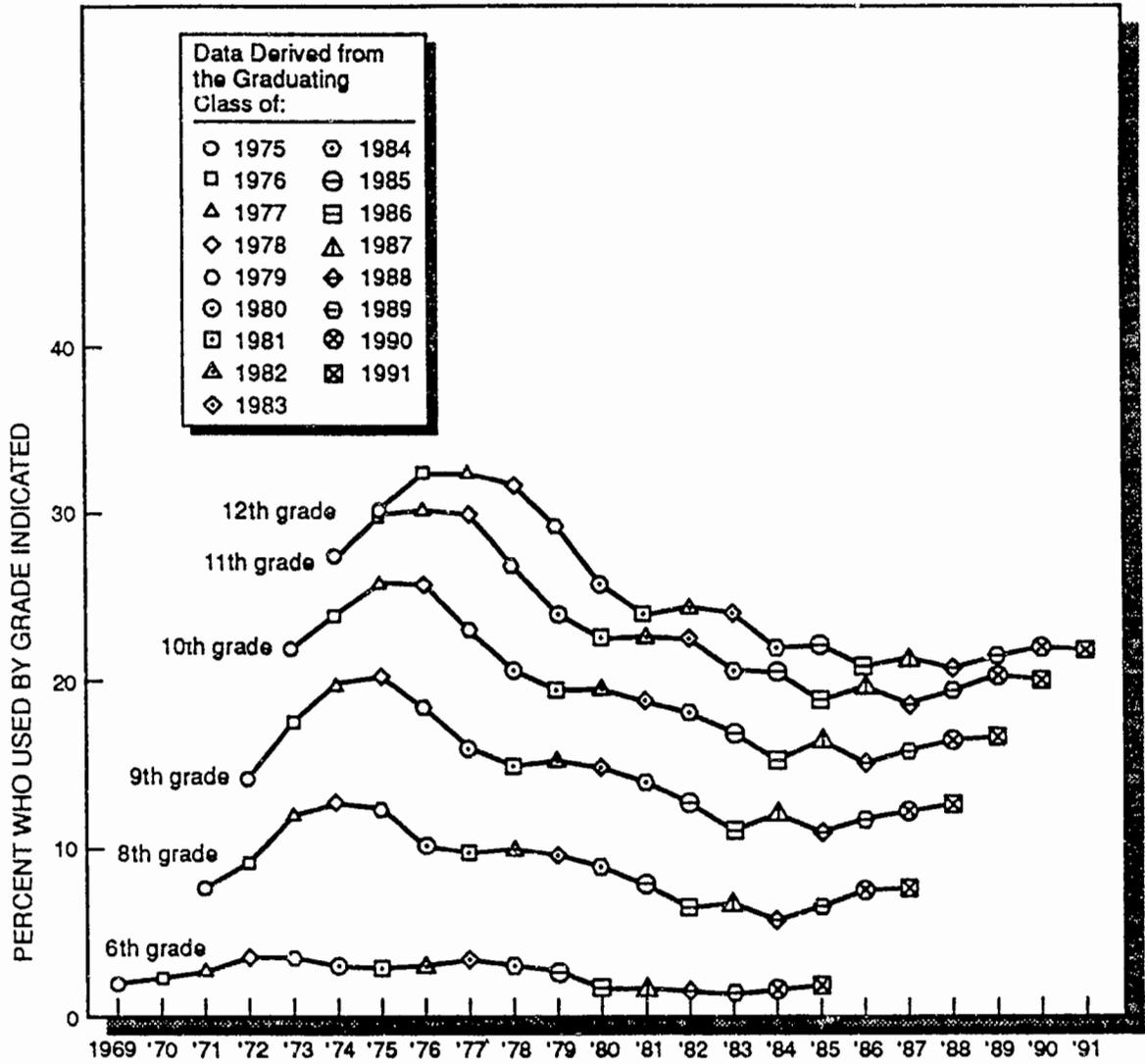
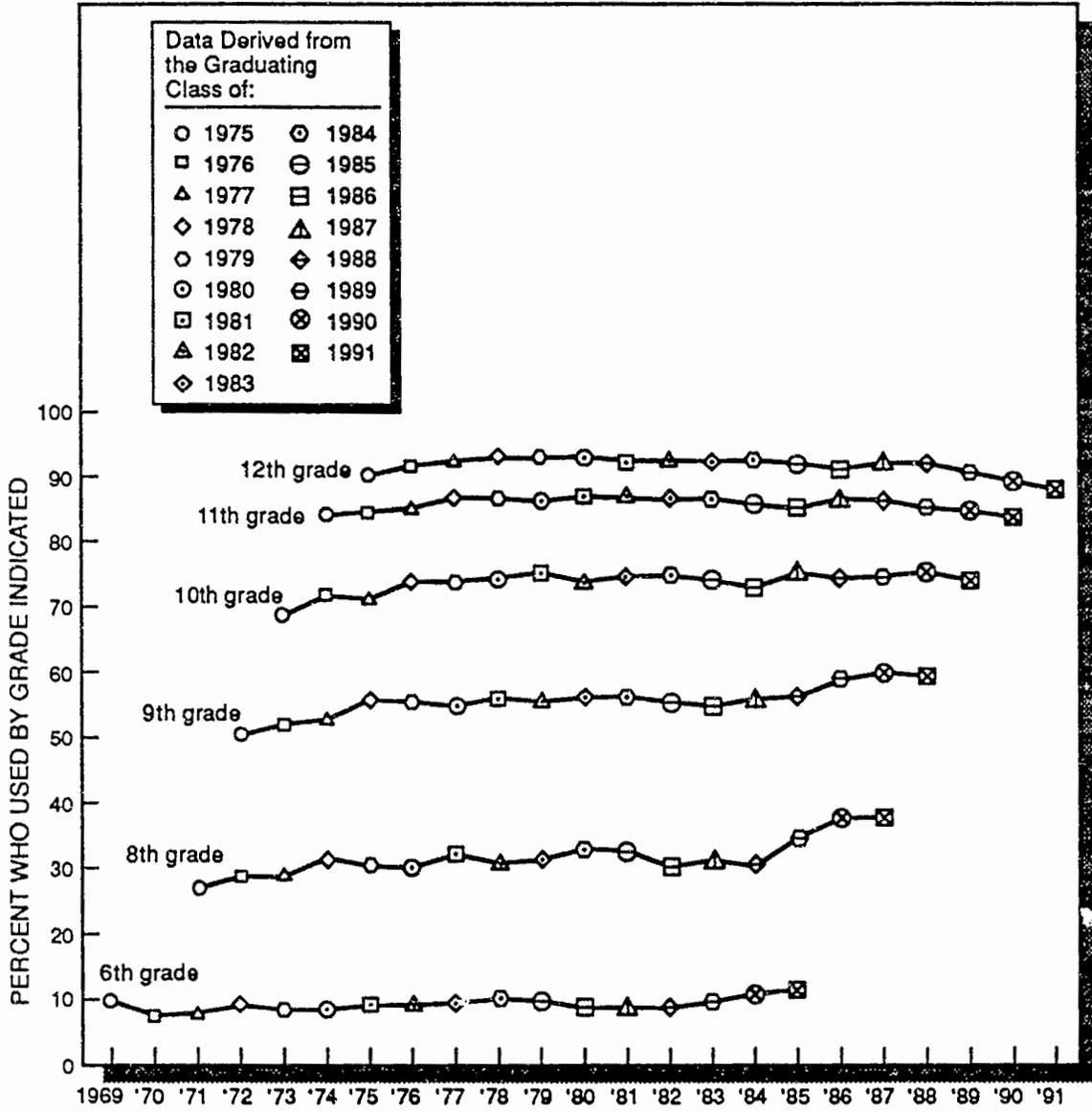


FIGURE 18r

Alcohol: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors



Chapter 7

DEGREE AND DURATION OF DRUG HIGHS

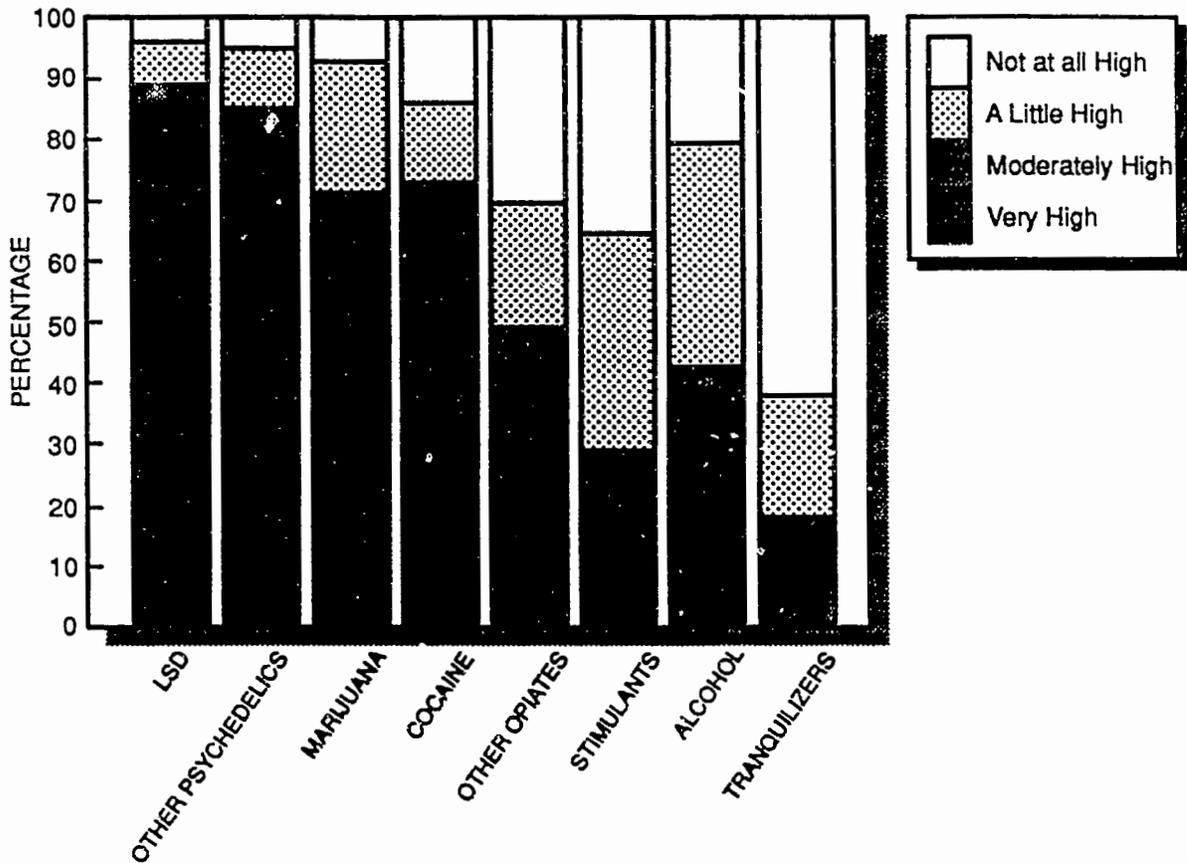
While it is possible to ask questions about substances which are manufactured and sold legally (e.g., alcohol and cigarettes) in terms of standard quantity measures, most of the illicitly used drugs are not purchased in precisely defined (or known) quantities or purities. Therefore, in order to secure indirect measures of the dose or quantity of a drug consumed per occasion, and also to help characterize the typical drug-using event for each type of drug, we have asked respondents in one of the six questionnaire forms to indicate—for each drug that they report having used in the past twelve months—how high they usually get, and how long they usually stay high. The results from those questions are discussed in this chapter, along with trends since 1975, in the degree and duration of the highs usually associated with each of the relevant drugs.

DEGREE AND DURATION OF HIGHS AMONG SENIORS IN 1991

- Figure 19 shows the proportion of 1991 seniors who say that they usually get “not at all” high, “a little” high, “moderately” high, or “very” high when they use a given type of drug. The percentages are based on all respondents who report use of the given drug class in the previous twelve months, and therefore each bar cumulates to 100%. The ordering from left to right is based on the percentage of users of each drug who report that they usually get “very” high.
- The drugs which usually result in intense highs are the *hallucinogens* (LSD and hallucinogens other than LSD) and *heroin*. (Actually, this question was omitted for heroin beginning in 1982, due to small numbers of cases available each year; but an averaging across earlier years indicated that it would rank very close to LSD.)
- Following closely are *marijuana* and *cocaine* with nearly three-quarters of the users of each saying they usually get moderately high or very high when using the drug. Methaqualone and barbiturates are no longer included in these item sets. (Methaqualone used to rank quite high on the question about the intensity of the highs attained.)
- Three of the major psychotherapeutic drug classes—*opiates other than heroin*, *stimulants*, and *tranquilizers*—are less often used to get high; but substantial proportions of users (from 18% for tranquilizers to 49% for other opiates) still say they usually get moderately or very high after taking these drugs.

FIGURE 19

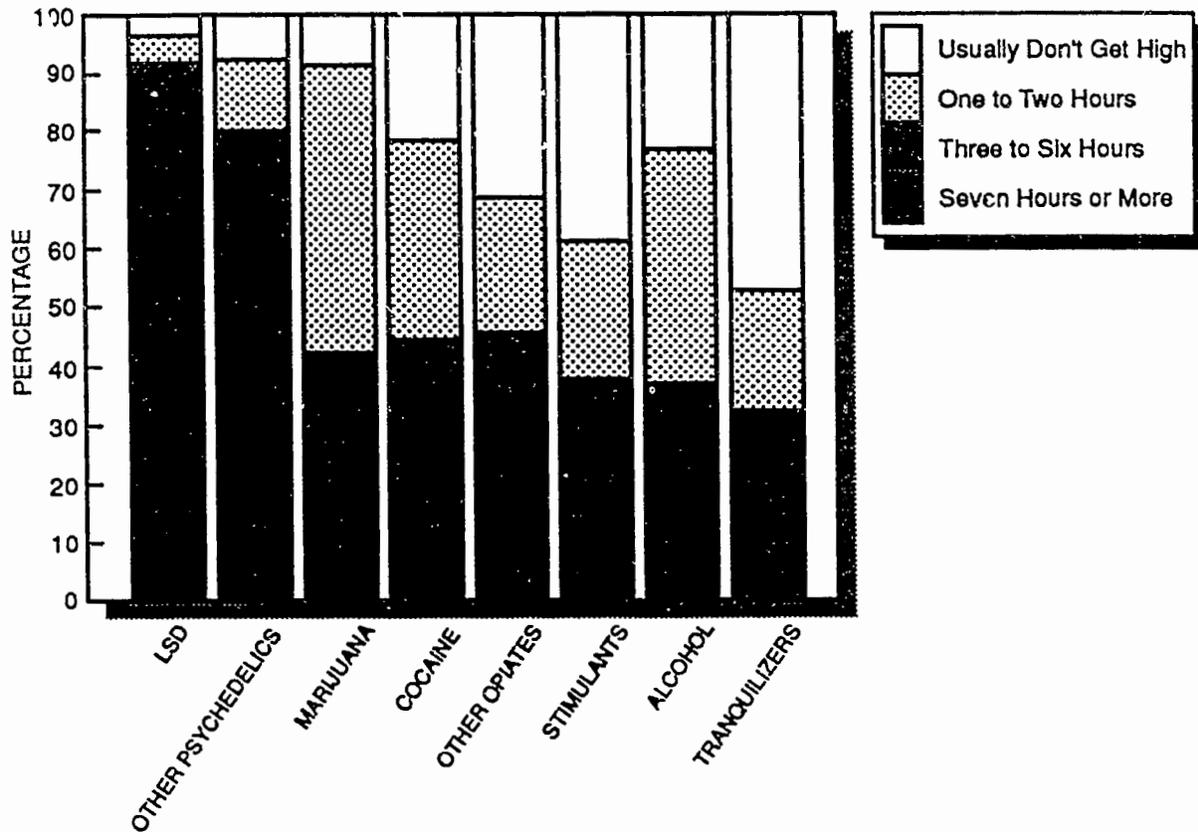
Degree of Drug Highs Attained by Recent Users
Class of 1991



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

FIGURE 20

Duration of Drug Highs Attained by Recent Users
Class of 1991



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

- Relatively few of the many seniors using *alcohol* say that they usually get *very* high when drinking, although nearly half usually get at least moderately high. However, for a given individual we would expect more variability from occasion to occasion in the degree of intoxication achieved with alcohol than with most of the other drugs. Therefore, many drinkers surely get very high at least sometimes, even if that is not “usually” the case, which is what the question asks.
- Figure 20 presents the data on the duration of the highs usually obtained by users of each class of drugs. The drugs are arranged in the same order as for intensity of highs to permit an examination of the amount of correspondence between the degree and duration of highs.
- As can be seen in Figure 20, those drugs which result in the most intense highs generally tend to result in the longest highs. For example, *LSD* and *hallucinogens other than LSD* rank one and two respectively on both dimensions, with substantial proportions (76% and 54%) of the users of these drugs saying they usually stay high for seven hours or more.
- However, there is not a perfect correspondence between degree and duration of highs. Although the highs obtained with *marijuana* tend to be relatively short-lived in comparison with many other drugs, about one-third (34%) report usually staying high three to six hours, and another 8% stay high for seven hours or more. The majority of users usually stay high two hours or less, and the modal duration is one to two hours (49% of users).
- For *cocaine* users, about one-third (34%) stay high one to two hours, and another third (32%) stay high three to six hours. One in eight users (12%) stays high seven or more hours. The remaining 22% say they usually don't get high.
- The median duration of highs for users of *opiates other than heroin*, *stimulants*, and *tranquilizers* is one to two hours.
- In sum, the drugs vary considerably in both the duration and degree of the highs usually obtained with them, though most have a median duration of one to two hours. (These data obviously do not address the qualitative differences in the experiences of being “high.”) Sizeable proportions of the users of all of these drugs report that they usually get high for at least three hours per occasion, and for a number of drugs—particularly the hallucinogens—appreciable proportions usually stay high for seven hours or more.

TRENDS IN DEGREE AND DURATION OF DRUG HIGHS

- There have been several important shifts over the years in the degree or duration of highs usually experienced by users of the various drugs.
- For *cocaine*, the degree of high obtained appears to have remained fairly constant over the past fifteen years. The duration of highs has also remained fairly constant in recent years, with no systematic shifting evident. In the onset phase of the epidemic (1976–1979), there had been a shortening of the average duration of highs; the proportion of users reporting highs of two hours or less rose from 30% to 49%. By 1991, 56% of users reported that their highs lasted two hours or less.
- For *opiates other than heroin*, there was a fairly steady decline between 1975 and 1988 in both the intensity of the highs usually experienced and in the duration of those highs. In 1975, 39% said they usually got “very high” vs. 12% in 1991. The proportion usually staying high for seven or more hours dropped from 28% in 1975 to 8% in 1988, where it remains in 1991. This shift has occurred, in part, due to a substantial increase in the proportion of users who say they do not take these drugs “to get high” (4% in 1975 vs. 31% in 1991). Because the actual prevalence of opiate use has dropped only modestly, this would suggest that increasing use for self-medication has to some degree masked a decrease in recreational use.
- *Stimulants* showed a substantial decrease between 1975 and 1981 in the proportion of recent users usually getting very high or moderately high (down from 60% in 1975 to 37% in 1981). Consistent with this, the proportion of users saying they simply “don’t take them to get high” increased from 9% in 1975 to 20% by 1981. In addition, the average reported duration of stimulant highs was declining; 41% of the 1975 users said they usually stayed high seven or more hours vs. only 17% of the 1981 users.¹⁹ In 1982 a revised version of the question about stimulant use was introduced into the form which also contained questions on the degree and duration of highs. Based on this revised form, there has been some continued drop in the duration and degree of highs obtained.

These substantial decreases in both the degree and duration of highs strongly suggest that, over the life of the study, there has been some shift in the purpose for which stimulants are being used. An examination of data on self-reported reasons for use tends to

¹⁹In 1982, the questionnaire form containing the questions on degree and duration of highs clarified the amphetamine questions to eliminate the inappropriate inclusion of nonprescription stimulants. One might have expected this change to have increased the degree and duration of highs reported, given that real amphetamines would be expected to have greater psychological impact on the average; but the trends still continued downward that year.

confirm this conclusion. In essence, between 1979 and 1984, there was a relative decline in the frequency with which recent users mention "social/recreational" reasons for use, and between 1976 and 1984 there was an increase in mentions of use for instrumental purposes. More recently, since 1984, the shifts have been slight, and tend *not* to be continuing the pre-1984 trends.

With respect to the social/recreational shifts from 1979 to 1984, the percent of recent users citing "to feel good or get high" as a reason for stimulant use declined from 58% to 45%; in 1991 it was 39%. Similarly, "to have a good time with my friends" declined from 38% to 30% between 1979 and 1984; in 1991 the figure was again 30%. There were shifts toward more instrumental use between 1976 and 1984; to lose weight increased by 15% (to 41%); to get more energy increased 13% (to 69%); to stay awake increased by 10% (to 62%) and to get through the day increased by 10% (to 32%). Since 1988, these instrumental objectives have been less often mentioned by users: to lose weight is mentioned by 38% in 1991; to get more energy by 62%; to stay awake by 57%; and to get through the day by 23%. However, the recreational motives have changed relatively little since 1984.

Despite the *relative* decline seen earlier in recreational reasons for use of stimulants, it also appears that there was at least some increase in the *absolute* level of recreational use, though clearly not as steep an increase as the trends through 1981 in overall use might have suggested. The data on the number of seniors exposed to people using amphetamines "to get high or for kicks," which will be discussed further in Chapter 9, showed a definite increase between 1976 and 1981. There was no further increase in exposure to people using for those purposes in 1982, however, suggesting that recreational use, as well as overall use, had leveled off; since 1982 there has been a considerable decrease in such exposure (from 50% to 24% of all seniors), indicating a substantial drop in the total number of people using stimulants for recreational purposes.

- The degree and duration of highs achieved by *tranquilizer* users also have been decreasing generally since about 1980.
- For *marijuana* there had been some general downward trending between 1978 and 1983 in the degree of the highs usually obtained. In 1978, 73% of users said they usually got "moderately high" or "very high"—a figure which dropped to 64% by 1983, and stands at 71% in 1991. Some interesting changes also took place in the duration figures between 1978 and 1983. Recall that most marijuana users say they usually stay high either one to two hours or three to six hours. Between 1975 and 1983 there was a steady decline in the proportion of users saying they stayed high three or more hours (from 52% in 1975 to 35% in 1983); the proportion stands at 42% in 1991. Until 1979, this shift could have been due almost entirely

to the fact that progressively more seniors were using marijuana; and the users in later classes, who might *not* have been users if they were in earlier classes, probably tended to be relatively light users. (We deduce this from the fact that the percentage of *all* seniors reporting three to six hour highs remained relatively unchanged from 1975 to 1979, while the percentage of all seniors reporting only one to two hour highs increased steadily (from 16% in 1975 to 25% in 1979).

After 1979, the overall prevalence rate did *not* continue to increase—it actually declined substantially—but the shift toward shorter average highs continued on through 1983. Thus we must attribute this shift to another factor, and the one which seems most likely is a general shift (even among the most marijuana-prone segment) toward a less frequent (or less intense) use of the drug. The drop in *daily* prevalence since 1979, which certainly is disproportionate to the drop in overall prevalence, is consistent with this interpretation. Also consistent is the fact that the average number of “joints” smoked per day (among those who reported any use in the prior month) has been dropping. In 1976, 49% of the recent (past 30 days) users of marijuana indicated that they averaged less than one “joint” per day in the prior 30 days, but by 1991 this proportion had risen to 70%. In sum, not only are fewer high school students now using marijuana, but those who are using seem to be using less frequently and to be taking smaller amounts (and doses of the active ingredient) per occasion.

This is of particular interest in light of the evidence from other sources that the THC content of marijuana has risen dramatically since the late 1970's. The evidence here would suggest that users have titrated their intake to achieve a certain (perhaps declining) level of high, and thus are smoking less marijuana as measured by volume.

- There are no clearly discernible patterns in the intensity or duration of the highs being experienced with *LSD* or *hallucinogens other than LSD*. Data are not collected for highs experienced in the use of *inhalants*, the *nitrites* specifically, *PCP* specifically, or *heroin*.
- The intensity and duration of highs associated with *alcohol* use have been generally stable throughout the study period.

Chapter 8

ATTITUDES AND BELIEFS ABOUT DRUGS

This section presents the cross-time results for three sets of attitude and belief questions. One set concerns students' views about how harmful various kinds of drug use would be for the user, the second asks how much students personally disapprove of various kinds of drug use, and the third deals with seniors' attitudes on the legality of using various drugs under different conditions. The first two question sets are asked of students at all grade levels, while the questions on legalization are asked only of seniors. The next section covers the closely related topics of parents' and friends' attitudes about drugs, as students perceive them.

As the data below show, overall percentages disapproving various drugs, and the percentages believing their use to involve serious risk, both tend to parallel the percentages of actual users. Thus, for example, of the illicit drugs marijuana is the most frequently used and one of the least likely to be seen as risky to use. This and many other such parallels suggest that the individuals who use a drug are less likely to disapprove use of it or to view its use as involving risk. A series of individual-level analyses of these data confirms this conclusion: strong correlations exist between individual use of drugs and the various attitudes and beliefs about those drugs. Those seniors who use a given drug also are more likely to approve its use, see it as less dangerous, and report their own parents and friends as being at least somewhat more accepting of its use.

The attitudes and beliefs about drug use reported below have been changing during recent years, along with actual behavior. In particular, views about marijuana use, and legal sanctions against use, have shown important trends.

Beginning in 1979, scientists, policy makers, and in particular the electronic and printed media, gave considerable attention to the increasing levels of regular marijuana use among young people, and to the potential hazards associated with such use. As will be seen below, attitudes and beliefs about regular use of marijuana have shifted dramatically since 1979 in a more conservative direction—a shift which coincides with a reversal in the previous rapid rise of daily use, and which very likely reflects the impact of this increased public attention. In 1987, a similar shift began to occur for cocaine and has continued since.

PERCEIVED HARMFULNESS OF DRUGS

Beliefs about Harmfulness Among Twelfth Graders

- As Table 20 shows, a substantial majority of high school seniors perceive *regular* use of *any of the illicit drugs* as entailing “great risk” of harm for the user. About 90% of the sample feel this way

about regular use of *crack*, *cocaine powder* and *heroin*. The proportions attributing great risk to *LSD*, *amphetamines*, and *barbiturates* are 84%, 74%, and 71%, respectively.

- Regular use of *cigarettes* (i.e., one or more packs a day) is judged by about two-thirds of all seniors (69%) as entailing a great risk of harm for the user.
- Regular use of *marijuana* is judged to involve great risk by 79% of the seniors, somewhat more than judge cigarette smoking to involve great risk, perhaps in part because marijuana can have dramatic short-term impacts on mood, behavior, memory, etc., in addition to any long-term physiological impacts—points which have been stressed for years in the advertising campaign of the National Partnership for a Drug-Free America.
- Regular use of *alcohol* was more explicitly defined in several questions. One-third (33%) of seniors associate great risk of harm with having one or two drinks almost daily. Nearly half (49%) think there is great risk involved in having five or more drinks once or twice each weekend. Over two-thirds (70%) think the user takes a great risk in consuming four or five drinks nearly every day, but this means that more than a quarter of the students do not view even this pattern of regular heavy drinking as entailing great risk.
- Compared with the above perceptions about the risks of regular use of each drug, many fewer respondents feel that a person runs a “great risk” of harm by simply trying the drug once or twice.
- Occasional use of *marijuana* is seen as risky by 41%, but relatively few seniors think there is much risk in using *marijuana* experimentally (27%).
- Experimental use of the other illicit drugs, however, is still viewed as risky by substantial proportions. The percentages associating great risk with experimental use rank order as follows: 61% for *crack*, 55% for *heroin*, 54% for *cocaine powder*, 52% for *PCP*, 47% for *LSD*, 36% for *amphetamines*, 35% for *barbiturates*, and only 27% for *marijuana*.
- The use of powdered *cocaine* is seen as less dangerous than the use of *crack* cocaine at experimental and occasional levels of use, but as engendering about the same level of perceived risk at the regular use level.
- Very few seniors (9%) believe there is much risk involved in trying an *alcoholic beverage* once or twice.

TABLE 19

**Harmfulness of Drugs as Perceived by Eighth,
Tenth, and Twelfth Graders, 1991**

<i>Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	Percentage saying "great risk" ^a		
	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
Try marijuana once or twice	40.4	30.0	27.1
Smoke marijuana occasionally	57.9	48.6	40.6
Smoke marijuana regularly	83.8	82.1	78.6
Try "crack" once or twice	62.8	70.4	60.6
Take "crack" occasionally	82.2	87.4	76.5
Try cocaine powder once or twice	55.5	59.1	53.6
Take cocaine powder occasionally	77.0	82.2	69.8
Try inhalants once or twice	35.9	37.8	NA
Take inhalants regularly	65.6	69.8	NA
Try steroids	64.2	67.1	65.6
Use smokeless tobacco regularly	35.1	40.3	NA
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	11.0	9.0	9.1
Take one or two drinks nearly every day	31.8	36.1	32.7
Have five or more drinks once or twice each weekend	59.1	54.7	48.6
Smoke one or more packs of cigarettes per day	51.6	60.3	69.4
Approx. N =	(17500)	(14800)	(2550)

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

TABLE 20

Trends in Harmfulness of Drugs as Perceived by Twelfth Graders

Q. How mu. do you think people risk harming themselves (physically or in other ways), if they ...	Percentage saying "great risk" ^a																	Class of '90-'91 change
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	
Try marijuana once or twice	15.1	11.4	9.5	8.1	9.4	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6	23.1	27.1	+4.0 _{ss}
Smoke marijuana occasionally	18.1	15.0	13.4	12.4	13.5	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5	36.9	40.6	+3.7 _s
Smoke marijuana regularly	43.3	38.6	36.4	34.9	42.0	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5	77.8	78.6	+0.8
Try LSD once or twice	49.4	45.7	43.2	42.7	41.6	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0	44.7	46.6	+1.9
Take LSD regularly	81.4	80.8	79.1	81.1	82.4	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3	84.5	84.3	-0.2
Try PCP once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55.6	58.8	56.2	51.7	-3.5
Try cocaine once or twice	42.6	39.1	35.6	33.2	31.5	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9	59.4	59.4	0.0
Take cocaine occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54.2	66.8	69.2	71.8	73.9	75.5	+1.6
Take cocaine regularly	73.1	72.3	68.2	68.2	69.5	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2	91.1	90.4	-0.7
Try "crack" once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	57.0	62.1	62.9	64.3	-3.7 _s
Take "crack" occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	70.4	73.2	75.3	80.4	76.5	-3.9 _{ss}
Take "crack" regularly	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84.6	84.8	85.6	91.6	90.1	-1.5
Try cocaine powder once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.3	51.7	53.8	53.6	-0.3
Take cocaine powder occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56.8	61.9	65.8	71.1	69.8	-1.3
Take cocaine powder regularly	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.4	82.9	83.9	90.2	88.9	-1.3
Try heroin once or twice	60.1	58.9	55.8	52.9	50.4	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8	56.4	55.2	-0.2
Take heroin occasionally	75.6	75.6	71.9	71.4	70.9	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	75.5	76.6	74.9	-1.7
Take heroin regularly	87.2	88.6	86.1	86.6	87.5	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5	90.2	89.6	-0.6
Try amphetamines once or twice	35.4	33.4	30.8	29.9	29.7	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8	32.2	36.3	+4.1 _s
Take amphetamines regularly	69.0	67.3	66.6	67.1	69.9	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2	71.2	74.1	+2.9
Try barbiturates once or twice	34.8	32.5	31.2	31.3	30.7	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	32.2	32.4	35.1	+2.7
Take barbiturates regularly	69.1	67.7	68.6	68.4	71.6	72.2	69.9	67.5	67.7	68.5	68.3	67.2	69.4	69.6	70.5	70.2	70.5	+0.3
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	5.3	4.8	4.1	3.4	4.1	3.8	4.6	3.5	4.2	4.6	4.6	5.0	4.6	6.2	6.0	6.0	9.1	+0.8
Take one or two drinks nearly every day	21.5	21.2	15.5	19.6	22.6	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5	31.3	32.7	+1.4
Take four or five drinks nearly every day	63.5	61.0	62.9	63.1	66.2	65.7	64.5	65.5	66.9	68.4	69.8	66.5	69.7	68.5	69.8	70.9	69.5	-1.4
Have five or more drinks once or twice each weekend	37.8	37.0	34.7	34.5	34.9	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0	47.1	48.6	+1.5
Smoke one or more packs of cigarettes per day	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2	69.4	+1.2
Approx. N =	2804	2918	3052	3770	3250	3234	3604	3557	3305	3262	3250	3020	3315	3276	2796	2553	2649	

NOTE: Level of significance of difference between the two most recent classes: $\alpha = .05$, $\alpha_{ss} = .01$, $\alpha_{sss} = .001$. 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.

Beliefs about Harmfulness Among Eighth and Tenth Graders

- An abbreviated set of these questions on the same subject was asked of eighth and tenth graders beginning in 1991, and questions about the perceived harmfulness of inhalants and smokeless tobacco were added. (See Table 19.)
- In general, the findings are quite similar to those for seniors. There are some interesting differences, however, in that the younger students are somewhat more likely to see *marijuana* use as more dangerous than do seniors. The same is true for the use of *crack* and the use of *cocaine powder*.
- Eighth and tenth grade students are also more likely to see weekend *binge drinking* as dangerous, though their views on daily drinking and experimentation are not much different from seniors.
- The most important difference is observed for *regular cigarette smoking*, and it goes in the opposite direction. While nearly 70% of seniors see great risk in pack-a-day smoking, only 60% of the tenth graders do, and only about 50% of the eighth graders do (51.6%). This means that the perceived risk is lowest at the ages where initiation is most likely to occur.
- Regular use of *smokeless tobacco* is viewed as entailing great risk by only about one-third (35%) of eighth grade students, and by only 40% of tenth graders. This behavior is often initiated at early ages, so these figures are disturbingly low.
- The various differences among grade levels could reflect maturational (age) effects, cohort effects, or—most likely—some combination of these effects.

Trends in Perceived Harmfulness Among Twelfth Graders

- Several very important trends have been taking place in recent years in these beliefs about the dangers associated with using various drugs (see Table 20 and Figures 21, 22, and 25).
- One of the most important trends involves *marijuana* (Figure 21). From 1975 through 1978 there had been a decline in the harmfulness perceived to be associated with all levels of marijuana use; but in 1979 for the first time, there was an increase in these proportions—an increase which preceded any appreciable downturn in use and which has continued fairly steadily since then. By far the most impressive increase in perceived risk has occurred for *regular marijuana use*, where the proportion perceiving it as involving a great risk doubled in just seven years, from 35% in 1978 to 70% in 1985; since then the proportion has increased to 79% in 1991. This dramatic change occurred during a period in which a substantial

FIGURE 21

Trends in Perceived Harmfulness: Marijuana and Cigarettes
All Seniors

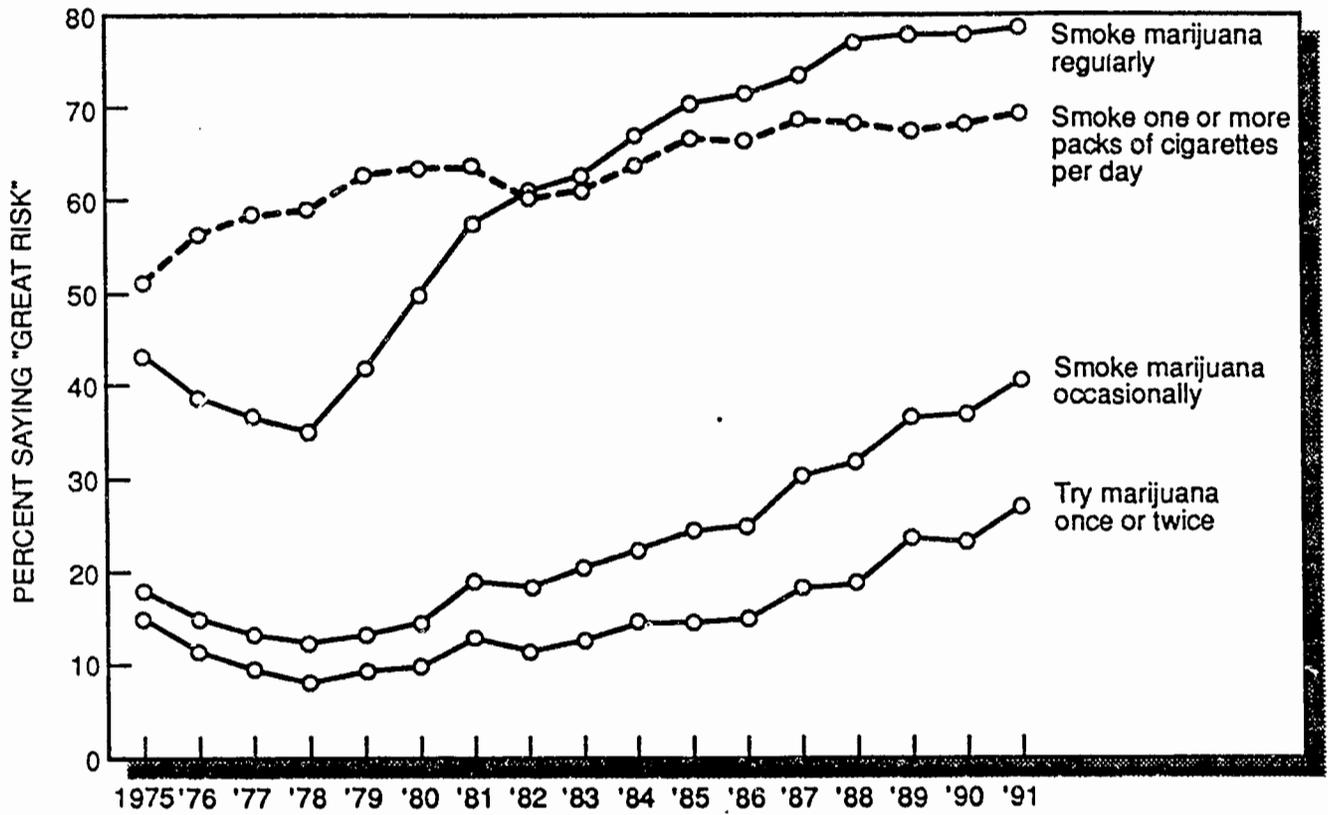


FIGURE 22

Trends in Perceived Harmfulness: Cocaine
All Seniors

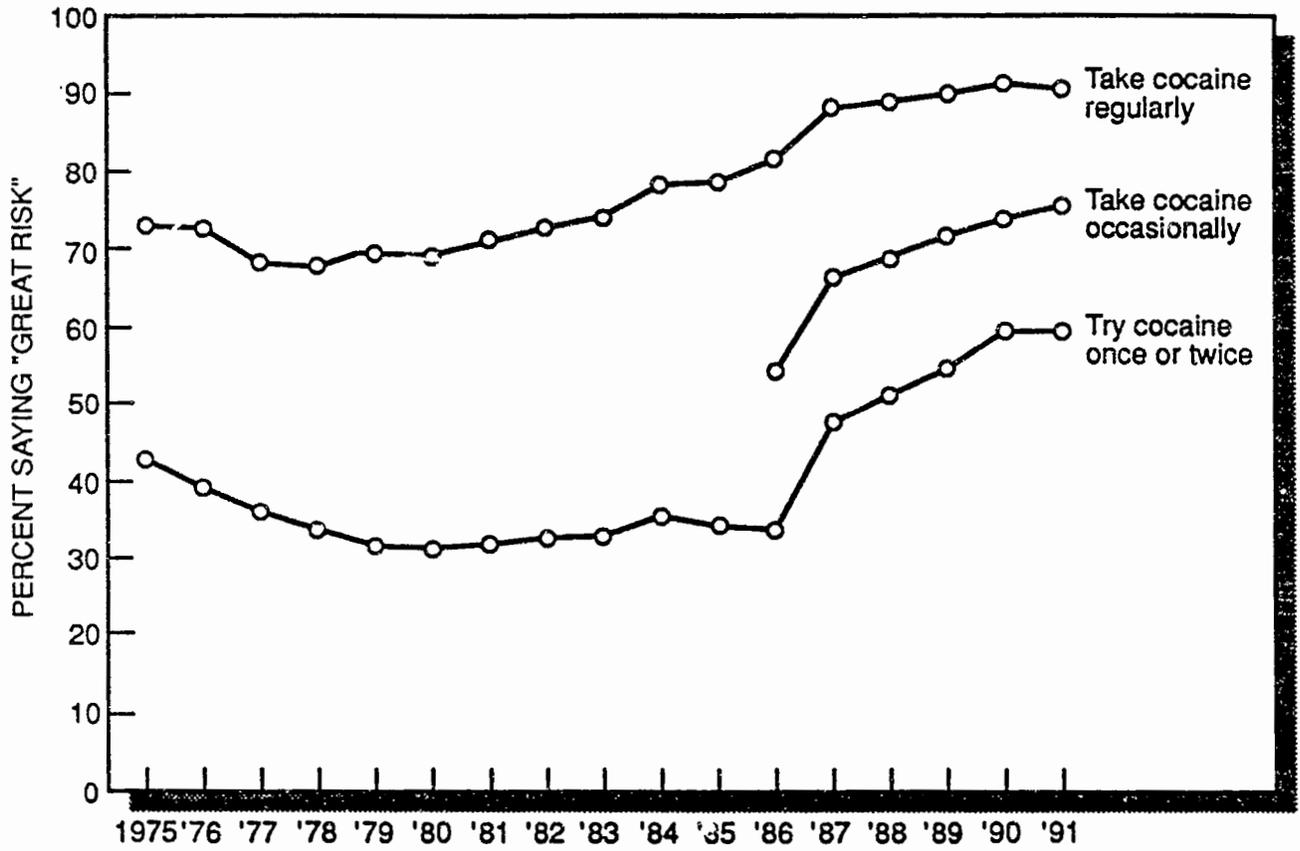


FIGURE 23
Marijuana: Trends in Perceived Availability,
Perceived Risk of Regular Use,
and Prevalence of Use in Past Thirty Days
All Seniors

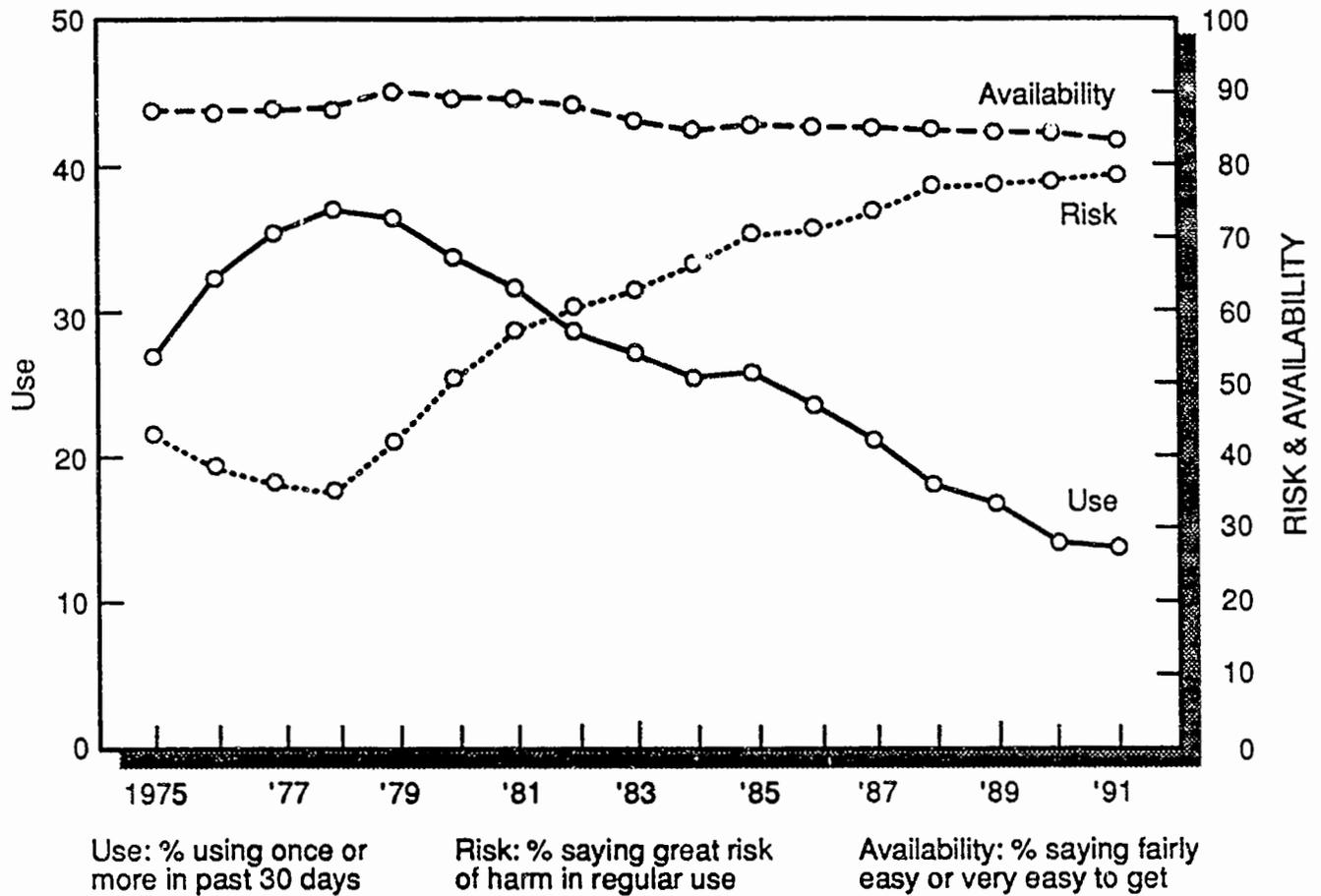
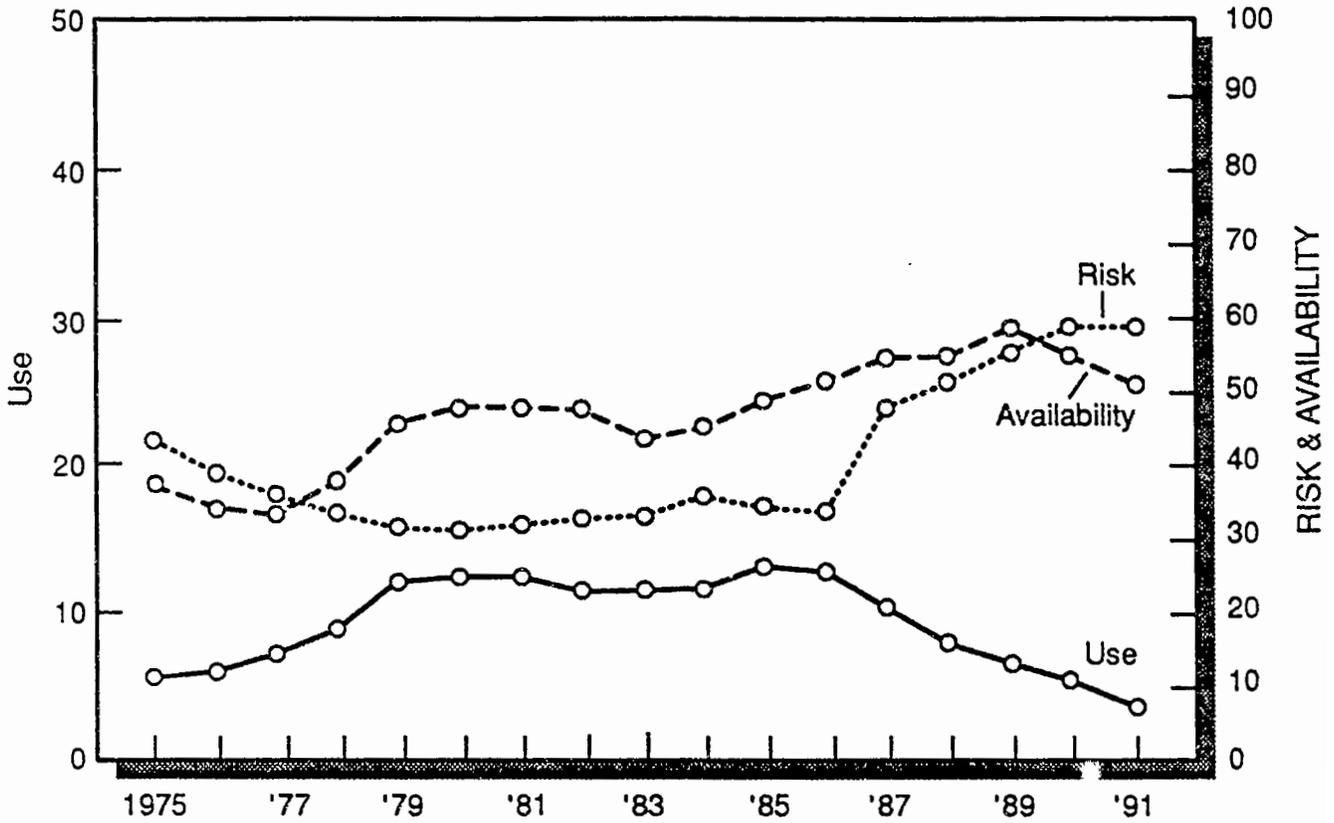


FIGURE 24

**Cocaine: Trends in Perceived Availability,
Perceived Risk of Trying,
and Prevalence of Use in Past Year
All Seniors**



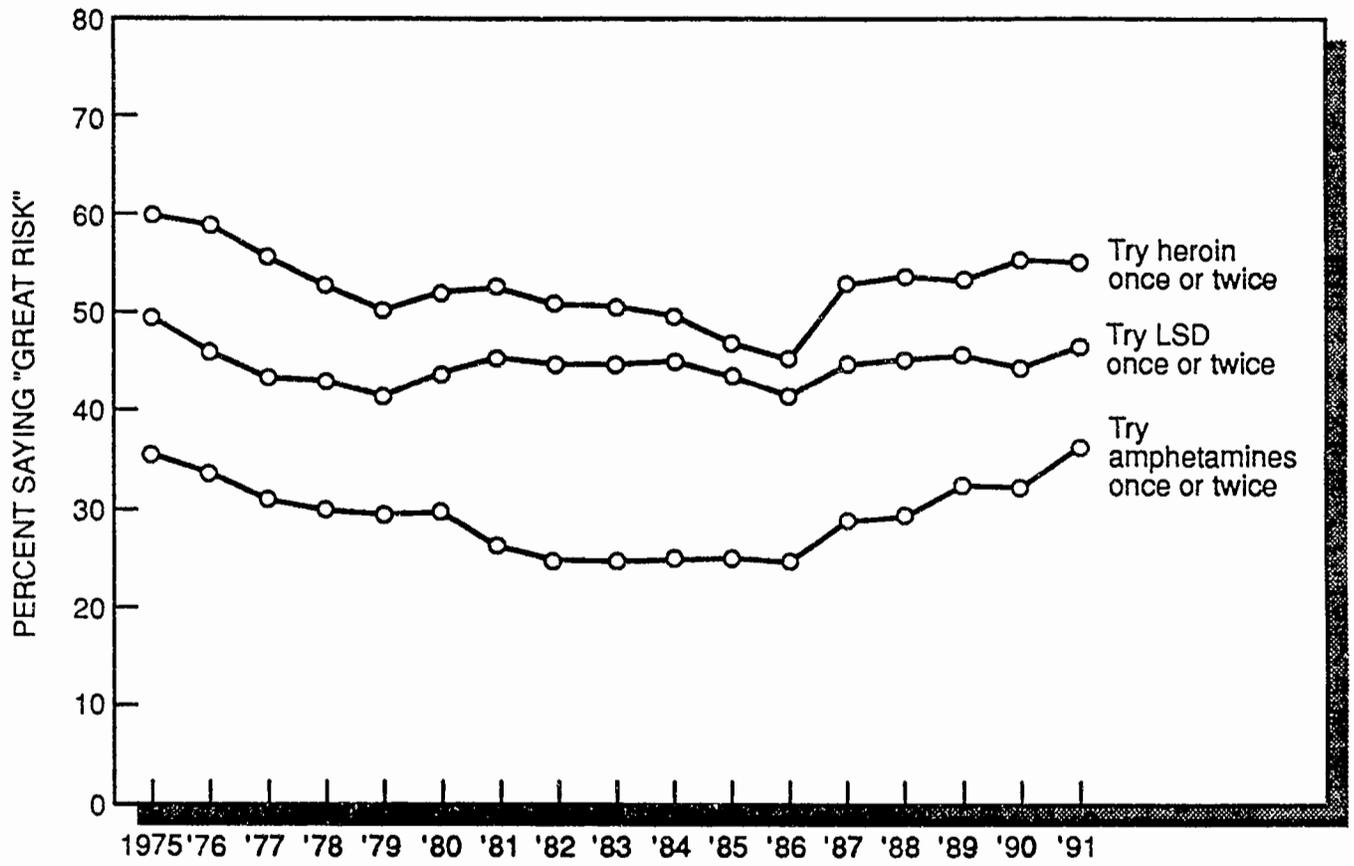
Use: % using once or more in past 12 months

Risk: % saying great risk of harm in using once or twice

Availability: % saying fairly easy or very easy to get

FIGURE 25

Trends in Perceived Harmfulness: Other Drugs
All Seniors



amount of scientific and media attention was being devoted to the potential dangers of heavy marijuana use. Young people also had ample opportunity for vicarious learning about the effects of heavy use since such use was so widespread among their peers. Although there have been upward shifts in concerns about the harmfulness of occasional, and even experimental, use, they have not been as large in absolute terms, though they have been in proportional terms. For example, the proportion of seniors seeing great risk in trying *marijuana* has risen from 8% in 1978 to 27% in 1991, and the comparable rise for occasional use has been from 12% to 41%.

Figure 23 shows the trend in the perceived risk of regular use along with the trend in thirty-day prevalence of use to show more clearly their degree of covariance over time, which we interpret as reflecting a causal connection.²⁰ Also included is the trend line for the perceived availability of marijuana (see next chapter) to show its lack of covariance with use, and thus its inability to explain the downturn.

- A somewhat similar cross-time profile of attitudes has been emerging for *cocaine* (Figure 22). First, the percentage who perceived great risk in *trying cocaine* once or twice dropped steadily from 43% to 31% between 1975 and 1980, which generally corresponds to the period of rapidly increasing use. However, rather than reversing sharply, as did perceived risk for marijuana, perceived risk for experimental cocaine use moved rather little for the next six years, 1980 to 1986, corresponding to a fairly stable period in terms of actual prevalence in use. Then in 1987 perceived risk for experimenting with cocaine jumped sharply from 34% to 48% in a single year and in that year the first significant decline in use took place. From 1987 to 1989 it continued to rise as use fell, but in 1991 it may have stabilized. A quite similar thing happened for *crack cocaine* as for powder cocaine except that in 1991, perceived risk for crack actually began to fall. We think these changes in beliefs had an important impact on the behavior. Actually, perceived risk for *regular* cocaine use had begun to rise earlier, increasing gradually from 69% in 1980 to 82% in 1986; but we believe that that change did not translate into a change in behavior, as happened for marijuana, because so few high school seniors were regular users (unlike the situation with marijuana) and most probably did not expect to be. Thus, as we predicted earlier, it was not until their attitudes about behaviors which they saw as relevant to them (experimental and possibly occasional use) began to change that this class of attitudes began to affect their

²⁰In a recent journal article we address the alternate hypothesis that a general shift toward a more conservative lifestyle might account for the shifts in both attitudes and behaviors (Bachman, J.G., Johnston, L.D., O'Malley, P.M., and 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. The empirical evidence tended to contradict that hypothesis.

behavior.²¹ Figure 24 shows trends in perceived risk, perceived availability, and actual use simultaneously—again to show how shifts in perceived risk could explain the downturn in use while shifts in availability could not.

Just as we interpret the change in actual behavior between 1986 and 1991 to have resulted from changes in the risk associated with experimental and occasional use, we believe the changes in these attitudes to have resulted from two other factors: (1) the greatly increased media coverage of cocaine and its dangers which occurred in that interval (including many anti-drug “spots”) and (2) the tragic deaths in 1986 of sports stars Len Bias and Don Rogers, both of which were caused by cocaine. The latter events, we believe, helped to bring home first the notion that no one—regardless of age or physical condition—is invulnerable to being killed by cocaine, and second the notion that one does not have to be an addict or regular user to suffer such adverse consequences. Clearly the addictive potential of cocaine has been emphasized in the media, as well.

In 1991, although the perceived risk associated with cocaine in general did not change significantly from 1990, the perceived risk associated with crack cocaine actually declined, significantly so for experimental and occasional use. It is conceivable that seniors may have felt that the dangers of crack cocaine had been exaggerated. It is also possible—and we suspect more likely—that the relatively less attention paid in the mass media during 1990 and 1991 to the dangers of crack, compared to the great amount of publicity in earlier years, is responsible for the reverse in trend.

- There also had been an important increase, over a longer period, in the number who thought pack-a-day *cigarette* smoking involved great risk to the user (from 51% in 1975 to 64% in 1980). This shift corresponded with, and to some degree preceded, the downturn in regular smoking found in this age group (compare Figures 9f and 21). But between 1980 and 1984 this statistic showed no further increase, presaging the end of the decline in use. Since 1984, the percent perceiving great risk in regular smoking has risen about six percentage points. What may be most important is that still about a third (31%) of these young people do not believe there is a great risk in smoking a pack or more of cigarettes per day, despite all that is known today about the health consequences of cigarette smoking. As was mentioned above, considerably more of the younger children hold this mistaken belief.

²¹See 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. And also, 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* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

- For most of the *other illicit drugs*, the period from 1975 to 1979 marked a modest but consistent trend in the direction of fewer students associating much risk with experimental or occasional use of them (Table 20 and Figure 25). Only for *amphetamines* and *barbiturates* did this trend continue beyond 1979, until about 1982 in both cases. Over the next several years there was little change, although perceived risk of harm in experimental or occasional use of the illicit drugs other than marijuana all dropped slightly in 1985 and 1986. However, the perceived risk of experimental or occasional use increased for all drugs in 1987, but since then has pretty much stabilized.
- In sum, between 1975 and 1979 there was a distinct decline in perceived harmfulness associated with use of all the illicit drugs. Since 1979, there has been a dramatic increase in concerns about regular marijuana use, and a considerable increase in concerns about the use of marijuana at less frequent levels. Since 1986 there has been a sharp increase in the risks associated with cocaine use—particularly at the experimental and occasional use levels—and some increase in perceived risk for virtually all of the other illicit drugs, as well (Figure 25).
- The perceived risk of *PCP*, though very high relative to other drugs in 1988, has fallen back since then. This is almost surely due to the reduced attention paid by the media to this drug and the substantial reduction in the number of users from whom seniors can learn vicariously.
- After showing little systematic change in the latter half of the 1970s, the perceived risks associated with alcohol use at various levels have risen some during the 1980s (though not nearly so dramatically as the perceived risks associated with marijuana and cocaine). The proportions perceiving great risk of harm in having 1 to 2 drinks nearly every day rose from 20% in 1980 to 33% in 1991. The proportions perceiving great risk in having 4 to 5 drinks nearly every day rose slightly from 66% to 70% over the same period, while the corresponding figures for *occasional binge drinking* (having 5 or more drinks once or twice a weekend) rose by more—from 36% to 49%. (Recall that the reported prevalence of occasional binge drinking—having 5 or more drinks in a row at least once in the prior two weeks—declined in the same period, from 41% in 1980 to 30% in 1991.) These increases in perceived risk tended to be followed by some declines in the actual behaviors—once again suggesting the importance of these beliefs in influencing behavior.

PERSONAL DISAPPROVAL OF DRUG USE

A different set of questions was developed to try to measure the moral sentiment respondents attach to various types of drug use. The phrasing, "Do you disapprove of people (who are 18 or older) doing each of the following"²² was adopted.

Extent of Disapproval Among Twelfth Graders

- The vast majority of seniors do not condone regular use of any of the illicit drugs (see Table 22). Even regular marijuana use is disapproved by 89%, and regular use of each of the other illicit receives disapproval from between 96% and 98% of today's high school seniors.
- For each of the drugs included in the question, fewer people indicate disapproval of experimental or occasional use than of regular use, as would be expected. The differences are not great, however, for the illicit drugs other than marijuana, because nearly all seniors disapprove even of experimentation. For example, 90% disapprove experimenting with *LSD*, 94% with *cocaine*, and 96% with *heroin*.
- For *marijuana*, the rate of disapproval varies substantially for different usage habits, although not as much as it did in the past. Some 69% disapprove of trying it versus 89% who disapprove of regular use.
- Smoking a pack (or more) of *cigarettes* per day receives the disapproval of 71% of the age group.
- *Moderate daily drinking* at the rate of one or two drinks daily is disapproved by 77% of the seniors. A curious finding is that *weekend binge drinking* (five or more drinks once or twice each weekend) is acceptable to more seniors than is moderate daily drinking; only 67% disapprove of having five or more drinks once or twice a weekend. This is in spite of the fact that more seniors associate great risk with weekend binge drinking (49%) than with moderate daily drinking (33%).
- One likely explanation for these anomalous findings may be the fact that a greater proportion of this age group are themselves weekend binge drinkers rather than moderate daily drinkers. They thus express attitudes accepting of their own behavior, even though such attitudes may be somewhat inconsistent with their beliefs about possible consequences. It also may well be that the ubiquitous advertising of alcohol use in "partying" situations has managed to increase acceptability from what it would be in the absence of such advertising.

²²The age specification was originally introduced to hold constant the nature of the behavior about which different age groups were being asked.

TABLE 21
Disapproval of Drug Use by
Eighth, Tenth, and Twelfth Graders, 1991

<i>Q. Do you disapprove of people who . . .</i>	<u>Percent who disapprove or strongly disapprove^a</u>		
	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade^b</u>
Try marijuana once or twice	84.6	74.6	68.7
Smoke marijuana occasionally	89.5	83.7	79.4
Smoke marijuana regularly	92.1	90.4	89.3
Try "crack" once or twice	91.7	92.5	92.1
Take "crack" occasionally	93.3	94.3	94.2
Try cocaine powder once or twice	91.2	90.8	88.0
Take cocaine powder occasionally	93.1	94.0	93.0
Try inhalants once or twice	84.9	85.2	NA
Take inhalants regularly	90.6	91.0	NA
Try steroids	89.8	90.0	90.5
Take smokeless tobacco regularly	79.1	75.4	NA
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	51.7	37.6	29.8
Take one or two drinks nearly every day	82.2	81.7	76.5
Have five or more drinks once or twice each weekend	85.2	76.7	67.4
Smoke one or more packs of cigarettes per day	82.8	79.4	71.4
Approx. N =	(17500)	(14800)	(2550)

^a Answer alternatives were: (1) Don't disapprove, (2) Disapprove, (3) Strongly disapprove, (4) Can't say, drug unfamiliar.

^b The twelfth grade questions ask about people who are 18 or older.

Extent of Disapproval Among Eighth and Tenth Graders

- As Table 21 illustrates, the rates of disapproval of drug use among the younger students are at least as high as they are among seniors, and sometimes higher.
- All three grade levels show very high and fairly comparable levels of disapproval for ***powder cocaine*** and ***crack cocaine***.
- The same is true for the use of ***steroids***.
- Attitudes about ***inhalant*** use have only been asked of the eighth and tenth grade students, and in both cases about 85% say they disapprove of trying them.
- For ***marijuana*** the disapproval rates go up as one moves down in grade level. To illustrate, 69% of twelfth graders disapprove of trying marijuana vs. 75% of tenth graders and 85% of eighth graders. There may, of course, be some tendency for these attitudes to shift with age, but it is also possible that these differences reflect some important differences between class cohorts.
- For ***alcohol***, disapproval also increases as one moves down in grade level. For example, 67% of the seniors, 77% of the tenth graders, and 85% of the eighth graders disapprove of weekend binge drinking.
- Similarly for ***cigarette*** use, 71% of seniors, 79% of tenth graders, and 83% of eighth graders disapprove of smoking one or more packs per day.

Trends in Disapproval Among Seniors

- Between 1975 and 1977 a substantial decrease occurred in disapproval of ***marijuana*** use at any level of frequency (see Table 22, and Figure 26a in next chapter). About 14% fewer seniors in the class of 1977 (compared with the class of 1975) disapproved of experimenting, 11% fewer disapproved of occasional use, and 6% fewer disapproved of regular use. These undoubtedly were continuations of trends which began in the late 60's, as the norms of American young people against illicit drug use were seriously eroded. Since 1977, however, there has been a substantial reversal of that trend, with disapproval of experimental marijuana use having risen by 35%, disapproval of occasional use by 35%, and disapproval of regular use by 24%, though there were no further significant changes in 1991.
- Until 1980 the proportion of seniors who disapproved trying ***amphetamines*** had remained extremely stable (at 75%). This proportion dropped slightly in 1981 (to 71%), but increased thereafter and reached 87% in 1991.

- During the late 1970's personal disapproval of experimenting with *barbiturates* had been increasing (from 78% in 1975 to 84% in 1979). It then remained relatively stable through 1984, when it began to increase again. By 1990 it had reached 91%, where it remains in 1991.
- Concurrent with the years of increase in actual *cocaine* use, disapproval of experimental use of cocaine had declined somewhat, from a high of 82% in 1976 down to 75% in 1979. It then leveled for four years, edged upward for a couple of years to about 80% in 1986, and since then has risen significantly so that 94% of seniors now disapprove of trying cocaine.
- We believe that the parallel trends between perceived risk and disapproval—particularly for marijuana and cocaine—are no accident. We hypothesize that perceived risk influences one's disapproval of a drug-using behavior. As levels of personal disapproval change, on average, and these individually held attitudes are then communicated among friends and acquaintances, perceived norms also change (as will be illustrated in the next chapter).
- Disapproval of regular *cigarette* smoking (a pack or more per day) has changed surprisingly little throughout this study. Between 1975 and 1980, disapproval increased from 68% to 71%. During the 1980s, disapproval rates fluctuated slightly, never exceeding 75%; and in 1991 the disapproval rate is 71%, identical to the 1980 figure. This lack of change is surprising because of all the anti-tobacco changes in laws and policies that have occurred. Very likely, the efforts of the tobacco industry in promoting and advertising tobacco to young people help account for the lack of change in disapproval.
- Since 1980, disapproval of alcohol use has risen very gradually (and not entirely consistently). Disapproval of weekend binge drinking has risen by 13%, from 56% in 1980 to a high of 69% in 1990, down to 67% in 1991. It is also interesting to note that the proportion of seniors who disapprove of even trying alcohol has risen, from a low point of 16% in 1980 to 30% in 1991.

ATTITUDES REGARDING THE LEGALITY OF DRUG USE

Since, at the beginning of the study, the legal restraints on drug use appeared likely to be in a state of flux for some time, we decided to measure attitudes about legal sanctions. As it turns out, some dramatic changes in these attitudes have occurred during the life of the study. Table 23 presents a set of questions on this subject along with the answers provided by each senior class. The set lists a sampling of illicit and licit drugs and asks whether their use should be prohibited by law. A distinction is consistently made between use in public and use in private—a distinction which proved quite important in the results.

TABLE 23

Trends in Twelfth Graders' Attitudes Regarding Legality of Drug Use

	Percentage saying "yes" ^a																Class of '90-'91 change
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	
Q. Do you think that people (who are 18 or older) should be prohibited by law from doing each of the following? ^b																	
Smoke marijuana in private	32.8	27.5	26.8	25.4	28.0	28.9	35.4	36.6	37.8	41.6	44.7	43.8	47.6	51.8	51.5	56.0	51.6
Smoke marijuana in public places	63.1	59.1	58.7	59.5	61.8	66.1	67.4	72.8	73.6	75.2	78.2	78.9	79.7	81.3	80.0	81.9	79.8
Take LSD in private	67.2	65.1	63.3	62.7	62.4	65.8	62.6	67.1	66.7	67.9	70.6	69.0	70.8	71.5	71.6	72.9	68.1
Take LSD in public places	85.8	81.9	79.3	80.7	81.5	82.8	80.7	82.1	82.8	82.4	84.8	84.9	85.2	86.0	84.4	84.9	83.9
Take heroin in private	76.3	72.4	69.2	68.8	68.5	70.3	68.8	69.3	69.7	69.8	73.3	71.7	75.0	74.2	74.4	76.4	72.8
Take heroin in public places	90.1	84.8	81.0	82.5	84.0	83.8	82.4	82.5	83.7	83.4	85.8	85.0	86.2	86.6	85.2	86.7	85.4
Take amphetamines or barbiturates in private	57.2	53.5	52.8	52.2	53.4	54.1	52.0	53.5	52.8	54.4	56.3	56.8	59.1	60.2	61.1	64.5	59.7
Take amphetamines or barbiturates in public places	79.6	76.1	73.7	75.8	77.3	76.1	74.2	75.5	76.7	76.8	78.3	79.1	79.8	80.2	79.2	81.6	79.7
Get drunk in private	14.1	15.6	18.6	17.4	16.8	16.7	19.6	19.4	19.9	19.7	19.8	18.5	18.6	19.2	20.2	23.0	22.0
Get drunk in public places	55.7	50.7	49.0	50.3	50.4	48.3	49.1	50.7	52.2	51.1	53.1	52.2	53.2	53.8	52.6	54.6	54.3
Smoke cigarettes in certain specified public places	NA	NA	42.0	42.2	43.1	42.8	43.0	42.0	40.5	39.2	42.8	45.1	44.4	48.4	44.5	47.3	44.9
Approx. N =	2620	2959	3113	3783	3288	3224	3611	3627	3315	3236	3254	3074	3332	3288	2813	2571	2512

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

^aAnswer alternatives were: (1) No, (2) Not sure, and (3) Yes.

^bThe 1975 question asked about people who are "20 or older."

Attitudes of Seniors in 1991

- The great majority of seniors believe that the use in public of *illicit drugs other than marijuana* should be prohibited by law (e.g., 80% in the case of amphetamines and barbiturates, 85% for heroin). While the distinction between attitudes about the legality of use in public versus private settings proved to be an important one, today only about 10% to 20% fewer think the use of these drugs in private should be legally prohibited.
- The great majority (80%) also favor legally prohibiting *marijuana* use in public places, despite the fact that over one-third of them have used marijuana themselves, and despite the fact that they do not judge it to be as dangerous a drug as the others. But considerably fewer (52%) feel that marijuana use in private should be prohibited.
- Fully 45% believe that *cigarette* smoking in public places should be prohibited by law. Slightly more think *getting drunk* in such places should be prohibited (54%).
- For *all drugs*, fewer students believe that use in private settings should be illegal. This is particularly true for alcohol and marijuana.

Trends in These Attitudes

- From 1975 through 1977 there was a modest decline (shifts of 4% to 7%, depending on the substance) in the proportion of seniors who favored legal prohibition of private use of *any of the illicit drugs*. By 1991, however, virtually all of these proportions had increased.
- Over the past twelve years (from 1979 to 1991) there has been a very appreciable rise in the proportion favoring legal prohibition of *marijuana* use, either in private (up from 28% to 52%) or in public (up from 62% to 80%).
- For other illicit drugs, (*LSD, heroin, amphetamines, and barbiturates*), the changes are more modest, but between 1981 and 1987 all showed increased proportions favoring prohibition. Percentages in 1991 are all very close to the 1987 percentages, reflecting some decline in 1991.
- There has been very little change in the proportion of seniors who say *smoking cigarettes* in certain specified public places should be prohibited by law. In 1977 some 42% held this view vs. 43% in 1985, and 45% in 1991. Were the question more specific as to the places in which smoking might be prohibited (e.g., hospitals, restaurants, etc.) different results might emerge.

- There has been rather little change in seniors' preferences about the illegality of *drunkenness* in public or private places. The stability of attitudes about the preferred legality for this culturally ingrained drug-using behavior contrasts sharply with the lability of preferences regarding the legality of the illicit drugs.

THE LEGAL STATUS OF MARIJUANA

Another set of questions goes into more detail about what legal sanctions, if any, students think should be attached to the use and sale of marijuana. Respondents also are asked to guess how they would be likely to react to legalized use and sale of the drug. While the answers to such a question must be interpreted cautiously, a special study of the effects of marijuana decriminalization at the state level, conducted as part of the Monitoring the Future series, suggests that in the aggregate their predictions about how they would react proved relatively accurate.²³

Attitudes and Predicted Response to Legalization

- As shown in Table 24, a little less than one-fifth of all seniors believe marijuana use should be entirely legal (18%), about another one-fifth (19%) feel it should be treated as a minor violation—like a parking ticket—but not as a crime. Another 14% indicate no opinion, leaving roughly half (49%) who feel it still should be treated as a crime.
- Asked whether they thought it should be legal to sell marijuana if it were legal to use it, half (51%) said “yes.” However, nearly all of these respondents would permit sale *only* to adults.
- High school seniors predict that they would be little affected personally by the legalization of either the sale or the use of marijuana. Nearly three-fourths (71%) of the respondents say that they would not use the drug even if it were legal to buy and use, and another 14% indicate they would use it about as often as they do now, or less. Only 3% say they would use it more often than at present and only another 6% think they would try it. Some 6% say they do not know how they would react. The special study of the effects of decriminalization at the state level during the late seventies (which falls well short of the fully-legalized situation posited in this question) revealed no evidence of any impact of decriminalization on the use of marijuana, nor even on attitudes and beliefs concerning its use. On the other hand, the times today are very different, with more peer disapproval and more rigorous enforcement, and the symbolic message of legalizing or decriminalizing

²³See Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1981). *Marijuana decriminalization: The impact on youth, 1975-1980* (Monitoring the Future Occasional Paper No. 13). Ann Arbor: Institute for Social Research.

TABLE 24

Trends in Twelfth Graders' Attitudes Regarding Marijuana Laws

(Entries are percentages)

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991
<i>Q. There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?</i>																	
Using marijuana should be entirely legal	27.3	32.6	33.6	32.9	32.1	26.3	23.1	20.0	18.9	18.6	16.6	14.9	15.4	15.1	16.6	15.9	18.0
It should be a minor violation like a parking ticket but not a crime	25.3	29.0	31.4	30.2	30.1	30.9	29.3	28.2	26.3	23.6	25.7	25.9	24.6	21.9	18.9	17.4	19.2
It should be a crime	30.5	25.4	21.7	22.2	24.0	26.4	32.1	34.7	36.7	40.6	40.8	42.5	45.3	49.2	50.0	53.2	48.6
Don't know	16.8	13.0	13.4	14.6	13.8	16.4	15.4	17.1	18.1	17.2	16.9	16.7	14.8	13.9	14.6	13.6	14.3
<i>Q. If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?</i>																	
No	27.8	23.0	22.5	21.8	22.9	25.0	27.7	29.3	27.4	30.9	32.6	33.0	36.0	36.8	38.8	40.1	36.8
Yes, but only to adults	37.1	49.8	52.1	53.6	53.2	51.8	48.6	46.2	47.6	45.8	43.2	42.2	41.2	39.9	37.9	38.8	41.4
Yes, to anyone	16.2	13.3	12.7	12.0	11.3	9.6	10.5	10.7	10.5	10.6	11.2	10.4	9.2	10.5	9.2	9.6	9.4
Don't know	18.9	13.9	12.7	12.6	12.6	13.6	13.2	13.8	14.6	12.8	13.1	14.4	13.6	12.8	14.1	11.6	12.5
<i>Q. If marijuana were legal to use and legally available, which of the following would you be most likely to do?</i>																	
Not use it, even if it were legal and available	53.2	50.4	50.6	46.4	50.2	53.3	55.2	60.0	60.1	62.0	63.0	62.4	64.9	69.0	70.1	72.9	70.7
Try it	8.2	8.1	7.0	7.1	6.1	6.8	6.0	6.3	7.2	6.6	7.5	7.6	7.3	7.1	6.7	7.0	6.3
Use it about as often as I do now	22.7	24.7	26.8	30.9	29.1	27.3	24.8	21.7	19.8	19.1	17.7	16.8	16.2	13.1	13.0	10.1	11.7
Use it more often than I do now	6.0	7.1	7.4	6.3	6.0	4.2	4.7	3.8	4.9	4.7	3.7	5.0	4.1	4.3	2.4	2.7	3.3
Use it less than I do now	1.3	1.5	1.5	2.7	2.5	2.6	2.5	2.2	1.5	1.6	1.6	2.0	1.3	1.5	2.1	1.1	1.6
Don't know	8.5	8.1	6.6	6.7	6.1	5.9	6.9	6.0	6.4	6.0	6.5	6.1	6.3	5.0	5.7	6.1	6.4
Approx. N =	2600	2970	3110	3710	3280	3210	3600	3624	3300	3220	3230	3080	3330	3277	2812	2570	2515

marijuana would likely be different, as well. Therefore, we do not believe that those findings from the late 1970s can be generalized to legalization of marijuana today.

Trends in Attitudes and Predicted Responses

- Between 1976 and 1979 seniors' preferences for decriminalization or legalization remained fairly constant; but in the past eleven years the proportion favoring outright legalization dropped by almost half (from 32% in 1979 to 18% in 1991), while there was a corresponding doubling in the proportion saying marijuana use should be a crime (from 24% to 49%).
- Also reflecting this increased conservatism about marijuana, somewhat fewer now would support legalized *sale*, even if *use* were to be made legal (down from 65% in 1979 to 51% in 1991).
- The predictions about personal marijuana use, if sale and use were legalized, have been quite similar for all high school classes. The slight shifts being observed are mostly attributable to the changing proportions of seniors who actually use marijuana.
- In sum, in recent years American young people have become much more supportive of legal prohibitions on the use of illegal drugs, whether used in private or in public. The fairly tolerant attitudes of students in the late 70's toward marijuana use have eroded considerably; more than twice as many now think it should be treated as a criminal offense, and correspondingly fewer think it should be entirely legal to use.

Chapter 9

THE SOCIAL MILIEU

The preceding chapter dealt with seniors' own attitudes about various forms of drug use. Attitudes about drugs, as well as drug-related behaviors, obviously do not occur in a social vacuum. Drugs are discussed in the media; they are a topic of considerable interest and conversation among young people; they are also a matter of much concern to parents, concern which often is strongly communicated to their children. Young people are known to be affected by the actual drug-taking behaviors of their friends and acquaintances, as well as by the availability of the various drugs. This section presents data on several of these relevant aspects of the social milieu.

We begin with two sets of questions about parental and peer attitudes, questions which closely parallel the questions about respondents' own attitudes about drug use, discussed in the preceding chapter. Since measures of parental attitudes have not been carried in the study in recent years, those mentioned here are based on the much earlier 1979 results.

PERCEIVED ATTITUDES OF PARENTS AND FRIENDS

Perceptions of Parental Attitudes

- A large majority of seniors in 1979 felt that their parents would disapprove or strongly disapprove of their exhibiting *any of the drug use behaviors* which are listed in Table 25. (The data for the perceived parental attitudes are not given in tabular form, but are displayed in Figures 26a and b and 27.) In fact, because there was so little variability in the students' answers to these questions, they were dropped to make room for other questions. With the changing climate in recent years, as exemplified by the dramatic shifts in students' attitudes, it seems likely that parental attitudes would be even more restrictive today.
- Drug use appears to constitute one area in which the position of parents approaches complete unanimity. Over 97% of seniors said that their parents would disapprove or strongly disapprove of their smoking *marijuana* regularly, even trying *LSD* or *amphetamines*, or having four or five *drinks* every day. (Although the questions did not include more frequent use of LSD or amphetamines, or any use of heroin, it is obvious that if such behaviors had been included in the list virtually all seniors would have indicated parental disapproval.)

TABLE 25

Trends in Proportion of Friends Disapproving of Drug Use

Twelfth Graders

Q. How do you think your close friends feel (or would feel) about you . . .	Adjust-ment Factor	Percentage saying friends disapprove ^a																Class of '90-'91 change	
		Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990		Class of 1991
Trying marijuana once or twice	(-0.5)	44.3	NA	41.8	NA	NA	42.6	46.4	50.3	52.0	54.1	54.7	56.7	58.0	62.9	63.7	70.3	69.7	-0.6
Smoking marijuana occasionally	(+0.8)	54.8	NA	49.0	NA	48.2	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4	75.8	-0.6
Smoking marijuana regularly	(+4.6)	75.0	NA	69.1	NA	70.2	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7	85.9	-0.8
Trying LSD once or twice	(+2.0)	85.6	NA	86.6	NA	87.6	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9	87.9	0.0
Trying cocaine once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Taking cocaine occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	83.9	88.1	88.9	90.5	91.8	+1.3
Trying an amphetamine once or twice	(+2.2)	78.8	NA	80.3	NA	81.0	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2	85.3	+1.1
Taking one or two drinks nearly every day	(+7.8)	67.2	NA	71.0	NA	71.0	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0	76.6	-2.4
Taking four or five drinks every day	(+9.3)	89.2	NA	88.1	NA	88.5	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2	86.4	-1.8
Having five or more drinks once or twice every weekend	(+4.7)	55.0	NA	53.4	NA	51.3	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0	58.1	-0.9
Smoking one or more packs of cigarettes per day	(+8.3)	63.6	NA	68.3	NA	73.4	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3	74.0	-1.3
Approx. N =		2488	NA	2615	NA	2716	2766	3120	3024	2722	2721	2688	2639	2815	2778	2400	2184	2160	

NOTE: Level of significance of difference between the two most recent classes: $s = .05$, $ss = .01$, $sss = .001$. 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.

^b These figures have been adjusted by the factors reported in the first column to correct for a lack of comparability of question-context among administrations. (See text for discussion.)

- Even experimental use of *marijuana* was seen as a parentally disapproved activity by the great majority of the 1979 seniors (85%). Assuming that the students were generally correct about their parents' attitudes, these results clearly showed a substantial generational difference of opinion about this drug.
- Also likely to be perceived as rating high parental disapproval (92% disapproval) were *occasional marijuana* use, taking one or two *drinks* nearly every day, and pack-a-day *cigarette* smoking.
- Slightly lower proportions of seniors (85%) felt their parents would disapprove of their having five or more *drinks* once or twice every weekend. This happened to be exactly the same percentage as said that their parents would disapprove of simply experimenting with marijuana, showing a considerably more tolerant parental attitude toward alcohol than marijuana.

Seniors' Perceptions of Their Friends' Attitudes

- Since the beginning of the study, a parallel set of questions has asked respondents to estimate their friends' attitudes about drug use (Table 25). These questions ask, "How do you think your close friends feel (or would feel) about you [taking the specified drug at the specified level]. . .?" The highest levels of peer disapproval in 1991 for experimenting with a drug are associated with trying *cocaine* (92%) and trying *LSD* (88%). Presumably, if *heroin* or *PCP* were on the list they would receive very high peer disapproval, as well.
- Even experimenting with *marijuana* is now "out" with most seniors' friends (70%); and a very large majority think their friends would disapprove if they smoked marijuana regularly (86%).
- Three-quarters of all seniors think they would face peer disapproval if they smoked a pack or more of *cigarettes daily* (74%).
- While *heavy drinking on weekends* is judged by more than half (58%) to be disapproved of by their friends (many of whom exhibit that behavior themselves), substantially more (77%) think *consumption of one or two drinks daily* would be disapproved. The great majority (86%) would face the disapproval of their friends if they engaged in *heavy daily drinking*.
- In sum, peer norms among seniors differ considerably for the various drugs and for varying degrees of involvement with those drugs, but overall they tend to be quite conservative. The great majority of seniors have friendship circles which do not condone use of the *illicit drugs other than marijuana*, and 86% feel that their friends would disapprove of *regular marijuana* use. In fact, over two-thirds (70%) of them now believe their friends would disapprove of their even trying marijuana.

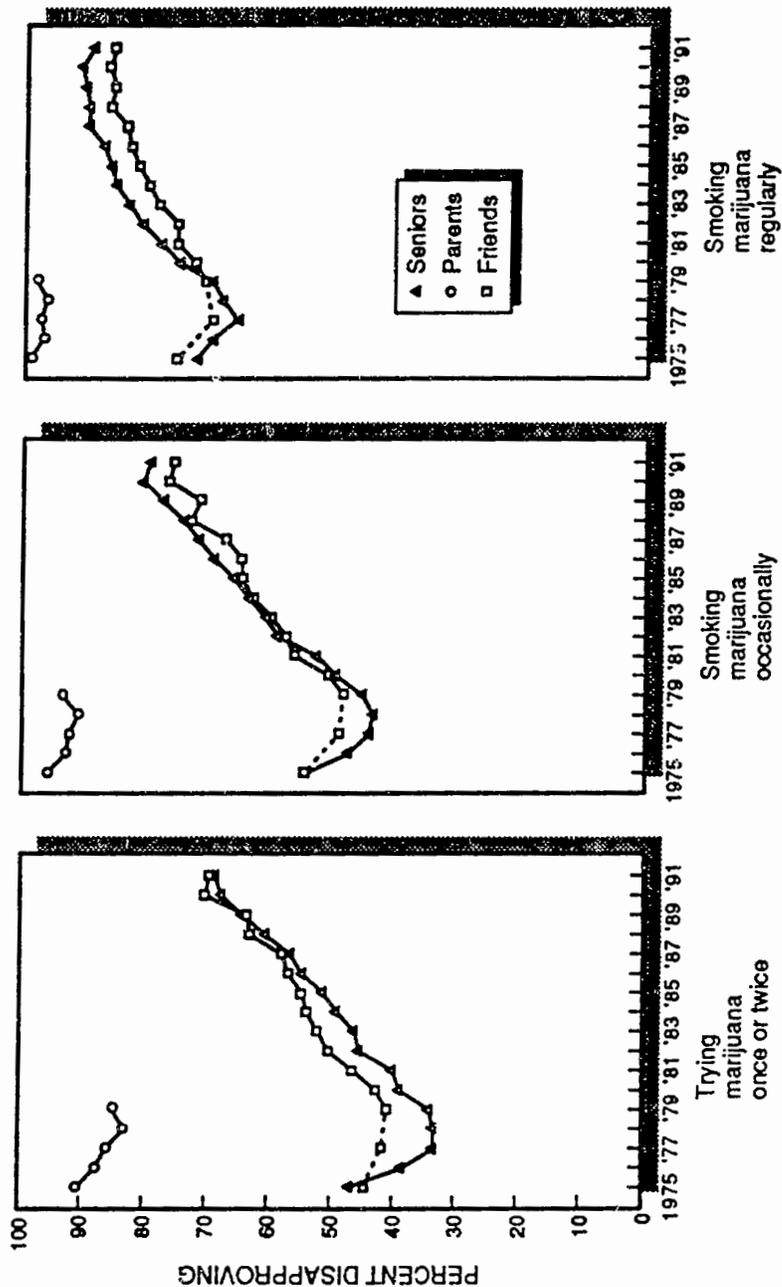
A Comparison of the Attitudes of Parents, Peers, and Respondents

- A comparison of seniors' perceptions of friends' disapproval with their perceptions of parents' disapproval, in the years for which comparison is possible, shows several interesting findings.
- First there was rather little variability among different students in their perceptions of their parents' attitudes: on any of the drug behaviors listed nearly *all* said their parents would disapprove. Nor was there much variability among the different drugs in perceived parental attitudes. Peer norms varied much more from drug to drug. The net effect of these facts is likely to be that peer norms have a much greater chance of explaining variability in the respondent's own individual attitudes or use than parental norms, simply because the peer norms vary more. That is quite different than saying that parental attitudes do not matter, or even that they matter less than peer attitudes.
- Despite there being less variability in parental attitudes, the *ordering* of drug use behaviors was much the same for them as for peers (e.g., among the illicit drugs asked about, the highest frequencies of perceived disapproval were for trying cocaine, while the lowest frequencies were for trying marijuana).
- A comparison with the seniors' own attitudes regarding drug use (see Figures 26a and b and 27) reveals that on the average they are much more in accord with their peers than with their parents. The differences between seniors' own disapproval ratings in 1979 and those attributed to their parents tended to be large, with parents seen as more conservative overall in relation to *every drug*, licit or illicit. The largest difference occurred in the case of *marijuana* experimentation, where only 34% of seniors (in 1979) said they disapproved vs. 85% (of 1979 seniors) who said their parents would disapprove. Despite the doubling in seniors' own disapproval rates (to 69% in 1991), it remains the most controversial of the illicit drug-using behaviors listed here.

Trends in Seniors' Perceptions of Parents' and Friends' Attitudes

- Several important changes in seniors' perceived attitudes of others have been taking place recently—and particularly among peers. These shifts are presented graphically in Figures 26a and b and 27. As can be seen in those figures, adjusted (dotted) trend lines have been introduced before 1980. This was done because we discovered that the deletion in 1980 of the questions about parents' attitudes—which up until then had been located immediately preceding the questions about friends' attitudes—removed what was judged to be an artifactual depression of the ratings of friends' attitudes, a phenomenon known as a question-context effect. This effect was particularly evident in the trend lines dealing with alcohol use, where otherwise smooth lines showed abrupt upward

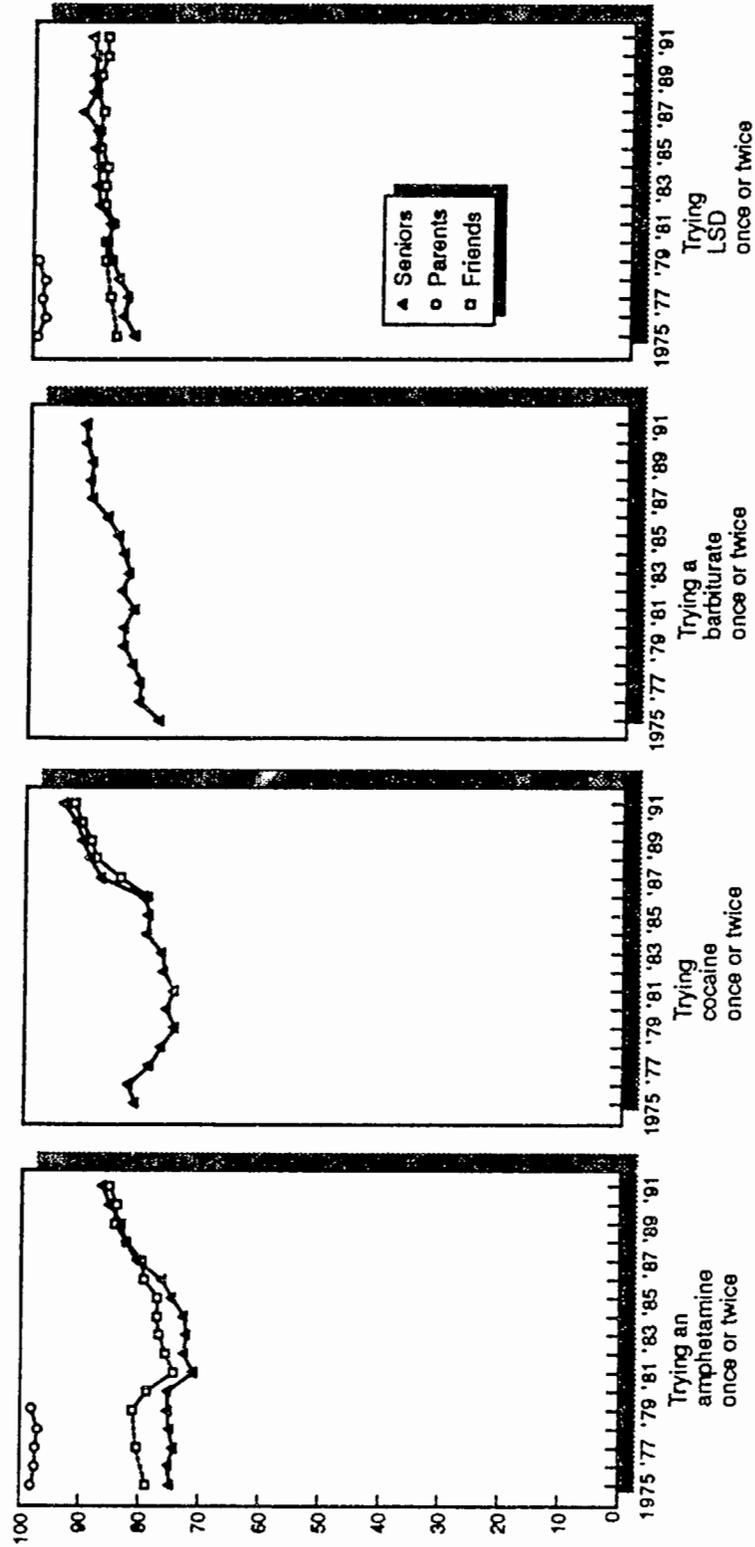
FIGURE 26a
Trends in Disapproval of Illicit Drug Use
Seniors, Parents, and Peers



Note: Points connected by dotted lines have been adjusted because of lack of comparability of question-context among administrations. (See text for discussion.)

FIGURE 26b

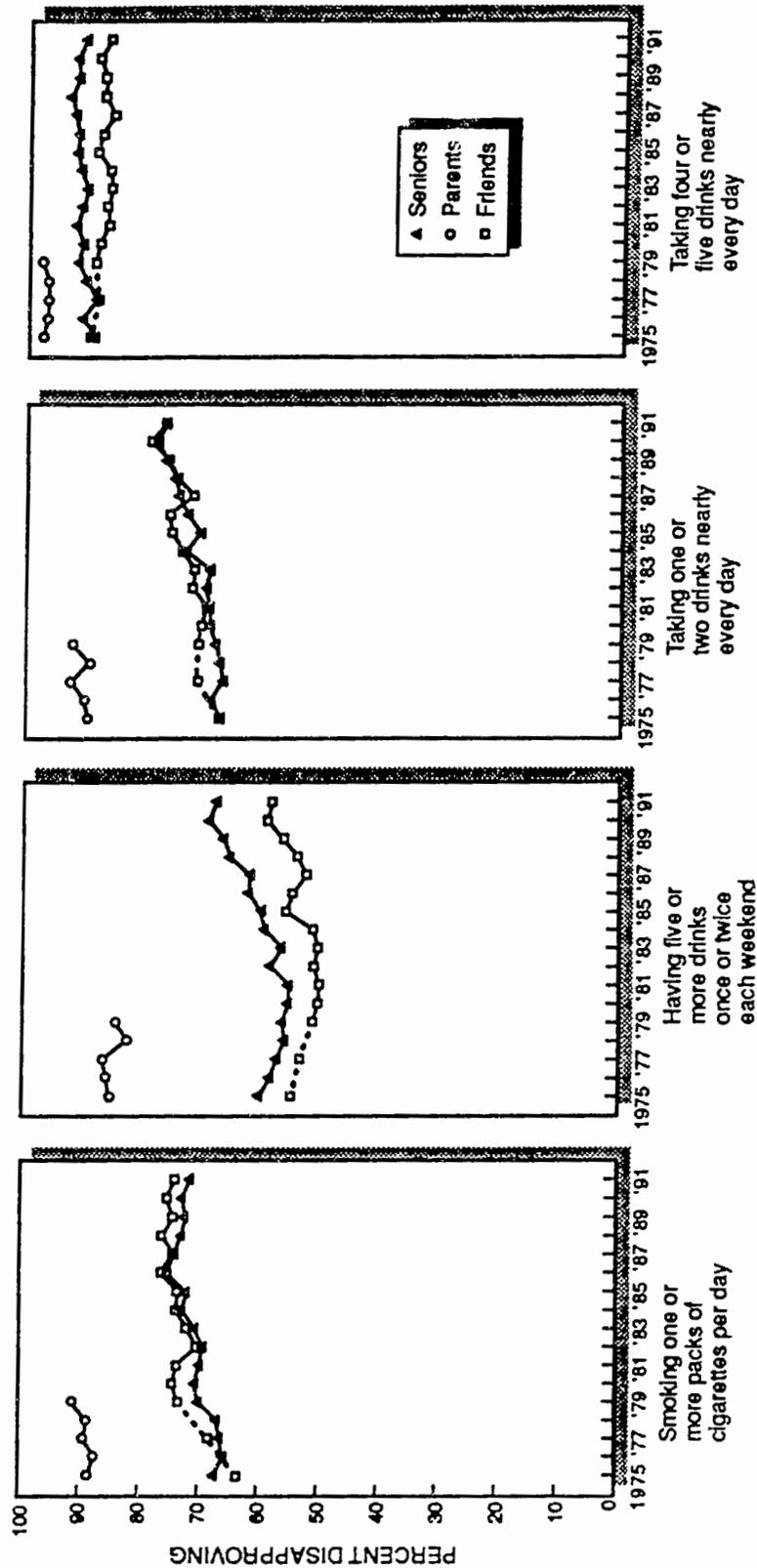
Trends in Disapproval of Illicit Drug Use
Seniors, Parents, and Peers



Note: Points connected by dotted lines have been adjusted because of lack of comparability of question-context among administrations. (See text for discussion.)

FIGURE 27

Trends in Disapproval of Licit Drug Use
Seniors, Parents, and Peers



Note: Points connected by dotted lines have been adjusted because of lack of comparability of question-context among administrations. (See text for discussion.)

shifts in 1980. It appears that when questions about parents' attitudes were present, respondents tended to understate peer disapproval in order to emphasize the difference in attitudes between their parents and their peers. In the adjusted lines, we have attempted to correct for that artifactual depression in the 1975, 1977, and 1979 scores.²⁴ We think the adjusted trend lines give a more accurate picture of the change taking place. For some reason, the question-context effect seems to have more influence on the questions dealing with cigarettes and alcohol than on those dealing with illicit drugs.

- For each level of *marijuana* use—trying once or twice, occasional use, regular use—there had been a drop in perceived disapproval for both parents and friends up until 1977 or 1978. We know from our other findings that these perceptions correctly reflected actual shifts in the attitudes of their peer groups—that is, that acceptance of marijuana was in fact increasing among seniors (see Figures 26a and b). There is little reason to suppose such perceptions are less accurate in reflecting shifts in parents' attitudes. Therefore, we conclude that the social norms regarding marijuana use among adolescents had been relaxing before 1979. However, consistent with the seniors' reports about their own attitudes, there has been a sharp reversal in peer norms regarding all levels of marijuana use.
- Until 1979 there had been relatively little change in either self-reported attitudes or perceived peer attitudes toward *amphetamine* use, but in 1981 both measures showed significant and parallel dips in disapproval (as use rose sharply). Since 1981 disapproval has been rising (as use has declined), and peer disapproval is now at the highest level recorded in the study (85%).
- Peer disapproval of *LSD* has been high and relatively stable for some years.
- While perceived attitudes of friends were not asked for *cocaine* (until 1986), or for *barbiturates*, it seems likely that such perceptions moved in parallel to the seniors' own attitudes, since such parallel movement has been observed for virtually all other drugs. (See Figures 26a and b.) This would suggest that disapproval has risen gradually but steadily for *barbiturate* use since 1975. Regarding experimenting with *cocaine*, seniors' own disapproval

²⁴The correction evolved as follows: We assumed that a more accurate estimate of the true change between 1979 and 1980 could be obtained by taking an average of the changes observed in the year prior and the year subsequent, rather than by taking the observed change (which we knew to contain the effect of a change in question context). We thus calculated an *adjusted* 1979–1980 change score by taking an average of one-half the 1977–1979 change score (our best estimate of the 1978–1979 change) plus the 1980–1981 change score. This estimated change score was then subtracted from the observed change score for 1979–1980, the difference being our estimate of the amount by which peer disapproval of the behavior in question was being understated because of the context in which the questions occurred prior to 1980. The 1975, 1977, and 1979 observations were then adjusted upward by the amount of that correction factor. (Table 20 shows the correction factors in the first column.)

dropped from 1975 to 1979, but then rose very gradually through 1991. Questions on perceived attitudes of friends for experimental and occasional use of cocaine were added in 1986. Between 1986 and 1991, these show a sharp increase in peer disapproval of experimental or occasional cocaine use, with the proportion saying that their close friends would disapprove of their experimenting with cocaine rising from 80% in 1986 to 92% in 1991. This corresponds to the period in which an even larger increase in perceived risk occurred, and we hypothesize that the change in the perceived dangers of a drug contribute to changes in the acceptability of using that drug.²⁵

- Regarding *regular cigarette smoking*, the proportion of seniors saying that their friends would disapprove of them smoking a pack-a-day or more rose from 64% (adjusted version) in 1975 to 74% in 1980. Beyond 1980, however, perceived peer disapproval has fluctuated by only a few percentage points, and it remains at 74% in 1991.
- For *alcohol* the perceived peer norms for *weekend binge drinking* moved pretty much in parallel with seniors' statements about their personal disapproval through 1985. This meant a slight decline in disapproval in the mid-seventies followed by a period of little change through 1984. Since then some divergence appears to have occurred, with seniors' reports of their own attitudes becoming less tolerant as perceived peer norms took longer to begin trending upward.

Heavy daily drinking is seen by the great majority (86% in 1991) as disapproved by peers, with little systematic change over more than a decade. Taking one or two drinks nearly every day has seen some growth in peer disapproval since 1987.

EXPOSURE TO DRUG USE BY FRIENDS AND OTHERS

It is generally acknowledged that much of youthful drug use is initiated through a peer social-learning process; and research has shown a high correlation between an individual's illicit drug use and that of his or her friends. Such a correlation can, and probably does, reflect several different causal patterns: (a) a person with friends who use a drug will be more likely to try the drug; (b) conversely, the individual who is already using a drug will be likely to introduce friends to the experience; and (c) one who is already a user is more likely to establish friendships with others who also are users.

Given the potential importance of exposure to drug use by others, we felt it would be useful to monitor students' association with others taking drugs, as well as their perceptions about the extent to which their friends use drugs. Two sets of questions, each

²⁵Johnston, L.D. (1991) Toward a theory of drug epidemics. In R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive Communication and Drug Abuse Prevention* (pp. 93-132). Hillsdale, N.J.: Lawrence Erlbaum.

covering all or nearly all of the categories of drug use treated in this report, asked seniors to indicate (a) how often during the past twelve months they were around people taking each of the drugs to get high or for "kicks," and (b) what proportion of their own friends use each of the drugs. (The questions dealing with friends' use are shown in Table 27. The data dealing with direct exposure to use may be found in Table 28.) Obviously, responses to these two questions are highly correlated with the respondents' own drug use; thus, for example, seniors who have recently used marijuana are much more likely to report that they have been around others getting high on marijuana, and that most of their friends use it.

Exposure to Drug Use by Seniors in 1991

- A comparison of the aggregated responses about friends' use, and about being around people in the last twelve months who were using various drugs to get high (in which questions reside on a different form of the questionnaire), reveals a high degree of correspondence between these two indicators of exposure. For each drug, the proportion of respondents saying "none" of their friends use it is fairly close to the proportion who say that during the last twelve months they have not been around anyone who was using that drug to get high. Similarly, the proportion saying they are "often" around people getting high on a given drug is roughly the same as the proportion reporting that "most" or "all" of their friends use that drug.
- As would be expected, reports of exposure and friends' use closely parallel the figures on seniors' own use (compare Figures 2 and 28). It thus comes as no surprise that the highest levels of exposure involve *alcohol*; a majority (55%) say they are "often" around people using it to get high. What *may* come as a surprise is that fully 30% of all seniors say that most or all of their friends go so far as to *get drunk* at least once a week. (This is consistent, however, with the fact that 30% said they personally had taken five or more drinks in a row at least once during the prior two weeks.)
- The drug to which students are next most frequently exposed is *marijuana*. Only 40% report no exposure during the year. Some 16% are "often" around people using it to get high, and another 19% are exposed "occasionally." But only one in ten (10%) now say that most or all of their friends smoke marijuana.
- *Amphetamines* are next with 24% of seniors reporting some exposure to use in the prior year, and 24% saying they have friends who use.
- Some 21% of all seniors have been around someone using *cocaine* to get high over the past year, and a third (27%) say they have some friends who use it.

TABLE 26

**Friends' Use of Drugs as Estimated by
Eighth, Tenth, and Twelfth Graders, 1991**

(Entries are percentages)

<i>Q. How many of your friends would you estimate . . .</i>	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
Smoke marijuana			
% saying none	78.1	51.7	34.2
% saying most or all	3.3	7.9	10.0
Use inhalants			
% saying none	79.5	82.7	80.8
% saying most or all	2.4	1.4	0.7
Take cocaine powder			
% saying none	91.6	85.3	80.2
% saying most or all	0.9	0.8	1.8
Take "crack"			
% saying none	91.4	86.8	82.4
% saying most or all	0.9	0.8	0.6
Take heroin			
% saying none	93.9	92.2	88.6
% saying most or all	0.7	0.6	0.4
Drink alcoholic beverages			
% saying none	27.9	7.1	8.8
% saying most or all	21.0	49.6	58.6
Get drunk at least once a week			
% saying none	57.2	24.9	20.2
% saying most or all	7.2	19.3	29.7
Smoke cigarettes			
% saying none	32.3	18.8	14.3
% saying most or all	11.8	18.2	21.8
Use smokeless tobacco			
% saying none	63.5	46.9	NA
% saying most or all	3.8	7.5	NA

NOTE: Approximate Ns for this table are: 8th grade=17500, 10th grade=14800, 12th grade=2340.

FIGURE 28

Proportion of Friends Using Each Drug
as Estimated by Eighth, Tenth, and Twelfth Graders, 1991

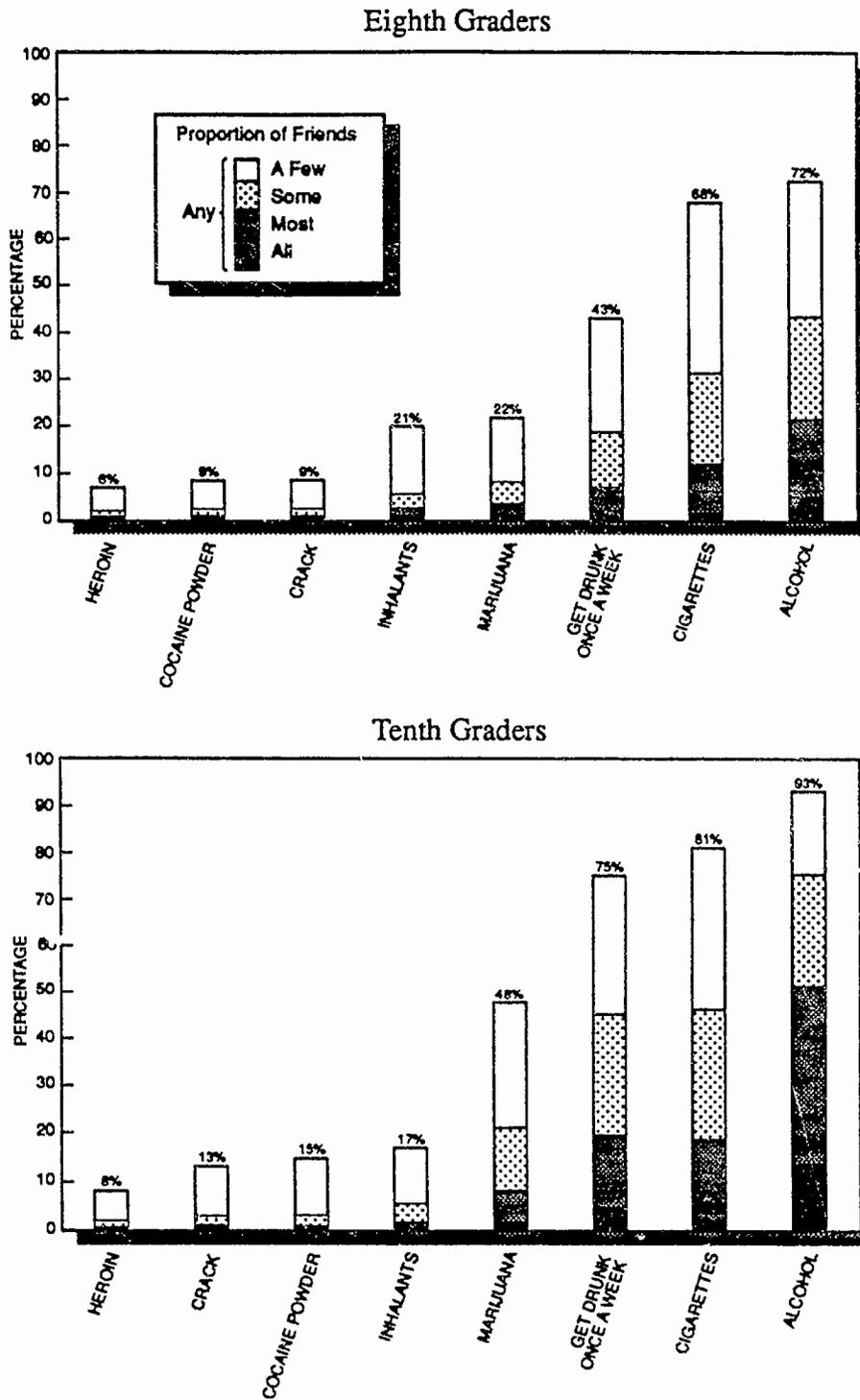
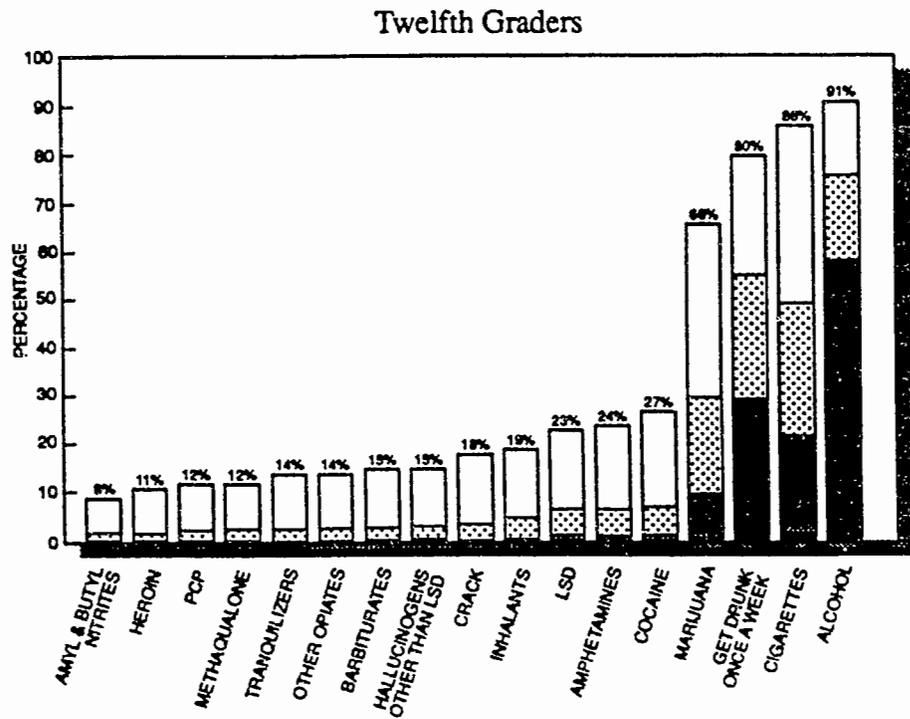


FIGURE 28 (cont.)

Proportion of Friends Using Each Drug
as Estimated by Eighth, Tenth, and Twelfth Graders, 1991



- For the *remaining illicit drugs* there are far lower rates, with *any* exposure to use in the past year ranging from 16% for LSD down to 5% for heroin.
- The majority of seniors (60%) report *no* exposure to *illicit drugs other than marijuana* during the prior year, but only a little over a third (36%) report no exposure to *any illicit drug* during the year. Thus exposure to *marijuana* use, at least, is still widespread, but exposure to the use of *drugs other than marijuana* occurs for “only” 40%.
- Regarding *cigarette smoking*, one in every five seniors (22%) reports that most or all of his or her friends smoke, and 86% have at least some friends who smoke.

Trends in Exposure to Drug Use by Seniors

- During the two-year interval from 1976 to 1978, seniors’ reports of exposure to *marijuana* use increased in just about the same proportion as percentages of actual monthly use. In 1979 both exposure to use and actual use stabilized, and since 1979 both have been dropping. The proportion saying they are often around people using marijuana decreased by more than half, from 39% in 1979 to 16% in 1991.
- *Cocaine* showed a consistent increase from 1976 to 1979 in the proportion of seniors exposed to users, as self-reported use rose. From 1979 to 1984 there was little change in exposure to use coinciding with a period of stability in self-reported use; and in 1985 and 1986 there was some increase in reported exposure to use. (These were also the peak years in self-reported use.) Since 1986 the seniors’ exposure to cocaine use has been dropping steadily, and the proportion saying they have any friends who use dropped from 46% in 1986 to 27% in 1991. In fact, in the two year interval from 1989 to 1991, this statistic dropped eleven percentage points.
- The relative stability in self-report data on *inhalant* use (adjusted) seems to be reflected in the exposure data, as well.
- Since 1979 there had been a gradual decrease in exposure to the use of *psychedelics other than LSD* which coincided with a continued decline in the self-reported use of this class of drugs.
- Exposure to *tranquilizer* use has generally been declining gradually since 1976, as has actual use.
- There also had been a gradual decrease in exposure to *barbiturates* and *LSD*, from 1975 through 1980. Then exposure to the use of both of these drugs remained level for two years, as did

TABLE 27

Trends in Proportion of Friends Using Drugs as Estimated by Twelfth Graders

(Entries are percentages)

Q. How many of your friends would you estimate . . .	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	Class of '90-'91
Take any illicit drug ^a																	
% saying none	14.2	15.4	13.1	12.5	11.0	14.6	13.7	17.4	19.0	17.6	17.8	18.3	20.9	23.1	29.0	30.9	+1.9
% saying most or all	31.9	31.7	33.2	36.3	37.0	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	16.7	11.6	11.7	+0.1
Take any illicit drug ^a other than marijuana																	
% saying none	33.3	44.5	42.5	43.6	38.7	36.7	35.3	38.8	38.7	38.2	36.7	37.6	43.5	43.8	49.9	53.7	+3.8*
% saying most or all	10.6	8.9	7.7	8.5	10.4	11.1	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1	4.6	-0.5
Smoke marijuana																	
% saying none	17.0	17.1	14.1	13.9	12.4	13.6	15.6	19.7	22.3	20.5	20.8	21.6	24.7	27.5	31.7	34.2	+2.5
% saying most or all	30.3	30.6	32.3	35.3	35.5	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1	10.0	-0.1
Use inhalants																	
% saying none	75.7	81.4	81.1	80.0	80.9	82.2	83.5	81.6	80.7	78.8	77.6	75.3	79.2	77.9	80.0	80.8	+0.8
% saying most or all	1.1	1.1	1.0	1.1	1.1	1.2	0.9	1.3	1.1	1.5	2.0	1.9	1.2	1.9	1.0	0.7	-0.3
Use nitrites																	
% saying none	NA	NA	NA	NA	78.4	81.0	82.6	85.5	85.0	84.4	82.0	81.7	86.4	86.7	89.6	91.1	+1.5
% saying most or all	NA	NA	NA	NA	1.9	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.6	0.4	-0.2
Take LSD																	
% saying none	63.5	69.4	68.1	70.1	71.1	71.9	72.2	76.0	76.1	75.6	75.5	74.7	75.9	74.8	75.0	76.6	+1.6
% saying most or all	2.7	2.8	3.0	2.0	1.9	1.8	2.2	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9	1.7	-0.2
Take other psychedelics																	
% saying none	68.8	69.7	68.6	70.8	71.8	73.7	74.4	77.9	78.7	78.0	77.7	78.3	82.2	81.9	84.1	84.9	+0.8
% saying most or all	4.7	3.0	2.8	2.0	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0	0.8	-0.2
Take PCP																	
% saying none	NA	NA	NA	NA	72.2	77.8	82.8	82.7	85.8	84.1	83.9	84.5	86.5	85.3	87.0	88.0	+1.0
% saying most or all	NA	NA	NA	NA	1.7	1.6	0.9	0.9	1.1	1.2	1.2	1.1	0.8	1.2	0.5	0.5	0.0
Take cocaine																	
% saying none	66.4	71.2	69.9	66.8	61.1	58.4	59.9	62.4	61.1	56.2	54.4	56.3	62.3	62.6	68.3	73.2	+4.9**
% saying most or all	3.4	3.2	3.6	4.0	6.0	6.1	6.3	4.9	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	-0.6
Take "crack"																	
% saying none	NA	74.6	73.9	80.8	82.4	+1.6											
% saying most or all	NA	2.2	1.1	0.6	0.6	0.0											

(Table continued on next page)

TABLE 27 (cont.)

Trends in Proportion of Friends Using Drugs as Estimated by Twelfth Graders

(Entries are percentages)

Q. How many of your friends would you estimate . . .	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	Class of '90-'91 change
Take heroin																		
% saying none	84.8	86.4	87.1	85.7	87.1	87.0	87.5	86.8	88.0	87.0	85.5	84.7	86.1	87.6	86.0	88.6	88.6	0.0
% saying most or all	0.7	0.8	0.7	0.9	0.5	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4	0.4	0.0
Take other narcotics																		
% saying none	71.2	75.9	76.3	76.8	76.9	77.6	76.9	76.1	79.2	78.6	77.2	78.2	76.8	80.8	80.8	82.8	86.3	+3.5ss
% saying most or all	2.1	2.2	1.7	1.4	1.5	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9	0.5	-0.4
Take amphetamines																		
% saying none	49.0	57.8	58.7	59.3	59.3	56.1	51.2	49.4	53.9	54.9	56.7	58.2	60.5	66.6	66.5	71.3	75.7	+4.4ss
% saying most or all	5.9	5.6	4.1	4.7	4.3	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9	1.3	-0.6
Take barbiturates																		
% saying none	55.0	63.7	65.3	67.5	69.3	69.5	68.9	68.7	71.7	73.4	72.9	74.4	75.7	80.3	79.7	82.6	85.2	+2.6ss
% saying most or all	4.3	3.5	3.0	2.3	2.1	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6	0.5	-0.1
Take quaaludes																		
% saying none	68.3	73.0	71.7	73.0	72.3	67.5	65.0	64.5	70.3	73.9	74.0	76.5	78.0	82.9	83.4	85.7	88.0	+2.3
% saying most or all	3.0	1.8	2.9	2.2	2.8	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8	0.5	-0.3
Take tranquilizers																		
% saying none	54.4	63.7	62.2	65.2	68.0	70.3	70.5	70.1	73.3	73.4	74.2	75.8	76.7	80.1	82.0	85.1	86.5	+1.4
% saying most or all	3.5	3.1	2.7	1.8	2.0	1.9	1.4	1.1	1.2	1.6	1.2	1.3	1.0	0.7	1.5	0.5	0.4	-0.1
Drink alcoholic beverages																		
% saying none	3.3	4.9	5.6	5.1	4.6	3.9	5.3	4.3	4.5	5.4	5.4	4.4	4.6	4.3	4.9	8.0	8.8	+0.8
% saying most or all	68.4	64.7	66.2	68.9	68.5	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5	58.6	-1.9
Get drunk at least once a week																		
% saying none	17.6	19.3	19.0	18.0	16.7	16.9	18.2	16.9	16.1	18.5	17.5	15.3	14.4	15.6	17.2	20.8	20.2	-0.6
% saying most or all	30.1	26.6	27.6	30.2	32.0	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5	29.7	+2.2
Smoke cigarettes																		
% saying none	4.8	6.3	6.3	6.9	7.9	9.4	11.5	11.7	13.0	14.0	13.0	12.2	11.7	12.3	13.6	15.1	14.3	-0.8
% saying most or all	41.5	36.7	33.9	32.2	28.6	23.3	22.4	24.1	22.4	19.2	22.8	21.6	21.0	20.2	23.1	21.4	21.8	+0.4
Approx. N =	2640	2697	2788	3247	2933	2987	3307	3303	3096	2945	2971	2798	2948	2961	2587	2361	2339	

NOTE: Level of significance of difference between the two most recent classes: $s = .05$, $ss = .01$, $sss = .001$. NA indicates data not available.

^aThese estimates were derived from responses to the questions listed above. "Any illicit drug" includes all of the drugs listed except cigarettes and alcohol. PCP and the nitrites were not included in 1975 through 1978. "Crack" was not included in 1975 through 1986.

TABLE 28
Trends in Twelfth Graders' Exposure to Drug Use
 (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"?																	
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	change
Any illicit drug ^a	NA	17.4	16.5	15.1	15.0	15.7	17.3	18.6	20.6	22.1	22.3	24.5	26.1	28.7	31.4	32.4	35.8	+3.4 ^{ss}
% saying not at all	NA	34.8	39.0	40.7	40.4	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7	18.2	-2.6
% saying often	NA	44.9	44.2	44.7	41.7	41.5	37.4	37.5	40.6	40.2	40.7	44.7	48.3	52.2	52.9	54.6	60.0	+5.4 ^{ss}
Any illicit drug ^a except marijuana	NA	11.8	13.5	12.1	13.7	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2	7.9	-1.3
Marijuana	NA	20.5	19.0	17.3	17.0	18.0	19.8	22.1	23.8	25.6	26.5	28.0	29.6	33.0	35.2	36.6	40.4	+3.8 ^{ss}
% saying not at all	NA	32.5	37.0	39.0	38.9	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8	16.0	-1.8
% saying often	NA	78.8	80.0	81.9	81.9	82.8	82.6	83.9	86.2	87.5	86.8	86.9	87.1	86.6	85.0	85.1	84.3	-0.8
LSD	NA	2.2	2.0	1.8	2.0	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6	2.9	+0.3
% saying not at all	NA	76.5	76.7	76.7	77.6	79.6	82.4	83.2	86.9	87.3	87.5	88.2	90.0	91.0	91.2	90.6	90.6	0.0
% saying often	NA	3.1	3.2	2.9	2.2	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2	1.3	+0.1
Other psychedelics	NA	77.0	73.4	69.8	64.0	62.3	63.7	65.1	66.7	64.4	61.7	62.6	65.1	69.8	69.8	72.3	78.7	+6.4 ^{ss}
% saying not at all	NA	3.0	3.7	4.6	6.8	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7	3.4	-1.3
% saying often	NA	91.4	90.3	91.8	92.4	92.6	93.4	92.9	94.9	94.0	94.5	94.0	94.2	94.3	93.5	94.6	94.9	+0.3
Heroin	NA	0.8	1.1	0.9	0.7	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5	0.9	+0.4
% saying not at all	NA	81.9	81.3	81.8	82.0	80.4	82.5	81.5	82.7	82.0	81.6	84.4	85.6	85.2	86.2	85.8	88.7	+2.9 ^{ss}
% saying often	NA	1.8	2.4	2.0	1.7	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.6	1.4	-0.2
Other narcotics	NA	59.6	60.3	60.9	58.1	59.2	50.5	49.8	53.9	55.0	59.0	63.5	68.3	72.1	72.6	71.7	76.4	+4.7 ^{ss}
% saying not at all	NA	6.8	7.9	6.7	7.4	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1	3.1	-1.0
% saying often	NA	69.0	70.0	73.5	73.6	74.8	74.1	74.3	77.5	78.8	81.1	84.2	86.9	87.6	88.2	86.7	90.0	+3.3 ^{ss}
Barbiturates	NA	4.5	5.0	3.4	3.3	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7	1.2	-0.5
% saying not at all	NA	67.7	66.0	67.5	67.5	70.9	71.0	73.4	76.5	76.9	76.6	80.4	81.6	81.8	84.9	83.7	85.8	+2.1
% saying often	NA	5.5	6.3	4.9	4.3	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9	1.4	-0.6
Tranquilizers	NA	6.0	5.6	5.5	5.2	5.3	6.0	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4	+1.9 ^{ss}
% saying not at all	NA	57.1	60.8	60.8	61.2	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1	54.5	-1.6
% saying often	NA	2950	3075	3682	3253	3259	3608	3645	3334	3238	3252	3078	3296	3300	2795	2556	2526	
Alcoholic beverages	Approx. N =																	

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NOTES: Level of significance of difference between the two most recent classes: s = .05, ns = .01, ^{ss} = .001. NA indicates data not available. These estimates were derived from responses to the questions listed above. "Any illicit drug" includes all drugs listed except alcohol.

the usage figures. After that, barbiturates have shown a continuing decline in both use and exposure to use. Exposure to LSD reached a low point by about 1985, and has remained stable since.

- Trend data are available only since 1979 on friends' use of *PCP* or the *nitrites*. For both drugs, exposure to friends' use had dropped significantly between 1979 and 1983. Only half as many seniors in 1983 (14%) said any of their friends used PCP compared with seniors in 1979 (28%). The corresponding drop for nitrites was from 22% to 15%. Since 1983 there has been some further, but more modest, decrease in exposure for both drugs.
- The proportion having any friends who used *amphetamines* rose from 41% to 51% between 1979 and 1982—paralleling the sharp increase in reported use over that period. The proportion saying they were around people using amphetamines “to get high or for kicks” also jumped substantially between 1980 and 1982 (by 9% to 50%).²⁶ It then fell continually by a full 26 percentage points between 1982 and 1991 as self-reported use has been declining.
- Between 1978 and 1981 *methaqualone* use rose, as did the proportion of seniors saying some of their friends used it. A decline in both use and friends use started in 1982, and by 1991 the proportion of seniors saying they had any friends who use quaaludes fell by two-thirds (down from 35% to 12% between 1981 and 1991). Usage rates showed a similar decline.
- The proportion saying that “most or all” of their friends smoke *cigarettes* dropped steadily and substantially between 1976 and 1981, from 37% to 22%. During this period self-reported use dropped markedly, and more seniors perceived their friends as disapproving regular smoking. After 1981, friends' use and self-reported use remained relatively stable; in 1991 the rate is the same as it was in 1981. In 1977, the peak year for actual use, 34% said most or all of their friends smoked; in 1981, 22.4%, and in 1991, 21.8%.
- The proportion saying most or all of their friends *get drunk* at least once a week had been increasing steadily between 1976 and 1979, from 27% to 32%, in a period in which the prevalence of occasional heavy drinking was rising by about the same amount. After that, there was little change in either measure for about five years. Beginning in 1984 and 1985, self-reports by seniors of their own heavy drinking began to decline; but reported heavy drinking by friends has shown only a very slight decline. Without question

²⁶This finding was important, since it indicated that a substantial part of the increase observed in self-reported amphetamine use was due to things other than simply an increase in the use of over-the-counter diet pills or stay-awake pills, which presumably are not used to get high. Obviously, more young people were using stimulants for recreational purposes. There still remained the question, of course, of whether the active ingredients in those stimulants really were amphetamines.

what remains the most impressive fact here, is that almost one-third of all high school seniors (30% in 1991) say that most or all of their friends get drunk at least once a week. And only about one in five (20%) say that none of their friends get drunk that often.

IMPLICATIONS FOR VALIDITY OF SELF-REPORTED USAGE QUESTIONS

We have noted a high degree of correspondence in the aggregate level data presented in this report among seniors' self-reports of their *own* drug use, their reports concerning *friends'* use, and their own *exposure* to use. Drug-to-drug comparisons in any given year across these three types of measures tend to be highly parallel, as are the changes from year to year.²⁷ We take this consistency as additional evidence for the validity of the self-report data, and of trends in the self-report data, since there should be less reason to distort answers on friends' use, or general exposure to use, than to distort the reporting of one's own use.

FRIENDS' USE AT LOWER GRADE LEVELS

- As would be expected, eighth and tenth grade students are considerably less likely to have friends who use the various drugs than twelfth graders (Table 26). For example, for *powder cocaine*, *crack cocaine*, and *heroin* fewer than 10% of the eighth graders and fewer than 15% of the tenth graders have any friends who use.
- For *marijuana*, however, nearly a quarter of the eighth graders and half of the tenth graders have friends who use.
- Exposure to *alcohol* use through friends is much more widespread, with nearly three-quarters (72%) of the eighth graders and 93% of the tenth graders having friends who use. In fact, a fifth of the eighth graders and half of the tenth graders say that most or all of their friends drink, and the proportions saying that most or all of their friends get drunk at least once a week is one in fourteen and one in five, respectively.
- Exposure to *cigarette smoking* through friends also is very high for these children, with two-thirds of the eighth graders and more than 80% of the tenth graders saying they have some friends who smoke.

²⁷Those minor instances of noncorrespondence may well result from the larger sampling errors in our estimates of these environmental variables, which are measured on a sample size one-fifth or one-sixth the size of the self-reported usage measures.

PERCEIVED AVAILABILITY OF DRUGS

One set of questions asks for estimates of how difficult it would be to obtain each of a number of different drugs if they wanted them. The answers range across five categories from “probably impossible” to “very easy.”²⁸ While no systematic effort has been undertaken to assess directly the validity of these measures, it must be said that they do have a rather high level of face validity—particularly if it is the subjective reality of “perceived availability” which is purported to be measured. It also seems quite reasonable to us to assume that perceived availability tracks actual availability to some extent.

Perceived Availability in 1991

- There are substantial differences in the reported availability of the various drugs. In general, the more widely used drugs are reported to be available by the highest proportion of the age group, as would be expected (see Table 29).
- The availability of *alcohol* and *cigarettes* was not even asked of seniors since we assume that these drugs are almost universally available to them. However, they are asked of the eighth and tenth graders, and even at these grade levels the availability is extremely high. *Cigarettes* are seen as most available: 76% of eighth graders and 91% of tenth graders think they would be fairly or very easy to get.
- *Alcohol* is seen as only slightly less available, with two-thirds of the eighth graders (67%) and 84% of the tenth graders saying they could get it fairly easily.
- By contrast, the illicit drugs are seen as far less accessible by these younger students. *Marijuana* is described as fairly easy to get by little more than a quarter of the eighth graders (28%), with *amphetamines* (23%) and *barbiturates* (21%) coming next. All of the *other illicit drugs* are seen as available by between 13% and 17% of the eighth graders. We assume that many inhalants, like glues and aerosols, are virtually universally available, and therefore, a question on their availability was not included.
- When we compare eighth, tenth, and twelfth grade, we find that perceived availability rises sharply with grade level. For example, while 28% of eighth graders say *marijuana* would be fairly easy to get, 58% of tenth graders say that, and 83% of twelfth graders say it would be fairly easy to get. In fact, for virtually all drugs, the proportion of students saying they are available to them doubles or triples between eighth grade and tenth grade. These differences are surely due, in large part, to the overall differences in prevalence rates across these grade levels: the children in lower grades

²⁸In the questionnaire used with eighth and tenth graders, an additional answer category of “don’t know” is offered. Generally 12% or less of the respondents selected this answer.

are likely to have fewer friends who use, and thus, are less likely to have access through those friends. They may also reflect less willingness and/or less motivation on the part of those who deal drugs to establish contact with younger children.

- **Marijuana** also appears to be almost universally available to high school seniors; some 83% report that they think it would be “very easy” or “fairly easy” for them to get—46% more than the number who report ever having used it.
- After marijuana, seniors indicate that the psychotherapeutic drugs are among the easiest to obtain as was true for the lower grades: **amphetamines** are seen as available by 57% of seniors, **barbiturates** by 42%, and **tranquilizers** by 41%.
- More than half of the seniors (51%) now see **cocaine** as readily available to them, and 40% of all seniors think **crack** is readily available.
- **LSD, other psychedelics, and opiates other than heroin** are reported as available by substantial minorities of seniors (40%, 28%, and 35%, respectively). See Table 30 for the full list of drugs included in the questions of seniors, some of which were not asked of the younger students.
- **Amyl and butyl nitrites** are seen by the fewest seniors (23%) as being easy to get, perhaps reflecting the proliferation of state laws making over-the-counter sales of these drugs illegal.
- Among seniors, the great majority (usually two-thirds or more) of fairly recent users of **all drugs**—that is, of those who have illicitly used the drug in the past year—feel that it would be easy for them to get that same type of drug. (Data are not displayed here.)

Trends in Perceived Availability for Seniors

Trend data on availability, so far, are only available for seniors. They are presented in Figures 29a and b and in Table 30.

- **Marijuana**, for the first time since the study was begun in 1975, showed a small but statistically significant decline in perceived availability (down 3.9%) between 1982 and 1984, undoubtedly due to the reduced proportion of seniors who have friends who use. There has been little further change since then, and 83% of the class of 1991 think marijuana would be easy to get.
- **Amphetamines** showed a jump in availability of 11 percentage points between 1979 and 1982; but availability has dropped back by 14 percentage points in the years since.

FIGURE 29a

Trends in Perceived Availability of Drugs
All Seniors

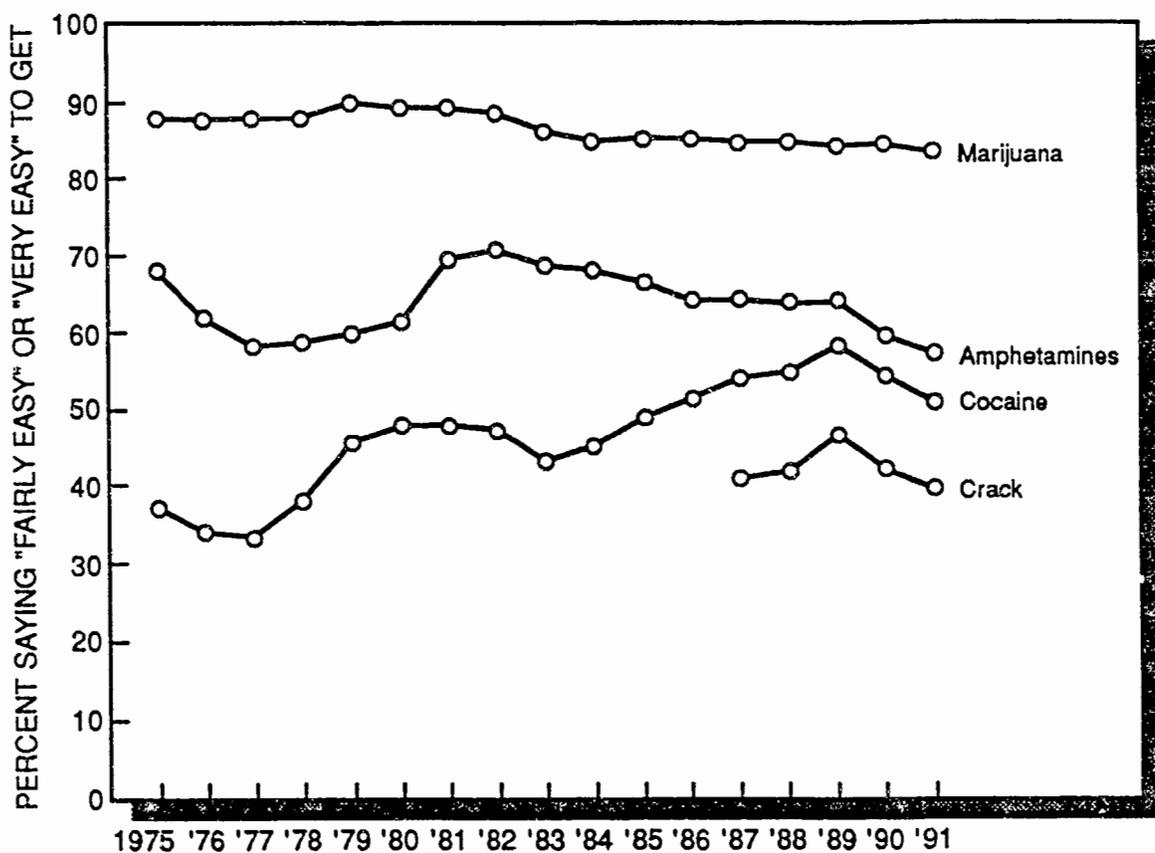


FIGURE 29b

Trends in Perceived Availability of Drugs
All Seniors

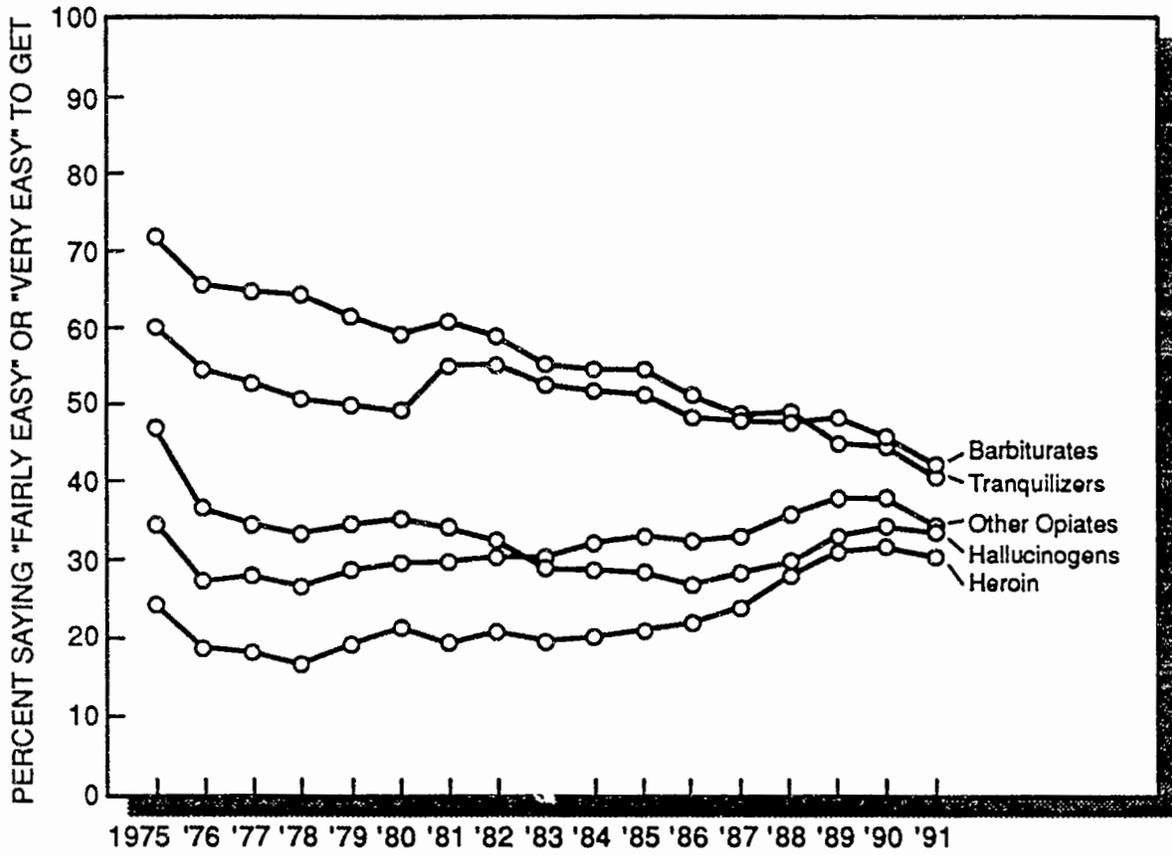


TABLE 29
Perceived Availability of Drugs
Eighth, Tenth, and Twelfth Graders, 1991

Percentage saying "fairly easy" or "very easy" to get^a

<i>Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?</i>	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
Marijuana	25.9	53.9	83.3
LSD	12.4	23.6	39.5
PCP	10.9	17.2	27.6
"Crack"	14.3	25.9	39.9
Cocaine powder	14.5	26.7	46.0
Heroin	11.4	17.4	30.6
Some other narcotic	13.8	21.3	34.6
Amphetamines	20.9	33.3	57.3
Barbiturates	18.6	28.5	42.4
Tranquilizers	15.1	24.5	40.8
Cigarettes	72.6	88.4	NA
Alcohol	64.1	82.7	NA
Crystal methamphetamine	10.6	14.4	22.3
Steroids	15.6	27.6	54.1
Approx. N =	(17500)	(14800)	(2480)

NOTE: For 8th and 10th grades, the following drugs were asked about in only one of the two questionnaire forms: LSD, PCP, heroin, other narcotics, amphetamines, barbiturates, tranquilizers, and crystal methamphetamine.

^a Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy. For 8th and 10th grades, there was another category — "Can't say, drug unfamiliar" — which was included in the calculation of these percentages.

TABLE 30

Trends in Perceived Availability of Drugs, Twelfth Graders

Percentage saying drug would be "Fairly easy" or "Very easy" for them to get

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying drug would be "Fairly easy" or "Very easy" for them to get																		Class of '90-'91 change
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991		
Marijuana	87.8	87.4	87.9	87.8	90.1	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4	83.3	-1.1	
Amyl & Butyl Nitrites	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.9	25.9	26.8	24.4	22.7	-1.7	
LSD	46.2	37.4	34.5	32.2	34.2	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7	39.5	-1.2	
PCP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.8	24.9	28.9	27.7	27.6	-0.1	
Some other psychedelic	47.8	35.7	33.8	33.8	34.6	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3	28.0	-0.3	
Cocaine	37.0	34.0	33.0	37.8	45.5	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5	51.0	-3.5s	
"Crack"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.1	42.1	47.0	42.4	39.9	-2.5	
Cocaine powder	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	52.9	50.3	53.7	49.0	46.0	-3.0	
Heroin	24.2	18.4	17.9	16.4	18.9	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9	30.6	-1.3	
Some other narcotic (including methadone)	34.5	26.9	27.8	26.1	28.7	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1	34.6	-3.5s	
Amphetamines	67.8	61.8	58.1	58.5	59.9	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7	57.3	-2.4	
Barbiturates	60.0	54.4	52.4	50.6	49.8	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9	42.4	-3.5s	
Tranquilizers	71.8	65.5	64.9	64.3	61.4	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7	40.8	-3.9s	
Approx. N =	2627	2865	3065	3598	3172	3240	3578	3602	3385	3269	3274	3077	3271	3231	2806	2549	2476		

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.
 a Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

- The perceived availability of *barbiturates* also jumped about 6% between 1980 and 1982, but dropped back by 13 points in subsequent years.
- Between 1977 and 1980 there was a substantial increase (15 percentage points) in the perceived availability of *cocaine* (see Figures 29a and b and Table 30). Among recent cocaine users there also was a substantial increase observed over that three-year interval (data not shown). Availability then leveled, and dropped some in 1983 and 1984, before rising significantly (by 4%) in 1985. Perceived availability rose another 2.6% in 1986. Since 1986 actual use of cocaine has dropped sharply, *but* reported availability continued to rise through 1989. The fact that there was no drop in perceived availability between 1986 and 1989 leads us to discount supply reduction as a possible explanation for the significant decline in use observed in those years. Between 1989 and 1991 there was a significant 8 percentage point decrease in perceived availability—perhaps reflecting the impact of the greatly reduced proportion of seniors who have friends who use (which dropped by 11 percentage points in the same interval).
- The use of *tranquilizers* has been declining fairly steadily since 1977, and perceived availability has declined over the same period, though by a smaller proportion.
- The perceived availability of *LSD* dropped sharply between 1975 and 1986 (from 46% to 29% saying it could be fairly easy to get). Since then availability rose back to 40% in 1990, where it remained in 1991. The availability of *other psychedelics* also dropped sharply between 1975 and 1978, and since 1978 has shown a further decline of 6%. During the latter period the use of PCP dropped substantially, although availability has risen slightly in recent years.
- For a full decade (between 1976 and 1986) there was not much change in the perceived availability of *heroin*. Between 1986 and 1989 there was a significant increase, but availability has changed very little since.
- *Other opiates* have shown a very slight, gradual, upward shift in availability, from 27% in 1976 to 38% in 1990. In 1991, however, there was a significant decline.
- All these trends in perceived availability are similar when we restrict the sample to recent users of each of the drugs (data not shown).

The Importance of Supply Reduction vs. Demand Reduction

- Overall, it is important to note that *supply reduction* does not appear to have played a major role in perhaps the two most important downturns in use which have occurred to date—namely, those

for *marijuana* and *cocaine*. (See earlier Figures 23 and 24.) In the case of cocaine, perceived availability was actually rising during much of the period of downturn in use—a conclusion which is corroborated by data from the Drug Enforcement Administration on trends in the price and purity of cocaine on the streets. In the case of marijuana, availability has remained almost universal in this age group over the last twelve years, while use has dropped substantially. Similarly, *amphetamine* use has declined appreciably since 1981 with only a modest corresponding change in perceived availability.

- What has changed dramatically are young peoples' beliefs about the dangers of using marijuana and cocaine; and, as we have been saying for some years, we believe these changes have led to a decrease in use directly through their impact on the young peoples' demand for these drugs, and indirectly through their impact on personal disapproval and subsequently on peer norms. Because perceived risks of amphetamine use were not changing much when amphetamine use was declining substantially (1981–1986), other factors must help to account for the decline in demand for that class of drugs—quite conceivably a displacement to cocaine. And because the three classes of drugs (marijuana, cocaine and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a general shift against drug use) can explain the various trends.

Chapter 10

OTHER FINDINGS FROM THE STUDY

Each year this section presents additional recent findings from the Monitoring the Future study. Some of these have been published recently as journal articles or chapters; however, the first two analyses included here—on the use of nonprescription stimulants and daily marijuana use—have not been reported elsewhere.

THE USE OF NONPRESCRIPTION STIMULANTS

As is discussed in other chapters of this report, between 1979 and 1981 we observed a substantial increase in reported stimulant use by high school students. We had reason to believe that a fair part of that increase was attributable to nonprescription stimulants of two general types—"look-alike" drugs (pseudo-amphetamines, usually sold by mail order, which look like, and often have names that sound like, real amphetamines) and over-the-counter stimulants (primarily diet pills and stay-awake pills). These drugs usually contain caffeine, ephedrine, and/or phenylpropanolamine as their active ingredients.

Beginning with the 1982 survey we introduced new questions on some questionnaire forms in order to more accurately assess the use of amphetamines as well as to assess the use of the "look-alikes," diet pills, and stay-awake pills of the nonprescription variety. For example, on one of the five questionnaire forms in 1982–1988 and on one of six questionnaire forms beginning in 1989, respondents were asked to indicate on how many occasions (if any) they had taken nonprescription diet pills such as Dietac™, Dexatrim™, and Prolamine™ (a) in their lifetime, (b) in the prior twelve months, and (c) in the prior thirty days. (These correspond to the standard usage questions asked for all drugs.) Similar questions were asked about nonprescription stay-awake pills (such as No-Doz™, Vivarin™, Wake™, and Caffedrine™) and the "look-alike" stimulants. (The latter were described at some length in the actual question.)

On three of the five questionnaire forms in 1982 and 1983 (and in all questionnaire forms thereafter) respondents were also asked about their use of prescription amphetamines, with very explicit instructions to exclude the use of over-the-counter and "look-alike" drugs. These questions yielded the data described in this volume as "stimulants, adjusted." Here we will refer to them as "amphetamines, adjusted," to distinguish them more clearly from the nonamphetamine stimulants.

Prevalence of Use in 1991 Among Seniors

- Tables 31a-c give the prevalence levels for these various classes of stimulants. As can be seen, a substantial proportion of students (17%) have used over-the-counter *diet pills* and 4% have used them in just the past month. Some 0.5% are using them daily.

TABLE 31a

Non-Prescription Diet Pills: Trends in Twelfth Graders' Lifetime, Annual, and Thirty-Day Prevalence, by Sex^a

(Entries are percentages)

	Class of										'90-'91
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	change
Prevalence											
Lifetime											
Total	29.6	31.4	29.7	28.7	26.6	25.5	21.5	19.9	17.7	17.2	-0.5
Males	16.5	17.4	14.8	14.8	13.1	12.4	9.4	9.1	7.8	5.9	-1.9
Females	42.2	44.8	43.1	41.5	39.7	38.3	32.6	30.2	28.3	28.1	-0.2
Annual											
Total	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4	8.1	-1.6
Males	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3	3.0	-1.3
Females	29.5	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7	14.2	-2.5
Thirty-Day											
Total	9.8	9.5	9.9	7.3	6.5	5.8	5.1	4.8	4.3	3.7	-0.6
Males	5.0	4.0	4.8	3.7	3.2	2.7	1.8	2.3	1.9	1.4	-0.5
Females	14.0	13.7	14.2	10.7	9.6	8.9	8.3	7.0	6.7	5.5	-1.2

NOTE: Level of significance of difference between the two most recent classes:
 s = .05, ss = .01, sss = .001.

^aData based on one form N. Total N in 1982-1989 is approximately 3300. In 1990-1991, the total N is approximately 2600.

TABLE 31b

**Stay-Awake Pills: Trends in Twelfth Graders'
Lifetime, Annual, and Thirty-Day Prevalence, by Sex^a**

(Entries are percentages)

	Class of										'90-'91
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	change
Prevalence											
Lifetime											
Total	19.1	20.4	22.7	26.3	31.5	37.4	37.4	36.3	37.0	37.0	0.0
Males	20.2	22.3	23.2	28.0	32.0	34.8	38.0	37.7	35.3	36.0	+0.7
Females	16.9	18.2	21.7	24.9	31.3	39.4	36.7	35.1	39.2	37.9	-1.3
Annual											
Total	11.8	12.3	13.9	18.2	22.2	25.2	26.4	23.0	23.4	22.2	-1.2
Males	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3	22.3	0.0
Females	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5	22.0	-2.5
Thirty-Day											
Total	5.5	5.3	5.8	7.2	9.6	9.2	9.8	8.5	7.3	6.8	-0.5
Males	6.0	5.5	6.2	7.7	9.5	9.3	11.0	10.0	7.1	7.6	+0.5
Females	4.7	4.5	5.5	6.7	9.3	9.1	8.6	6.9	7.3	5.5	-1.8

NOTE: Level of significance of difference between the two most recent classes:
s = .05, ss = .01, sss = .001.

^aData based on one form N. Total N in 1982-1989 is approximately 3300. In 1990-1991, the total N is approximately 2600.

TABLE 31c

Look-Alikes: Trends in Twelfth Graders'
Lifetime, Annual, and Thirty-Day Prevalence, by Sex^a
(Entries are percentages)

	Class of										'90-'91
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	change
Prevalence											
Lifetime											
Total	15.1	14.8	15.3	14.2	12.7	11.9	11.7	10.5	10.7	8.9	-1.8
Males	13.6	14.2	14.1	14.1	12.3	10.9	10.4	10.1	11.6	8.3	-3.3s
Females	15.1	14.4	15.2	13.8	12.6	12.3	12.1	10.2	9.9	8.8	-1.1
Annual											
Total	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6	5.2	-0.4
Males	9.5	9.2	9.7	8.3	6.5	6.4	4.2	6.1	6.6	4.9	-1.7
Females	10.7	8.6	8.5	7.8	6.7	6.0	6.3	5.0	4.6	4.7	+0.1
Thirty-Day											
Total	5.6	5.2	4.4	3.6	3.4	2.7	2.7	2.4	2.3	2.1	-0.2
Males	4.0	4.5	4.5	3.8	3.4	2.4	1.7	2.3	2.6	2.0	-0.6
Females	5.2	5.4	3.8	3.1	3.0	2.7	3.0	2.2	1.8	1.8	0.0

NOTE: Level of significance of difference between the two most recent classes:
s = .05, ss = .01, sss = .001.

^aData based on one form N. Total N in 1982-1989 is approximately 3300. In 1990-1991, the total N is approximately 2600.

- Based on the data presented earlier in this report, we know that very similar proportions are using actual **amphetamines** (adjusted): 15% lifetime, 3% monthly, and 0.2% daily prevalence.
- Fewer students knowingly use the "**look-alikes**" than use diet pills or amphetamines (adjusted): 9% lifetime, 2% monthly, and 0.1% daily prevalence. Of course, it is probable that some proportion of those who think they are getting real amphetamines have actually been sold "look-alikes," which are far cheaper for drug dealers to purchase.
- Currently, **stay-awake pills** are the most widely used stimulant: 37% lifetime, 7% monthly, and 0.3% daily prevalence.
- In 1983 the newly revised question on amphetamine use yielded prevalence estimates which were about one-quarter to one-third lower than the original version of the question, indicating that some distortion in the unadjusted estimates was occurring as a result of the inclusion of some nonprescription stimulant use.

Subgroup Differences

- Figure 30 shows the prevalence figures for these drug classes for **males and females** separately. It can be seen that the use of **diet pills** is dramatically higher among females than among males. In fact, the absolute prevalence levels for females are impressively high, 28% report some experience with them and 6%—or one in every seventeen females—report use in just the last month. For all other stimulants the prevalence rates for both sexes are fairly close.
- A similar comparison for those planning four years of **college** (referred to here as the "college-bound") and those who are not shows some differences as well (data not shown). As is true for the controlled substances, use of the "**look-alikes**" is lower among the college-bound (4% annual prevalence vs. 7% among the noncollege-bound).

This year's results show no difference between these two groups in their use of diet pills; annual prevalence is 9% for both college-bound and noncollege-bound. Use of **stay-awake pills** is only slightly higher for the college-bound—annual prevalence is 22% vs. 21% for the noncollege-bound.

- There have not been any dramatic regional differences in the use of diet pills, but the 1990 and 1991 data show distinctly higher rates for "look-alikes" and stay-awake pills in the North Central region.
- All three nonprescription stimulants have lowest prevalence in the large cities.

TABLE 32

**Percent of Twelfth Graders in Each
Category of an Illicit Drug Use Index
Who Have Tried Various Over-the-Counter Stimulants
1991**

Lifetime use of...	<u>Lifetime Illicit Drug Use</u>		
	<u>No Use</u>	<u>Marijuana Only</u>	<u>Other Illicit Drugs</u>
Diet Pills	10.8 ^a	16.4	34.3
Stay-Awake Pills	23.6	42.6	66.5
"Look-Alikes"	2.6	6.1	27.0
Approx. N=	(1316)	(443)	(579)

^aThis means that, of those who have never used an illicit drug, 10.8% have used a diet pill at least once.

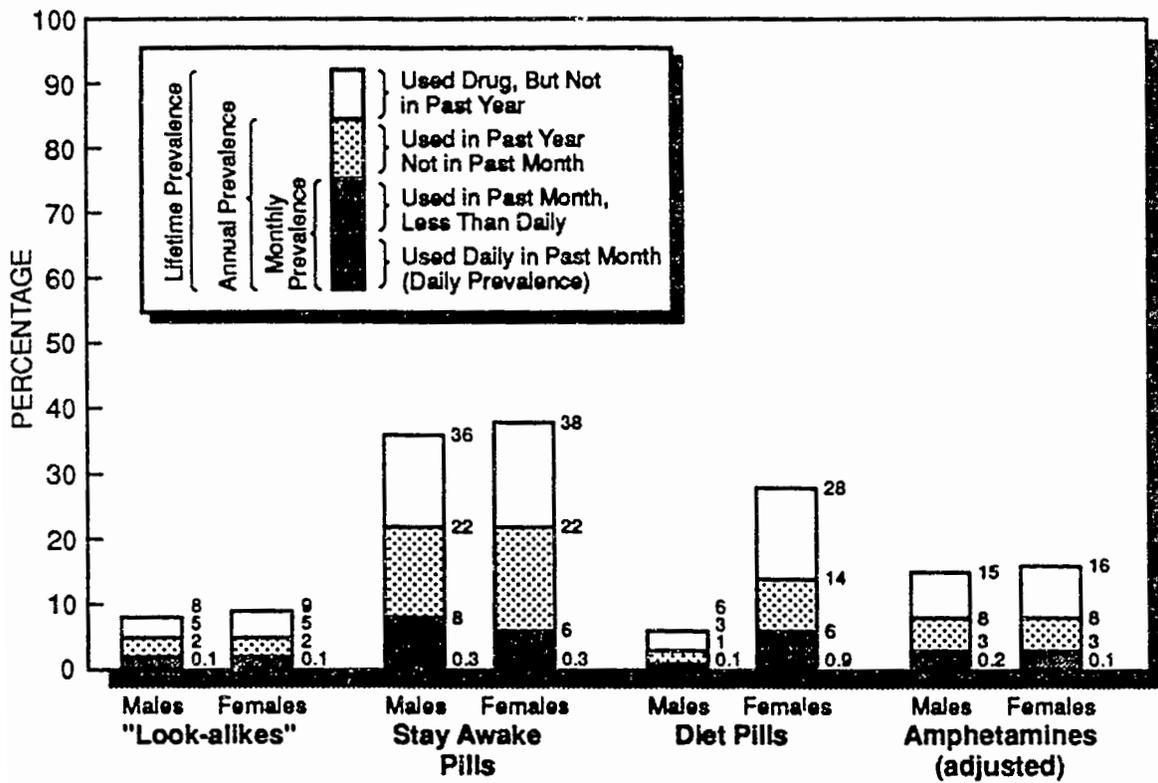
- The use of all of the nonprescription stimulants (i.e., *diet pills*, *stay-awake pills*, and “*look-alikes*”) is substantially higher among those who have had experience with the use of illicit drugs than among those who have not, and highest among those who have become most involved with illicit drugs (see Table 32). For example, only 2.6% of those who have abstained from any illicit drug use report ever having used a “*look-alike*” stimulant, compared to 6.1% of those who report having used only marijuana and 27% of those who report having used some illicit drug other than marijuana.

Trends in Use Among Seniors

- Because these questions were new in 1982, trends can be assessed directly only since then.
- However, it is worth noting that the adjusted 1982 figures for *amphetamines* are higher than the unadjusted figures for all years prior to 1980. (See Tables 11 through 14.) This suggests that there was indeed an increase in amphetamine use between 1979 and 1982—or at least an increase in what, to the best of the respondent’s knowledge, were amphetamines.
- In recent years, there have been increased legislative and law enforcement efforts to curb the manufacture and distribution of “*look-alike*” pills. Perhaps as a result, the use of these pills decreased from 1982 to 1991; for example, annual prevalence went from 10.8% in 1982 to 5.7% in 1988. Most of the decline occurred among those who have had experience with illicit drugs other than marijuana—the group primarily involved in the use of “look-alikes”. Since 1988 use has remained essentially level.
- Use of *diet pills* decreased between 1983 and 1991. Over that interval annual prevalence fell from 20.5% to 8.8%. Nearly all of this decline occurred among the group who had used illicit drugs other than marijuana.
- The use of *stay-awake* pills had increased significantly in the early to mid-eighties; annual prevalence increased from 12% in 1982 to 26% in 1988. Since then it has dropped back somewhat, to 22% in 1991. Both the increase and decrease occurred primarily among those who have had experience in the use of illicit drugs, including those who had used only marijuana (data not shown).
- All subgroups (defined by sex, college plans, region of the country, and population size) showed similarly large increases from 1982 to 1988 in their use of *stay-awake pills*. All subgroups decreased in annual prevalence between 1988 and 1991 except for an increase of 3.0% in the North Central region.

FIGURE 30

Prevalence and Recency of Use, by Sex
Amphetamines and Non-Prescription Stimulants
Class of 1991



- Subgroup differences in trends for *diet pills* and *look-alikes* for the most part reflect the overall trends.

THE USE OF MARIJUANA ON A DAILY BASIS

In past reports in this series, we summarized a number of findings regarding daily marijuana users, including what kind of people they are, how use changes after high school for different subgroups, and what daily users see to be the negative consequences of their use.²⁹ In 1982 a special question segment was introduced into the study in one of the five questionnaire forms in order to secure more detailed measurement of individual patterns of daily use. (This question was included in one of six forms since 1988.) More specifically, respondents were asked (a) whether at any time during their lives they had ever used marijuana on a daily or near-daily basis for at least a month and, if so, (b) how recently they had done that, (c) when they first had done it, and (d) how many total months they had smoked marijuana daily, cumulating over their whole lifetime. The results of our analyses of these questions follow.

Lifetime Prevalence of Daily Use

- **Current daily use**, defined as use on twenty or more occasions in the past thirty days, has been fluctuating widely since the study began, as we know from the trend data presented earlier in this report. It rose from 6.0% among seniors in 1975 to 10.7% in 1978, then declined to 2.0% in 1991.
- Since 1982, we have found the **lifetime prevalence of daily use** for a month or more to be far higher than current daily use—e.g., at 9.0% or one in every eleven seniors in 1991, vs. 2.0% for current daily use. In other words, the proportion who describe themselves as having been daily or near-daily users at some time in their lives is more than four times as high as the number who describe themselves as current daily users. However, we believe it very likely that this ratio has changed dramatically over the life of the study as a result of the large secular trends in daily use. Therefore, it would be inaccurate to extrapolate to the class of 1978, for example, and deduce that their lifetime prevalence of daily use was four times their 10.7% current use figure that year. (An investigation of data from a follow-up panel of the class of 1978 confirms this assertion.)
- Utilizing data collected in 1989 from follow-up panels from the earlier graduating classes of 1976 through 1988, we found that the lifetime prevalence of daily marijuana use for these graduates (ranging in age from about 19 to 31) was 20%. Approximately one-

²⁹For the original reports see the following, which are available from the author: 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*, New York: The American Council on Marijuana. Also see Johnston, L.D. (1982). A review and analysis of recent changes in marijuana use by American young people. In *Marijuana: The national impact on education*, New York: The American Council on Marijuana.

fourth of the older portion of that group—graduates from the classes of 1976 through 1979—indicate having been daily marijuana users for a month or more at some time in their lives.

Grade of First Daily Use

- Of those 1991 seniors who were daily users at some time (9.0% of the sample), over two-thirds (71%, or 6.4% of all seniors) began that pattern of use before tenth grade. However, the secular trends in daily use must be recalled. Active daily use reached its peak among seniors in 1978, when the 1990 graduating class was in kindergarten. Thus we are confident that different graduating classes show different age-associated patterns of onset.
- Nearly all who were to become daily users by the end of high school had done so by the end of grade ten (84% of the eventual daily users). The percentages of all seniors who started daily marijuana use in each grade level is presented in Table 33.

Recency of Daily Use

- Nearly two-thirds (64%) of those who report ever having been daily marijuana users (for at least a one-month interval) have smoked that frequently in the past year-and-a-half, while over one-third (36%) of them say they last used that frequently “about two years ago” or longer. On the other hand, only 26% of all such users (or 2.3% of the entire sample) classified themselves as having used daily or almost daily in the past month (the period for which we define *current* daily users). Our definition of current daily users yields 2.0% in 1991, though the two definitions do not always agree exactly.

Duration of Daily Use

- It seems likely that the most serious long-term health consequences associated with marijuana use will be directly related to the duration of heavy use and in the late 1970's there was considerable concern that a large population of chronic heavy users would evolve. Thus a question was introduced which asks the *cumulative* number of months the student has smoked marijuana daily or nearly daily. While hardly an adequate measure of the many different possible cross-time patterns of use—a number of which may eventually prove to be important to distinguish—it does provide a gross measure of the total length of exposure to heavy use.
- Table 33 gives the distribution of answers to this question. It shows that two-thirds (67%) of those seniors with daily use experience have used “about one year” or less cumulatively—at least by the end of twelfth grade. In fact, a third (33%) have used

TABLE 33
Daily Marijuana Use: Responses to Selected Questions by Subgroups
Twelfth Graders, 1991

	Total		Sex		4-Year College Plans		Region				Population Density		
			Male	Female	No	Yes	North East	North Central	South	West	Large SMSA	Other SMSA	Non-SMSA
Q. Thinking back over your whole life, has there ever been a period when you used marijuana or hashish on a daily, or almost daily, basis for at least a month?													
No	91.0	89.5	93.6	88.5	93.5	89.7	91.6	92.6	88.7	92.8	88.9	92.9	
Yes	9.0	10.5	6.4	11.5	6.5	10.3	8.4	7.4	11.3	7.2	11.1	7.1	
Q. How old were you when you first smoked marijuana or hashish that frequently?													
Grade 6 or earlier	1.1	1.4	0.5	2.1	0.6	1.6	1.0	0.9	1.2	1.3	1.2	1.1	
Grade 7 or 8	3.0	3.4	2.1	4.1	2.0	4.7	1.4	2.4	4.1	2.5	3.4	2.8	
Grade 9 (Freshman)	2.3	2.6	1.8	2.5	1.7	1.9	2.5	1.8	3.3	1.6	3.1	1.4	
Grade 10 (Sophomore)	1.2	1.6	0.8	1.1	1.1	0.9	1.7	1.2	1.2	1.2	1.6	0.7	
Grade 11 (Junior)	0.9	0.8	0.9	1.3	0.6	1.2	1.2	0.5	0.6	0.7	0.9	0.8	
Grade 12 (Senior)	0.5	0.7	0.4	0.4	0.6	0.0	0.6	0.5	0.9	0.0	0.9	0.3	
Never used daily	91.0	89.5	93.6	88.5	93.5	89.7	91.6	92.6	88.7	92.8	88.9	92.9	
Q. How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?													
During the past month	2.3	2.6	2.0	4.0	1.7	1.4	2.1	2.0	3.9	0.9	3.9	0.8	
2 months ago	1.2	1.5	0.8	1.5	0.6	1.2	1.2	1.7	0.6	1.3	1.1	1.3	
3 to 9 months ago	1.1	1.5	0.6	1.9	0.8	1.3	1.3	0.6	1.6	1.1	1.3	0.8	
About 1 year ago	1.2	1.0	1.0	1.8	0.7	2.4	0.9	0.8	1.2	1.5	0.8	1.9	
About 2 years ago	1.6	2.0	1.0	1.1	1.6	1.4	2.0	1.0	2.5	1.3	2.1	1.1	
3 or more years ago	1.6	1.9	0.9	1.1	1.1	2.7	0.9	1.3	1.6	1.1	2.0	1.2	
Never used daily	91.0	89.5	93.6	88.5	93.5	89.7	91.6	92.6	88.7	92.8	88.9	92.9	
Q. Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?													
Less than 3 months	3.0	3.2	2.7	3.3	2.4	3.8	3.0	2.2	3.7	3.3	3.4	2.2	
3 to 9 months ^a	2.0	2.5	1.4	2.4	1.6	2.3	2.0	1.8	2.1	1.4	2.3	1.9	
About 1 year	1.0	1.1	0.4	1.1	0.7	1.4	0.3	1.2	0.9	0.9	0.9	1.2	
About 1 and 1/2 years	1.0	1.3	0.5	1.8	0.7	0.8	1.7	0.3	1.4	0.9	1.2	0.8	
About 2 years	1.0	1.4	0.4	1.6	0.3	0.5	0.5	1.3	1.5	0.1	1.4	0.9	
About 3 to 5 years	0.8	0.8	0.8	0.9	0.6	1.5	0.5	0.3	1.6	0.4	1.5	0.0	
6 or more years	0.2	0.2	0.3	0.4	0.2	0.0	0.4	0.2	0.2	0.1	0.4	0.1	
Never used daily	91.0	89.5	93.6	88.5	93.5	89.7	91.6	92.6	88.7	92.8	88.9	92.9	
	(2448)	(1178)	(1166)	(565)	(1685)	(466)	(650)	(820)	(511)	(588)	(1170)	(689)	
		N =											

NOTE: Entries are percentages which sum vertically to 100%.

less than three months cumulatively. On the other hand, nearly one-fourth (22%, or 2.0% of *all* seniors) have used "about two years" or more cumulatively.

Subgroup Differences

- There is a considerable ***sex difference*** in the proportion having ever been a daily user—11% for males and 6% for females. Furthermore, the cumulative duration of daily use is distinctly longer for the males. These two sex differences combine to account for the large male-female difference in current daily use. There is also some difference in their age at onset, with the males tending to start earlier on the average.
- Whether or not the student has ***college plans*** is strongly related to lifetime prevalence of daily marijuana use, as well as to current prevalence. Of those planning four years of college, 3.5% had used daily compared with 11.5% of those without such plans. And the college-bound users show a distinctly shorter cumulative duration of use, with a lower proportion of them still using daily. Among those in each group who did use daily, the age-at-onset pattern is younger for the noncollege-bound.
- At present there are slight ***regional differences*** in lifetime prevalence of daily use; the West is highest, with 11.3% having used daily at some time, the Northeast is next at 10.3%, followed by the North Central at 8.4%, and the South at 7.4%.
- The subgroup differences associated with ***urbanicity*** are similar to those found for current daily use. ***Lifetime*** prevalence of daily marijuana use is 7.2% in the large cities, 11.1% in the smaller cities, and 7.1% in the nonurban areas. Current daily use is 1.9% in the large cities, 2.5% in the smaller cities, and 1.2% in the non-urban areas.

Trends in Use of Marijuana on a Daily Basis

- Table 34 presents trend data on the lifetime prevalence of daily use for a month or more. It shows a decline since 1982 when this measure was first used, through 1991—from 21% to 9%.
- Between 1982 and 1991, the decline in lifetime daily use was stronger among females (from 18% to 6%) than among males (20% to 11%); and the absolute drop was larger in the noncollege-bound group (23% to 12%) than among the college-bound (14% to 7%), although the proportional drop was not.
- Lifetime prevalence of daily use has dropped in all four regions of the country since 1982. The decline has been greatest in the Northeast.

TABLE 34

Trends in Daily Use of Marijuana in Lifetime
by Subgroups, Twelfth Graders

	Percentage ever using daily for at least a month										Percentage reporting first such use prior to tenth grade												
	Cls. of 1982	Cls. of 1983	Cls. of 1984	Cls. of 1985	Cls. of 1986	Cls. of 1987	Cls. of 1988	Cls. of 1989	Cls. of 1990	Cls. of 1991	Cls. of 1982	Cls. of 1983	Cls. of 1984	Cls. of 1985	Cls. of 1986	Cls. of 1987	Cls. of 1988	Cls. of 1989	Cls. of 1990	Cls. of 1991	'90-'91 change		
All seniors	20.5	16.8	16.3	15.6	14.9	14.7	12.8	11.5	10.0	9.0	-1.0	13.1	11.1	10.9	8.8	8.5	8.9	7.8	7.6	6.7	6.4	-0.3	
Sex:																							
Male	20.1	18.1	17.2	17.7	16.6	16.2	14.8	12.7	10.6	10.5	-0.1	12.9	12.1	11.8	9.8	8.7	10.2	8.4	8.4	6.9	7.4	+0.5	
Female	18.0	13.5	12.9	12.0	11.6	12.2	9.6	9.7	7.9	6.4	-1.5	11.5	8.3	8.0	6.5	6.6	7.1	6.6	6.0	4.9	4.4	-0.5	
College Plans:																							
None or under 4 yrs	22.5	20.3	18.9	19.6	17.2	18.0	14.5	15.3	12.8	11.5	-1.3	14.2	13.5	12.3	11.8	10.7	11.4	11.0	11.6	9.0	8.7	-0.3	
Complete 4 yrs	13.8	10.5	10.7	10.6	11.0	11.1	9.8	9.1	7.4	6.5	-0.9	8.2	6.5	6.6	5.5	5.2	6.4	5.3	5.1	4.6	4.3	-0.3	
Region:																							
Northeast	25.1	20.4	24.1	20.9	21.5	17.0	13.1	14.6	10.4	10.3	-0.1	17.3	11.9	17.2	12.9	10.3	10.3	9.0	10.7	6.5	8.2	+1.7	
North Central	21.1	15.9	12.8	16.3	11.3	12.7	10.3	13.4	10.8	8.4	-2.4	13.3	12.4	8.4	9.1	7.3	7.7	6.0	7.6	6.7	4.9	-1.8	
South	15.7	12.7	14.0	8.9	11.3	11.9	10.9	8.1	8.7	7.4	-1.3	9.3	8.3	8.5	5.0	6.4	7.4	6.3	5.4	6.2	5.1	-1.1	
West	20.8	21.4	17.6	18.5	12.3	19.7	19.0	12.3	11.0	11.3	+0.3	12.6	13.9	12.1	8.9	11.2	11.7	11.9	8.1	8.0	8.6	+0.6	
Population Density:																							
Large SMSA	23.8	20.0	19.4	18.1	17.0	16.7	14.0	10.6	8.3	7.2	-1.1	15.6	13.7	12.4	12.0	9.6	11.8	8.1	6.0	5.9	5.4	-0.5	
Other SMSA	20.3	18.2	16.6	16.0	14.9	15.0	14.9	12.4	11.7	11.1	-0.6	12.5	12.0	11.5	8.3	8.4	8.8	9.6	8.1	8.1	7.7	-0.4	
Non-SMSA	17.9	12.6	13.2	12.8	13.2	12.2	7.6	10.4	8.2	7.1	-1.1	11.7	8.2	8.5	6.6	7.6	6.4	4.3	7.6	4.3	5.3	+1.0	

NOTE: Level of significance of difference between the two most recent classes: $s = .05$, $ss = .01$, $sss = .001$.

- All three population density levels have shown declines in lifetime daily use.
- Daily use prior to tenth grade has declined from 13% in the class of 1982 to 6% in the class of 1991. (This corresponds to people who were ninth graders between 1979 to 1988). Subgroup trends may be examined in Table 34.

RACIAL/ETHNIC DIFFERENCES IN DRUG USE

Our earlier research (Bachman et al., 1991)³⁰ documented substantial racial/ethnic differences in drug use among high school seniors. The results of this and other research indicate that, on average, licit and illicit drug use is highest among Native American youth, somewhat lower among white and Hispanic youth, and lowest among black and Asian American youth.

We extended our research on racial/ethnic differences in drug use in a recently published article (Wallace & Bachman, 1991).³¹ The purpose of this article was to determine whether the often large racial/ethnic differences in drug use are attributable to racial/ethnic differences in background (e.g., urbanicity of residence, family structure, parental education) and lifestyle factors (e.g., grades, truancy, evenings out, religious commitment).

The results indicate that:

- Controlling for background factors alone does not account for most racial/ethnic differences in drug use, but it does reduce Native Americans' relatively high level of use, suggesting that their use may be related, at least in part, to their disadvantaged socioeconomic status.
- If black seniors were as likely as white seniors to live in two-parent households and have highly educated parents, their drug use might be even lower than reported.
- Controlling for both background and lifestyle factors substantially reduces many of the racial/ethnic differences in drug use, with educational values and behaviors, religious commitment, and amount of time spent in peer-oriented activities being particularly important explanatory variables.

In light of the disadvantaged socioeconomic status of many minority youth, the relatively high dropout rates among a number of these groups, and research which shows that the negative consequences of drug abuse are disproportionately concentrated in

³⁰Bachman, J.G., Wallace, J.M. Jr., O'Malley, P.M., Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health, 81*, 372-377.

³¹Wallace, J.M. Jr. & Bachman, J.G. (1991). Racial/ethnic differences in adolescent drug use: The impact of background and lifestyle. *Social Problems, 38*(3): 333-357.

minority communities, the finding of lower drug use among many black and Hispanic youth relative to white youth is somewhat contrary to expectations. Accordingly, the reliability and validity of these findings are of concern.

Our earlier study (Bachman et al., 1991)³² revealed that the patterns of racial/ethnic differences in drug use replicate over time (1976–1989) and thus they are reliable. In another recent article (Wallace & Bachman, in press)³³ we investigated the validity of the findings. In the absence of objective criteria, this paper examined a number of subjective attitude and perception measures as indicators of the internal validity of racial/ethnic differences in high school seniors' self-reported drug use. It was expected that racial/ethnic differences in drug-related attitudes and perceptions would largely parallel racial/ethnic differences in self-reported drug use, if the drug use self-reports were indeed valid.

Generally, the findings were consistent with expectations.

- Perceived risk of using drugs, disapproval of drug use, and perceptions of disapproval of drug use by friends were typically highest among black and Asian American seniors, at intermediate levels among Hispanic seniors, and lowest among white and Native American seniors.
- Conversely, perceived peer use of drugs and exposure to persons using various drugs for “kicks” were generally lowest among black and Asian seniors, at intermediate levels among Hispanic seniors, and highest among white and Native American seniors.

While we remain cautious in our reporting and interpretation of the racial/ethnic differences in drug use, based on our past research, analyses presently under way, and the research of others, we believe that, at least among those young people who make it to their senior year in high school, the findings of racial/ethnic differences in drug use are, on the whole, valid.

EFFECTS OF MINIMUM DRINKING AGE LAWS

One article published in the past year, and based largely on analyses of the data from the Monitoring the Future project, addressed the issue of the impact of a number of states raising the minimum drinking age to twenty-one, which is now the uniform standard throughout the country.³⁴

³²See Bachman et al., 1991.

³³Wallace, J.M. Jr. & Bachman, J.C. (in press). Validity of self-reports in student based studies on minority populations: Issues and concerns. In *Epidemiologic Research on Minority Youth: Methodological Issues and Recent Theoretical Advances*. NIDA Research Monograph.

³⁴O'Malley, P.M. & Wagenaar, A.C. (1991). Effects of minimum drinking age laws on alcohol use, related behaviors, and traffic crash involvement among American youth: 1976–1987. *Journal of Studies on Alcohol*, 52, 478–491.

- This research had two separate but related purposes: (1) to delineate cross-sectional differences among American high school seniors and young adults that may be due to variations in recent years in state-level minimum drinking age laws, and (2) to examine the effects of recent changes in minimum drinking age laws on alcohol consumption, and on other relevant attitudes and behaviors.
- A separate, coordinated part of the research utilized official reports to examine effects on rates of fatal crashes following increases in the minimum drinking age in several states. These official report data are compared with the findings from self-report data available from high school seniors.
- The major findings were that: (1) higher minimum drinking ages are associated with lower levels of alcohol use among high school seniors and recent high school graduates, even after multivariate controls; (2) lower levels of alcohol use are observed across a broad spectrum of demographic variables; (3) the lower levels of use persist into the early 20's, even though everyone is of legal age; (4) lowered involvement in alcohol-related fatal crashes among drivers less than 21 years of age appears due to less drinking of alcohol—in particular, less drinking in bars or taverns.
- What can be concluded from these results? Perhaps the principal conclusion is that a minimum drinking age of 21 versus a minimum drinking age of 18 does indeed affect the behavior of high school seniors; it leads to lower consumption of alcohol. It has been demonstrated rather conclusively that alcohol-involved highway crashes decline among the 18 to 20 year old population, and the present research makes it clear that the decline is, at least in part, due to lower levels of consumption. And it also appears that the major factor in the reduced rate of crashes may be that the under-21 group spends less time in bars and taverns when the minimum drinking age is 21. Another important finding is that the lower rates of drinking appear to continue as young adults mature, at least through the early twenties. Thus, the lowered rates of drinking in the 18 to 20 age range are not compensated for by a higher rate of drinking after enfranchisement is achieved, but in fact continue even after alcohol is legally accessible.
- As with all social science research in a real-life, nonlaboratory situation, it is difficult to make indisputable inferences. Whenever an effect is claimed, it is necessary to rule out potential alternative explanations. The most common alternative explanation for cross-sectional differences in behavior, such as drinking by high school seniors, associated with different minimum ages is that states with differing ages also differ on other factors. On a similar issue,

Bentler (1981)³⁵ cites California as being reputed to have less traditional standards of religion (among other things), and he notes that this difference could serve as a competing explanation for differences in marijuana use that might otherwise be attributed to differences in the legal status of marijuana.

- In the present research, the cross-sectional analyses showed a significant association between minimum drinking age and alcohol use even after controlling an number of important individual-level factors associated with alcohol use. If adolescents in certain areas tended to drink less because there were higher levels of "community religiosity" or some other indicator of anti-alcohol sentiment, these would presumably be captured by individual-level variables that would serve as indicators of commitment to societal institutions. The introduction of variables such as religious commitment and grades should, if minimum drinking age effects were spurious, lead to less significant values for the relevant measures of association. But there were essentially no differences between the bivariate and multivariate associations. The most parsimonious explanation remains the most obvious one: minimum drinking age laws do have an effect.
- A particular strength of the present analyses is that such extraneous factors as use of other substances or amount of driving were statistically controlled at the individual level, and variations associated with changes in minimum drinking age laws remained. Also of considerable importance in drawing causal inferences is the fact that many of the states changed their laws in response to external forces, in this case in response to federal requirements. The law changes were therefore not merely indicators of existing cultural sentiment, nor would they be expected to bring about shifts in other variables like religiosity or anti-alcohol attitudes. The clear effects observed in a variety of states are very unlikely to be due to extraneous factors.
- This research has also demonstrated that the decline in single-vehicle nighttime crash rates which was observed after the minimum age was raised, was accompanied by lower rates of alcohol use and lower amounts of time spent in bars and taverns.
- The authors point out that drinking still remains widespread among seniors, and that this is not surprising. Alcohol use is a very common social practice among adults, particularly among young adults. Enforcement of minimum drinking age laws tends to be lax in most states. The use of alcohol is heavily promoted and glamourized in commercials. Consequently, societal changes beyond the minimum drinking age laws are needed if drinking among underage youngsters is to be further reduced.

³⁵Bentler, P. (1981). A multivariate view of marijuana decriminalization research. *Contemporary Drug Problems*, 10, 419-433.

OTHER DATA ON CORRELATES AND TRENDS

Hundreds of correlates of drug use, without accompanying interpretation, may be found in the series of annual volumes from the study entitled *Monitoring the Future: Questionnaire Responses from the Nation's High School Seniors*.³⁶ For each year since 1975, a separate hardbound volume presents univariate and selected bivariate distributions on all questions contained in the study. A host of variables dealing explicitly with drugs—many of them not covered here—are contained in that series. Bivariate tables are provided for *all* questions each year distributed against an index of lifetime illicit drug involvement, making it possible to examine the relationship between hundreds of potential “risk factors” and drug use.

A special cross-time reference index is contained in each volume to facilitate locating the same question across different years. One can thus derive *trend* data on some 1500 to 2000 variables for the entire sample or for important subgroups (based on sex, race, region, college plans, and drug involvement).

³⁶This series is available from the Publications Division, Institute for Social Research, The University of Michigan, Ann Arbor, Michigan 48109.

APPENDIX

PREVALENCE AND TREND ESTIMATES ADJUSTED FOR ABSENTEES AND DROPOUTS

One question which has arisen over the years in regard to this study has concerned the degree to which the prevalence and trend estimates derived from high school seniors are an accurate reflection of the reality which pertains for all young people who would be in the same class or age cohort, including those who have dropped out of school by senior year. In 1985 we published an extensive chapter on this topic in a volume in the NIDA Research Monograph series.³⁷ We will attempt in this Appendix to summarize the main points relevant to this issue of sample coverage.

First, it should be noted that two segments of the entire class/age cohort are missing from the data collected each year from seniors: those who are still enrolled in school but who are absent the day of data collection (the "absentees") and those who have formally left school (the dropouts). The "absentees" constitute virtually all of the nonrespondents shown in the response rate given in Table 1 in Chapter 3 of this volume (since refusal rates are negligible) or about 18% of all seniors (or 15% of the class/age cohort). Based on our review of available Census data the dropouts account for approximately 15% of the class/age cohort.

The methods we used to estimate the prevalence rates for these two missing segments are summarized briefly here. Then, the effects of adding in these two segments to the calculation of the overall prevalence rates for two drug classes are presented along with the impact on the trend estimates. Two illicit drugs have been chosen for illustrative purposes: marijuana, the most prevalent of the illicit drugs, and cocaine, one of the more dangerous and less prevalent drugs. Estimates for high school seniors are presented for both lifetime and 30-day prevalence for each drug.

THE EFFECTS OF MISSING ABSENTEES

To be able to assess the effects on the estimates of drug use of missing the absentees, we included a question in the study which asks students how many days of school they had missed in the previous four weeks. Using this variable, we can place individuals into different strata as a function of how often they tend to be absent. For example, all students who had been absent 50% of the time could form one stratum. Assuming that absence on the day of the administration is a fairly random event, we can use the respondents in this stratum to represent all students in their stratum, including the ones who happen to be absent that particular day. By giving them a double weight, they can be used to represent both themselves *and* the other 50% of their stratum who were absent that day. Those who say they were in school only one-third of the time

³⁷Johnston, L.D., & O'Malley, P.M. (1985). Issues of validity and population coverage in student surveys of drug use. In B.A. Rouse, N.J. Kozel, & L.G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57; (ADM) 85-1402). Washington, DC: U.S. Government Printing Office.

would get a weight of three to represent themselves plus the two-thirds in their stratum who were not there, and so forth. Using this method, we found that absentees as a group have appreciably higher than average usage levels for all licit and illicit drugs. However, looking at 1983 data, we found that their omission did not depress any of the prevalence estimates in any of the drugs by more than 2.7%, due to the fact that they represent such a small proportion of the total target sample. Considering that a substantial proportion of those who are absent likely are absent for reasons unrelated to drug use—such as illness and participation in extracurricular activities—it may be surprising to see even these differences. In any case, from the point of view of instructing policy or public perceptions, the small “corrections” would appear to be of little or no significance. (The correction across all 13 drugs in lifetime prevalence averaged only 1.4%.) Further, such corrections should have virtually no effect on cross-time trend estimates unless the rate of absenteeism was changing appreciably; and we find no evidence in our data that it has. Put another way, the presence of a fairly slight underestimate which is constant across time should not influence trend results. Should absentee rates start changing, then it could be argued more convincingly that such corrections should be presented routinely.

THE EFFECTS OF MISSING DROPOUTS

Unfortunately, we cannot derive corrections from data gathered from seniors to impute directly the prevalence rates for dropouts, as we did for absentees, since we have no completely appropriate stratum from which we have “sampled.” We do know from our own previous research, as well as the work of others, that dropouts have prevalence rates for all classes of drugs substantially higher than the in-school students. In fact, the dropouts may be fairly similar to the absentees.

We have consistently estimated the proportion who fail to complete high school to be approximately 15%; Figure A-1 displays the completion rate for the years 1972 through 1989 based on Census data. As the figure indicates, completion rates (and the complement, dropout rates) have been quite constant over this interval for persons 20–24 years old.³⁸ (Younger age brackets are more difficult to use because they include some young people who are still enrolled in high school.) Monitoring the Future probably covers some small proportion of the 15%, in fact, since the survey of seniors takes place a few months before graduation, and not everyone will graduate. On the other hand, perhaps 1% to 2% of the age group which Census shows as having a diploma get it through a General Equivalency Degree and thus would not be covered in Monitoring the Future. (Elliot and Voss report this result for less than 2% of their sample in their follow-up study of 2617 ninth graders in California who were followed through their high school years.)³⁹ So these two factors probably cancel each other out. Thus, we use 15% as our estimate of the proportion of a class cohort not covered.

³⁸U.S. Bureau of the Census (various years). *Current population reports, Series P-20*, various numbers. Washington, DC: U.S. Government Printing Office.

³⁹Elliott, D., & Voss, H.L. (1974). *Delinquency and dropout*. Lexington, MA: D.C. Heath-Lexington Books.

Extrapolating to dropouts from absentees. To estimate the drug usage prevalence rates for this group we have used two quite different approaches. The first was based on extrapolations from seniors participating in this study. Using this method we developed estimates under three different assumptions: that the difference between dropouts and the participating seniors in the study was equivalent to (a) the difference between absentees and the participating seniors, (b) one and one-half times that difference, and (c) twice that difference. The last assumption we would consider a rather extreme one.

The second general method involved using the best national data on drug use among dropouts—namely the National Household Surveys on Drug Abuse.⁴⁰ While these surveys have rather small samples of dropouts in the relevant age range in any given year, they should at least provide unbiased estimates for dropouts still in the household population.

Using the first method of estimation, we found that, under the assumption that dropouts are just like absentees, no prevalence rate was changed by more than 5% over the estimate based on 1983 seniors only, even with the simultaneous correction for **both** absentees and dropouts. (The method for calculating prevalence rates for the absentees is the one described in the previous section.) The largest correction in 1983 involved marijuana, with lifetime prevalence rising from just under 60% to 64%. Even under the most extreme assumption—which results in exceptionally high prevalence rates for dropouts on all drugs, for example 90% lifetime prevalence for marijuana, the overall correction in any of the prevalence figures for any drug remains less than 7.5%. Again, marijuana shows the biggest correction (7.5% in annual prevalence, raising it from 46% uncorrected to 54% with corrections for both absentees and dropouts). As we would have expected, the biggest *proportional* change occurs for heroin, since it represents the most deviant end of the drug-using spectrum and thus would be most associated with truancy and dropping out.

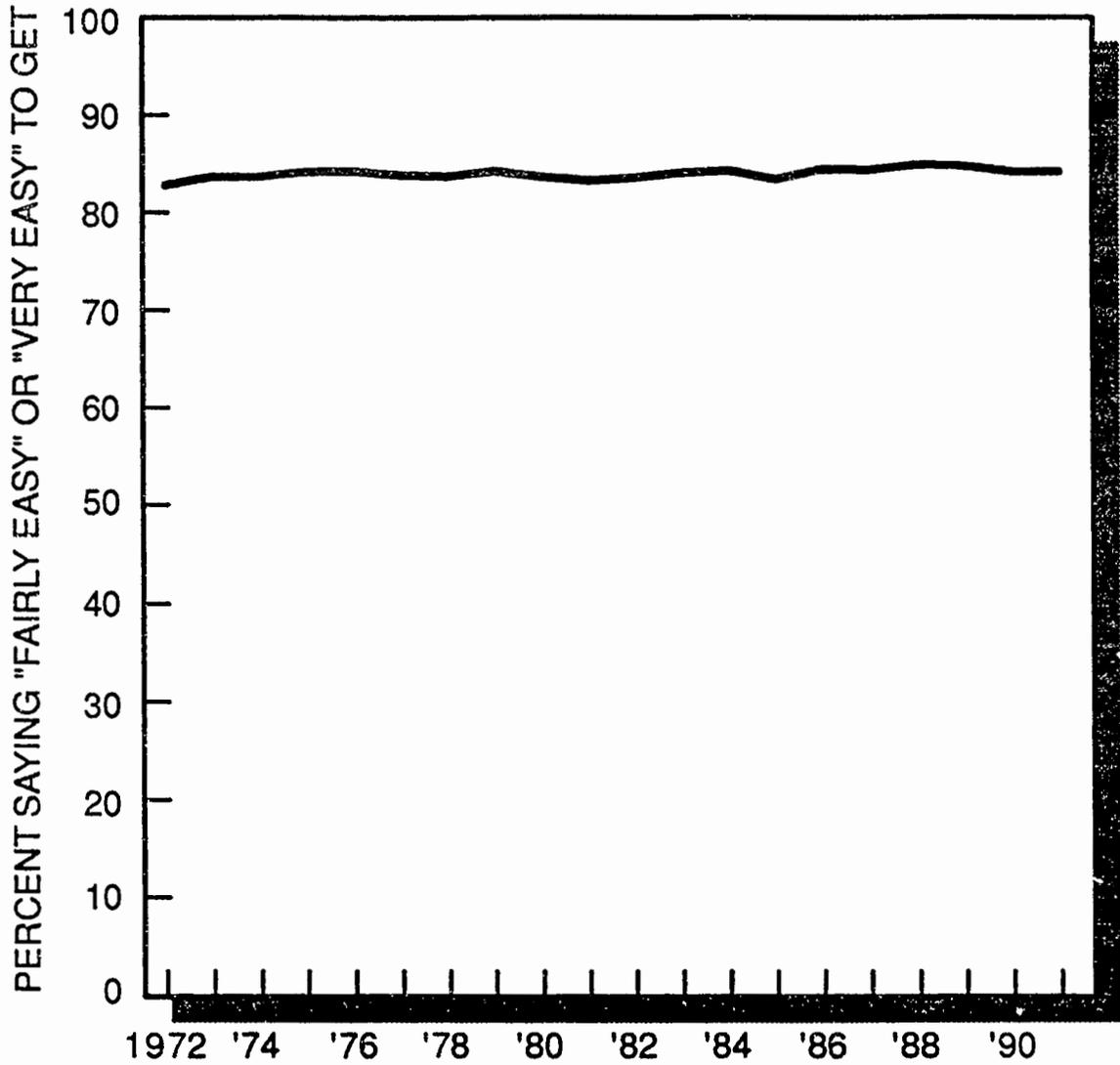
Extrapolating from the household surveys. The second method of estimating drug use among dropouts was by comparing the household survey data on dropouts with the data from those remaining in school. We conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys. Analyses were restricted to the age range 17 to 19 years old, since about 95% of the Monitoring the Future respondents fall in this range. Of course, the numbers of cases are small. In the 1977 survey there were only 46 dropouts and 175 enrolled seniors in this age group. In the 1979 survey 92 dropouts and 266 seniors were included.

For marijuana, the estimated differences from the household survey data came out at a level which was at or below the *least* extreme assumption made in the previous method (where dropouts are assumed to have the same drug use levels as absentees). While this may have been comforting to the authors of the present report, we must admit that we believe these household samples underrepresented the more drug-prone dropouts to some degree. Thus we concluded that estimates closer to those made under the second

⁴⁰Fishburne, P.M., Abelson, H.I., & Cisin, I. (1980). *National survey on drug abuse: Main findings, 1979* (NIDA (ADM) 80-976). Washington, DC: U.S. Government Printing Office. Also see Miller, J.D., et al., (1983). *National survey on drug abuse: Main findings, 1982* (NIDA (ADM) 83-1253). Washington, DC: U.S. Government Printing Office.

FIGURE A-1

High School Completion by Persons 20-24 Years Old, 1972-1991
U.S. Population



Source: U.S. Bureau of the Census, Current Populations Surveys, published and unpublished data; and 1980 Census.

assumption in the previous method may be closer to reality—that is, that dropouts are likely to deviate from participating seniors by one and one-half times the amount that absentees deviate from them.

Again, we emphasize that there are a number of reasons for dropping out, many of which bear no relationship to drug use, including economic hardship in the family and certain learning disabilities and health problems. At the national level, the extreme groups such as those in jail or without a permanent place of residence are undoubtedly very small as a proportion of the total age group and probably even as a proportion of all dropouts. Thus, regardless of their prevalence rates, they would be unable to move the prevalence estimates by a very large proportion except in the case of the most rare events—in particular, heroin use. We do believe that in the case of heroin use—particularly regular use—we are very likely unable to get a very accurate estimate even with the corrections used in this paper. The same may be true for crack cocaine and PCP. For the remaining drugs, we conclude that our estimates based on participating seniors, though somewhat low, are not bad approximations for the age group as a whole.

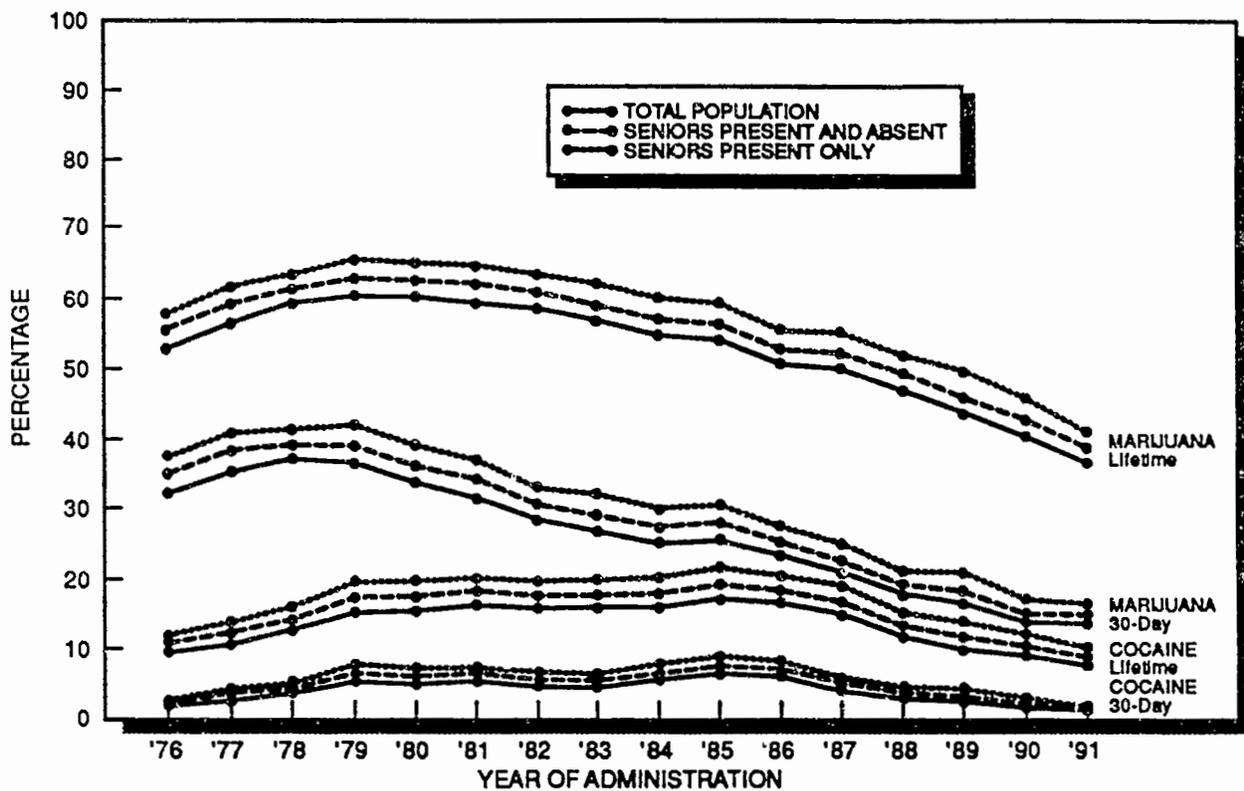
Effects of omitting dropouts in trend estimates. Whether the omission of dropouts affects the estimates of *trends* in prevalence rates is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier regarding the possible effects on trends of omitting the absentees. Most important is the question of whether the rate of dropping out has been changing in the country, since a substantial change would mean that seniors studied in different years would represent noncomparable segments of the whole class/age cohort. Fortunately for the purposes of this study, at least, the official government data provided in Figure A-1 indicate a very stable rate of dropping out since 1972.

Given that there appears to be no sound evidence of a change in the dropout rate, the only reason that trend data from seniors would deviate from trends for the entire class cohort (including dropouts) would be if the constant proportion who have been dropping out showed trends contrary to those observed among seniors; and even then, because of their small numbers, they would have to show dramatically different trends to be able to change the trend “story” very much for the age group as a whole. There has been no hypothesis offered for such a differential shift among dropouts which these authors, at least, find very convincing.

The one hypothesis which is occasionally heard is that more youngsters are being expelled from school, or voluntarily leaving school, because of their drug use; and that this explains the recent downturn in the use of many drugs being reported by the study. However, it is hard to reconcile this hypothesis with the virtually flat dropout rates over the period displayed in Figure A-1, unless one posits a perfectly offsetting tendency for more completion among those who are less drug prone—hardly a very parsimonious set of explanations. Further, the reported prevalence of some drugs has remained remarkably stable throughout most of the life of the study (e.g., alcohol and opiates other than heroin) and the prevalence of some has risen (cocaine until 1987, and amphetamines until 1981). These facts are not very consistent with the hypothesis that there has been a recent increased rate of departure by the most drug prone. Certainly more youngsters leaving school in the 80's have drug problems than was true in the 60's. (So do more of those who stay in.) However, they still seem likely to be very much the same segment of the population, given the degree of association that exists between drug use and deviance and problem behaviors of various sorts.

FIGURE A-2

Estimates of Prevalence and Trends for the Entire Age/Class Cohort,
Adjusting for Absentees and Dropouts



SUMMARY AND CONCLUSIONS

In sum, while we believe there is some underestimation of the prevalence of drug use in the cohort at large as a result of the dropouts being omitted from the universe of the study, we think the degree of underestimation is rather limited for all drugs (with the possible exceptions of heroin, crack and PCP) and, more importantly, that trend estimates have been rather little affected. Short of having good trend data gathered directly from dropouts—a more expensive and technically difficult research undertaking—we cannot close the case definitively. Nevertheless, we think the available evidence argues strongly against alternative hypotheses—a conclusion which was also reached by the members of the NIDA technical review on this subject held in 1982.⁴¹

... the analyses provided in this report show that failure to include these two groups (absentees and dropouts) does not substantially affect the estimates of the incidence and prevalence of drug use.

EXAMPLES OF REVISED ESTIMATES FOR TWO DRUGS

Figure A-2 provides the prevalence and trend estimates of marijuana and cocaine, for both the lifetime and thirty-day prevalence periods, showing (a) the original estimates based on participating seniors only; (b) the empirically derived, revised estimates based on all seniors, including the absentees; and (c) estimates for the entire class/age cohort. The last estimate was developed using the assumption judged to be most reasonable above—namely that the dropouts differ from participating seniors by one and one-half times the amount that the absentees do. Estimates were calculated separately for each year, thus taking into account any differences from year to year in the participation or absentee rates. The dropout rate was taken as a constant 15% of the age group across all years, based on Census estimates.

As Figure A-2 illustrates, any difference in the slopes of the trend lines between the original and revised estimates is extremely, almost infinitesimally, small. The prevalence estimates are higher, of course, but not dramatically so, and certainly not enough so to have any serious policy implications.

⁴¹Clayton, R.R., & Voss, H.L. (1982). *Technical review on drug abuse and dropouts*. Rockville, MD: National Institute on Drug Abuse.

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