

National Institute on Drug Abuse

**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 Justice
National Institute of Justice

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**SMOKING, DRINKING, AND ILLICIT DRUG USE
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Volume I
Secondary School Students

by

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ABBREVIATED TABLE OF CONTENTS*

Volume 1

	<u>Page</u>
<i>Detailed Contents</i>	v
<i>List of Tables</i>	ix
<i>List of Figures</i>	xiii
<i>Chapter 1</i> Introduction	1
<i>Chapter 2</i> Overview of Key Findings	7
<i>Chapter 3</i> Study Design and Procedures	21
<i>Chapter 4</i> Prevalence of Drug Use Among Eighth, Tenth, and Twelfth Grade Students	33
<i>Chapter 5</i> Trends in Drug Use Among High School Seniors	71
<i>Chapter 6</i> Use at Earlier Grade Levels	115
<i>Chapter 7</i> Degree and Duration of Drug Highs	145
<i>Chapter 8</i> Attitudes and Beliefs about Drugs	153
<i>Chapter 9</i> The Social Milieu	177
<i>Chapter 10</i> Other Findings from the Study	205
<i>Appendix</i> Estimates Adjusted for Absentees and Dropouts	225

*See next page for Detailed Contents.

DETAILED CONTENTS

Volume I

	<u>Page</u>
Chapter 1 Introduction	1
Surveys of High School Seniors	1
Surveys of Eighth and Tenth Grade Students	1
Surveys of College Students and Young Adults Generally	2
Content Areas Covered in This Report	2
Purposes and Rationale for This Research	4
Chapter 2 Overview of Key Findings	7
Trends in Illicit Drug Use	7
College-Noncollege Differences	11
Male-Female Differences	12
Trends in Alcohol Use	12
College-Noncollege Differences	13
Male-Female Differences	13
Trends in Cigarette Smoking	14
Age and Cohort-Related Differences	14
College-Noncollege Differences	15
Male-Female Differences	15
Drug Use in Eighth and Tenth Grades	15
Racial/Ethnic Comparisons	16
Summary and Conclusions	17
Chapter 3 Study Design and Procedures	21
Research Design and Procedures for the Surveys of Seniors	21
Research Design and Procedures for the Surveys of Eighth and Tenth Graders	23
Research Design and Procedures for the Follow-Up Surveys of Seniors	25
Panel Retention Rates	25
Corrections for Panel Attrition	26
Representativeness and Validity	26
Validity of the Measures of Self-Reported Drug Use	28

SECONDARY SCHOOL STUDENTS

<i>Chapter 4</i>	Prevalence of Drug Use Among Eighth, Tenth, and Twelfth Grade Students	33
	Prevalence and Frequency of Drug Use in 1991: All Students ...	33
	Lifetime, Annual, and Monthly Prevalence and Frequency ..	33
	Daily Prevalance	43
	Noncontinuation Rates	52
	Prevalence Comparisons for Important Subgroups	53
	Sex Differences	53
	Differences Related to College Plans	55
	Regional Differences	56
	Differences Related to Population Density	60
	Differences Related to Parental Education	65
	Racial/Ethnic Differences	67
 <i>Chapter 5</i>	 Trends in Drug Use Among High School Seniors	 71
	Trends in Prevalence 1975-1991: All Seniors	71
	Trends in Noncontinuation Rates	94
	Comparisons Among Subgroups in Trends in Prevalence	97
	Sex Differences in Trends	97
	Trend Differences Related to College Plans	99
	Regional Differences in Trends	102
	Trend Differences Related to Population Density	106
	Racial/Ethnic Differences in Trends Among Seniors	112
 <i>Chapter 6</i>	 Use at Earlier Grade Levels	 115
	Incidence of Use by Grade Level	116
	Trends in Use at Earlier Grade Levels	122
 <i>Chapter 7</i>	 Degree and Duration of Drug Highs	 145
	Degree and Duration of Highs Among Seniors in 1991	145
	Trends in Degree and Duration of Drug Highs	149
 <i>Chapter 8</i>	 Attitudes and Beliefs about Drugs	 153
	Perceived Harmfulness of Drugs	153
	Beliefs about Harmfulness Among Twelfth Graders	153
	Beliefs about Harmfulness Among Eighth and Tenth Graders	157
	Trends in Perceived Harmfulness Among Twelfth Graders ...	157
	Personal Disapproval of Drug Use	166
	Extent of Disapproval Among Twelfth Graders	166
	Extent of Disapproval Among Eighth and Tenth Graders ...	169
	Trends in Disapproval Among Seniors	169

Attitudes Regarding the Legality of Drug Use	170
Attitudes of Seniors in 1991	172
Trends in These Attitudes	172
The Legal Status of Marijuana	173
Attitudes and Predicted Response to Legalization	173
Trends in Attitudes and Predicted Responses	175
<i>Chapter 9</i> The Social Milieu	177
Perceived Attitudes of Parents and Friends	177
Perceptions of Parental Attitudes	177
Seniors' Perceptions of Their Friends' Attitudes	179
A Comparison of the Attitudes of Parents, Peers and Respondents	180
Trends in Seniors' Perceptions of Parents' and Friends' Attitudes	180
Exposure to Drug Use by Friends and Others	185
Exposure to Drug Use by Seniors in 1991	186
Trends in Exposure to Drug Use by Seniors	190
Implications for Validity of Self-Reported Usage Questions	195
Friends' Use at Lower Grade Levels	195
Perceived Availability of Drugs	196
Perceived Availability in 1991	196
Trends in Perceived Availability for Seniors	197
The Importance of Supply Reduction vs. Demand Reduction .	202
<i>Chapter 10</i> Other Findings from the Study	205
The Use of Nonprescription Stimulants	205
Prevalence of Use in 1991 Among Seniors	205
Subgroup Differences	209
Trends in Use Among Seniors	211
The Use of Marijuana on a Daily Basis	213
Lifetime Prevalence of Daily Use	213
Grade of First Daily Use	214
Recency of Daily Use	214
Duration of Daily Use	214
Subgroup Differences	216
Trends in Use of Marijuana on a Daily Basis	216
Racial/Ethnic Differences in Drug Use	218
Effects of Minimum Drinking Age Laws	219
Other Data on Correlates and Trends	222
<i>Appendix</i> Prevalence and Trend Estimates Adjusted for Absentees and Dropouts	225
The Effects of Missing Absentees	225
The Effects of Missing Dropouts	226
Summary and Conclusions	231
Examples of Revised Estimates for Two Drugs	231

LIST OF TABLES

Volume I

	<u>Page</u>
1. Sample Sizes and Response Rates	24
SECONDARY SCHOOL STUDENTS	
2. Lifetime Prevalence (Percent Ever Used) of Various Types of Drugs: Observed Estimates and 95% Confidence Limits. Class of 1991	34
3. Lifetime Prevalence (Percent Ever Used) and Recency of Use of Various Types of Drugs	
a. Eighth Graders, 1991	37
b. Tenth Graders, 1991	38
c. Twelfth Grade, 1991	39
4. A Comparison of Drug Usage Rates. Eighth, Tenth, and Twelfth Graders, 1991	44
5. Lifetime, Annual, and 30-Day Frequency of Use of Various Types of Drugs. Eighth, Tenth, and Twelfth Graders, 1991	45
6. Frequency of Cigarette Use and Occasions of Heavy Drinking. Eighth, Tenth, and Twelfth Graders, 1991	50
7. Lifetime Prevalence of Use of Various Types of Drugs by Subgroups. Twelfth Graders, 1991	54
8. Annual Prevalence of Use of Various Types of Drugs by Subgroups. Eighth, Tenth and Twelfth Graders, 1991	57
9. Thirty-Day Prevalence of <u>Daily</u> Use of Marijuana, Alcohol, and Cigarettes by Subgroups. Eighth, Tenth and Twelfth Graders, 1991	61
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	62
11. Trends in Lifetime Prevalence of Various Types of Drugs	72
12. Trends in Annual Prevalence of Various Types of Drugs	73

Tables (cont.)

13. Trends in Thirty-Day Prevalence of Various Types of Drugs	74
14. Trends in 30-Day Prevalence of <u>Daily</u> Use of Various Types of Drugs . . .	75
15. Trends in Lifetime, Annual, and Thirty-Day Prevalence in an Index of Illicit Drug Use	77
16. Trends in Noncontinuation Rates Among Twelfth Graders Who Ever Used Drug in Lifetime	95
17. Trends in Noncontinuation Rates Among Twelfth Graders Who Used Drug Ten or More Times in Lifetime	96
18. Incidence of Use for Various Types of Drugs, by Grade	
a. Eighth Graders, 1991	117
b. Tenth Graders, 1991	118
c. Twelfth Graders, 1991	119
d. Comparison of Responses from Eighth, Tenth, and Twelfth Graders, 1991	120
19. Harmfulness of Drugs as Perceived by Eighth, Tenth, and Twelfth Graders, 1991	155
20. Trends in Harmfulness of Drugs as Perceived by Twelfth Graders	156
21. Disapproval of Drug Use by Eighth, Tenth, and Twelfth Graders, 1991 .	167
22. Trends in Proportions of Twelfth Graders Disapproving of Drug Use . . .	168
23. Trends in Twelfth Graders' Attitudes Regarding Legality of Drug Use . .	171
24. Trends in Twelfth Graders' Attitudes Regarding Marijuana Laws	174
25. Trends in Proportion of Friends Disapproving of Drug Use. Twelfth Graders	178
26. Friends' Use of Drugs as Estimated by Eighth, Tenth, and Twelfth Graders, 1991	187
27. Trends in Proportion of Friends Using Drugs as Estimated by Twelfth Graders	191
28. Trends in Twelfth Graders' Exposure to Drug Use	193

29. Trends in Perceived Availability of Drugs. Eighth, Tenth, and Twelfth Graders, 1991	200
30. Trends in Perceived Availability of Drugs. Twelfth Graders	201

OTHER FINDINGS FROM THE STUDY

31. Stimulants: Trends in Twelfth Graders' Lifetime, Annual, and Thirty-Day Prevalence, by Sex	
a. Non-Prescription Diet Pills	206
b. Stay-Awake Pills	207
c. Look-Alikes	208
32. Percent of Twelfth Graders in Each Category of an Illicit Drug Use Index Who Have Tried Various Over-the-Counter Stimulants, 1991	210
33. Daily Marijuana Use: Responses to Selected Questions by Subgroups. Twelfth Graders, 1991	215
34. Trends in Daily Use of Marijuana in Lifetime by Subgroups. Twelfth Graders	217

LIST OF FIGURES

Volume I

	<u>Page</u>
1. Location of Schools Surveyed	22
SECONDARY SCHOOL STUDENTS	
2. Prevalence and Recency of Use: Various Types of Drugs. Eighth, Tenth, and Twelfth Graders, 1991	40
3. Thirty-Day Prevalence of Daily Use: Various Types of Drugs. Eighth, Tenth and Twelfth Graders, 1991	49
4. Noncontinuation Rates: Percent of Seniors Who Used Drug Once or More in Lifetime but Did Not Use in Past Year	51
5. States Included in the Four Regions of the Country	66
6. Trends in Lifetime Prevalence of an Illicit Drug Use Index. All Seniors	78
7. Trends in Annual Prevalence of an Illicit Drug Use Index. All Seniors	80
8. Trends in Thirty-Day Prevalence of an Illicit Drug Use Index. All Seniors	82
9. Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs. All Seniors	
a. Marijuana and Stimulants	84
b. Tranquilizers, Inhalants, and Amyl and Butyl Nitrites	85
c. Sedatives, Barbiturates, and Methaqualone	86
d. Hallucinogens, LSD, and PCP	87
e. Cocaine, Other Opiates, and Heroin	88
f. Alcohol and Cigarettes	89
10. Trends in Seniors' Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes by Sex	90
11. Trends in Two-Week Prevalence of Heavy Drinking Among Seniors by Sex	91
12. Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index by Sex	100
13. Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index by College Plans	101

Figures (cont.)

14. Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index by Region of the Country	103
15. Trends in Seniors' Lifetime Prevalence of Cocaine Use by Region of the Country	105
16a. Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index by Population Density	108
16b. Trends in Seniors' Annual Prevalence of Alcohol, Marijuana, and Cocaine Use by Population Density	109
17a. Trends in Seniors' Annual Prevalence of Marijuana and Cocaine Use by Race/Ethnicity	110
17b. Trends in Seniors' Prevalence of 5 or More Drinks in the Past 2 Weeks and Daily Use of Cigarettes by Race/Ethnicity	111
18. Trends in Lifetime Prevalence for Earlier Grade Levels Based on Retrospective Reports from Seniors	
a. Use of Any Illicit Drug	126
b. Use of Any Illicit Drug Other Than Marijuana	127
c. Use of Any Illicit Drug Other Than Marijuana or Amphetamines ..	128
d. Marijuana	129
e. Cocaine	130
f. Stimulants	131
g. Hallucinogens	132
h. LSD	133
i. PCP	134
j. Inhalants	135
k. Nitrites	136
l. Barbiturates	137
m. Methaqualone	138
n. Tranquilizers	139
o. Heroin	140
p. Other Opiates	141
q. Cigarette Smoking on a Daily Basis	142
r. Alcohol	143
19. Degree of Drug Highs Attained by Recent Users. Class of 1991	146
20. Duration of Drug Highs Attained by Recent Users. Class of 1991	147

Figures (cont.)

21. Trends in Perceived Harmfulness: Marijuana and Cigarettes. All Seniors	158
22. Trends in Perceived Harmfulness: Cocaine. All Seniors	159
23. Marijuana: Trends in Perceived Availability, Perceived Risk of Regular Use, and Prevalence of Use in Past Thirty-Days. All Seniors	160
24. Cocaine: Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Past Year. All Seniors	161
25. Trends in Perceived Harmfulness: Other Drugs. All Seniors	162
26. Trends in Disapproval of Illicit Drug Use. Seniors, Parents, and Peers	
a. Marijuana	181
b. Amphetamines, Cocaine, Barbiturates, and LSD	182
27. Trends in Disapproval of Licit Drug Use: Seniors, Parents, and Peers ..	183
28. Proportion of Friends Using Each Drug as Estimated by Eighth, Tenth, and Twelfth Graders, 1991	188
29. Trends in Perceived Availability of Drugs. All Seniors	
a. Marijuana, Amphetamines, Cocaine, and Crack	198
b. Tranquilizers, Barbiturates, Other Opiates, Hallucinogens, Heroin .	199

OTHER FINDINGS FROM THE STUDY

30. Prevalence and Recency of Use, by Sex. Amphetamines and of Non-Prescription Stimulants, Class of 1991	212
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APPENDIX

A-1. High School Completion by Persons 20-24 Years Old, 1972-1989. U.S. Population	228
A-2. Estimates of Prevalence and Trends for the Entire Age/Class Cohort, Adjusting for Absentees and Dropouts	230

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.

¹Johnston, 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

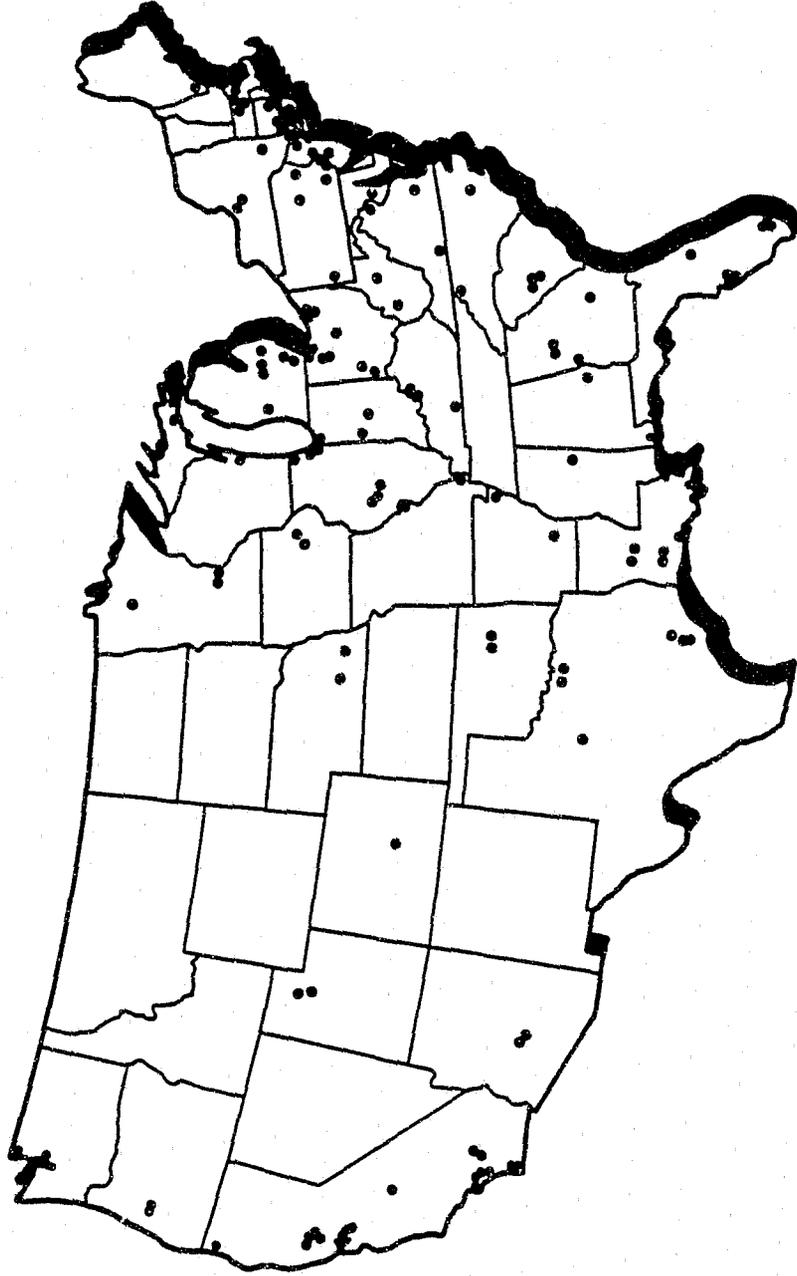
The data from high school seniors are collected during the spring of each year, beginning with the class of 1975. Each data collection takes place in approximately 125 to 135 public and private high schools selected to provide an accurate representative cross-section of high school seniors throughout 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	1.3	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/Haahiah	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)

	<u>Ever used</u>	<u>Past month</u>	<u>Past year, not past month</u>	<u>Not past year</u>	<u>Never used</u>
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

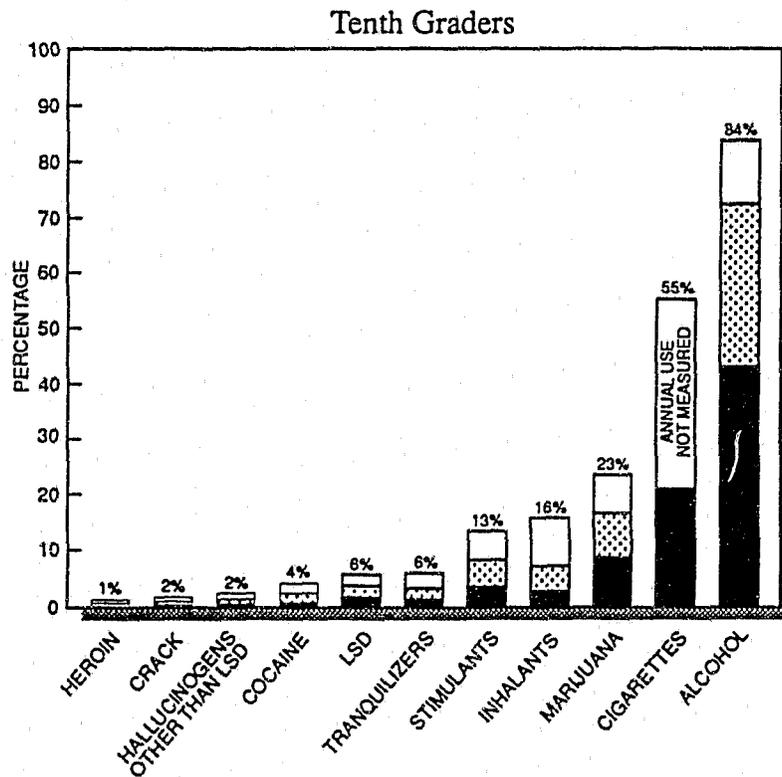
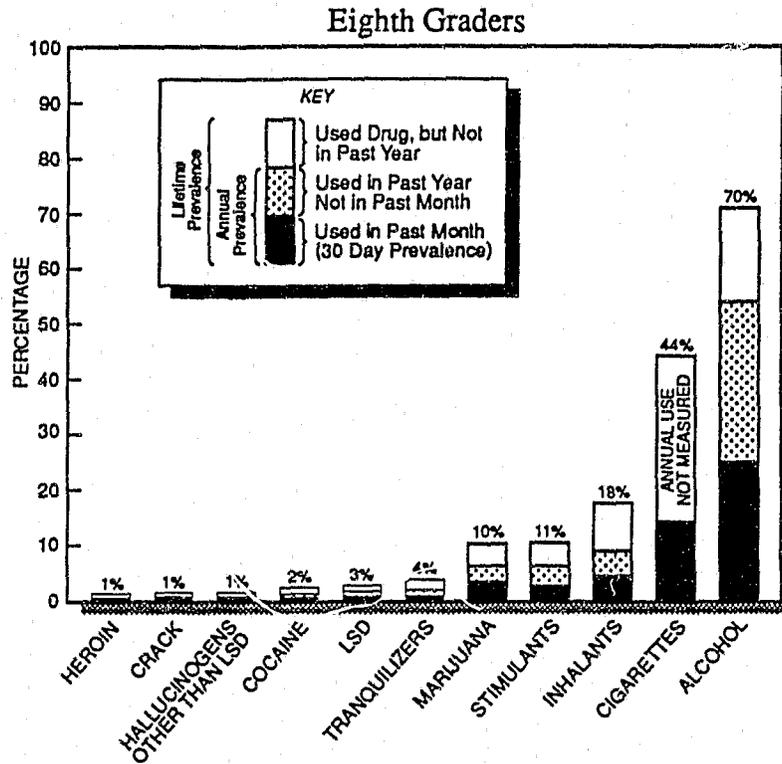
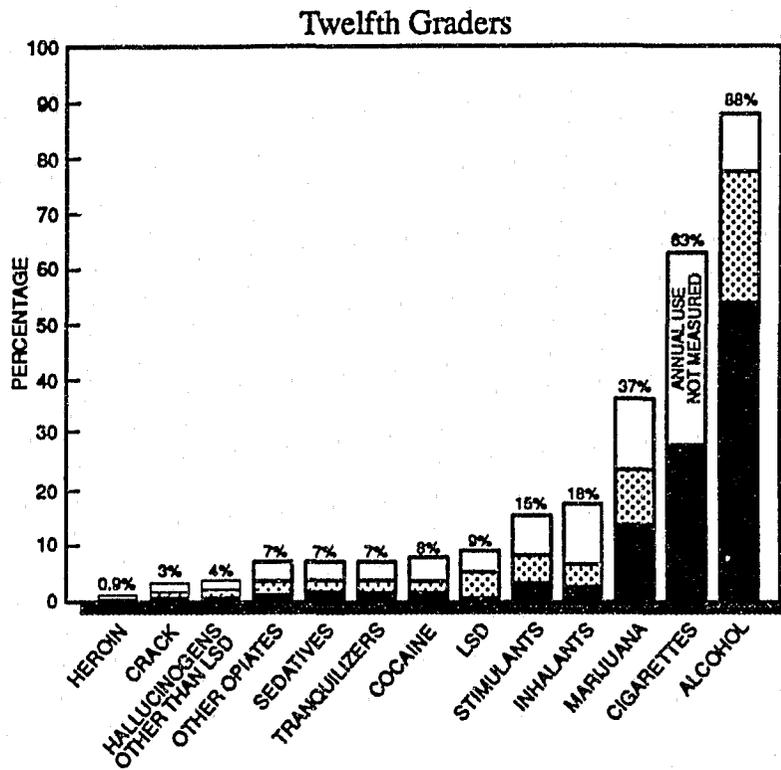


FIGURE 2 (cont.)

**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/Haashiah	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 ^f	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	2600	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	NA	NA	0.2	*	*	0.1	*	*	0.1	NA	NA	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.

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	93.8	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.

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	39.4	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	*	*	
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.

^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.

FIGURE 3

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

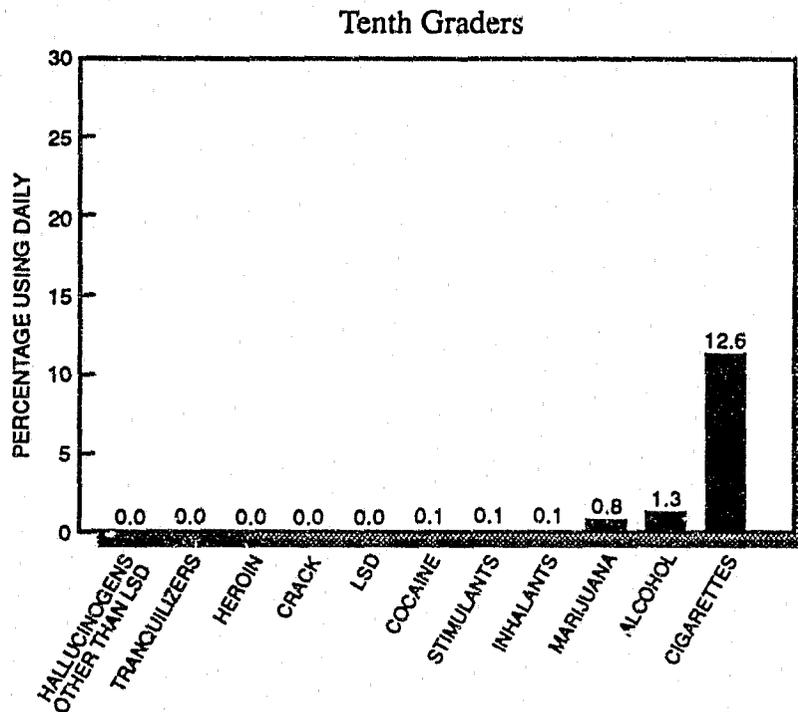
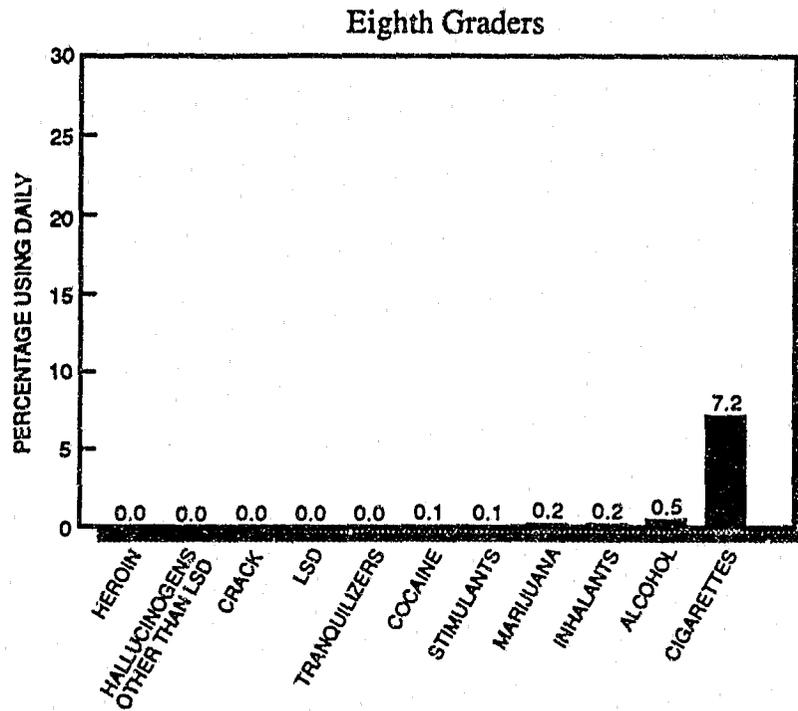


FIGURE 3 (cont.)

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

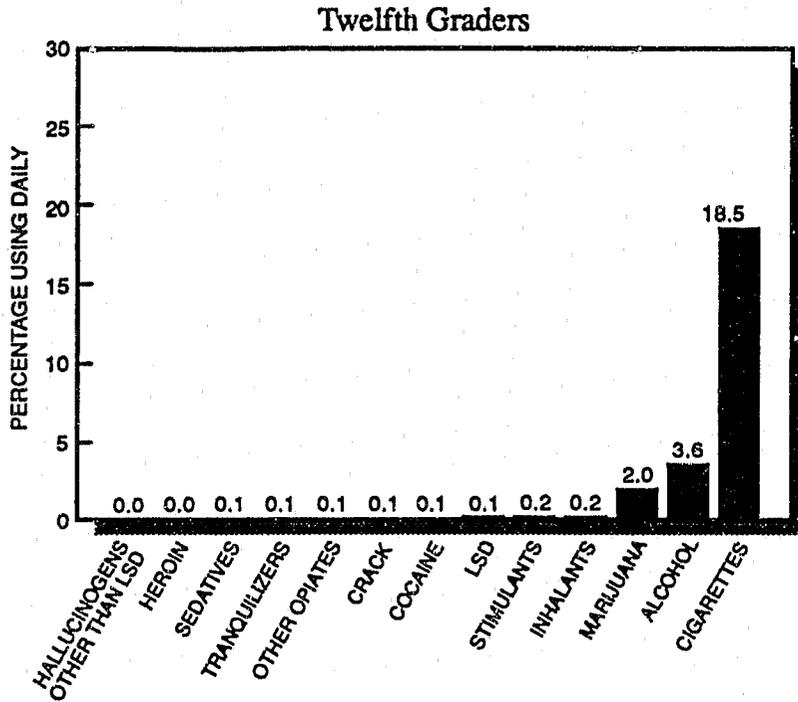


TABLE 6

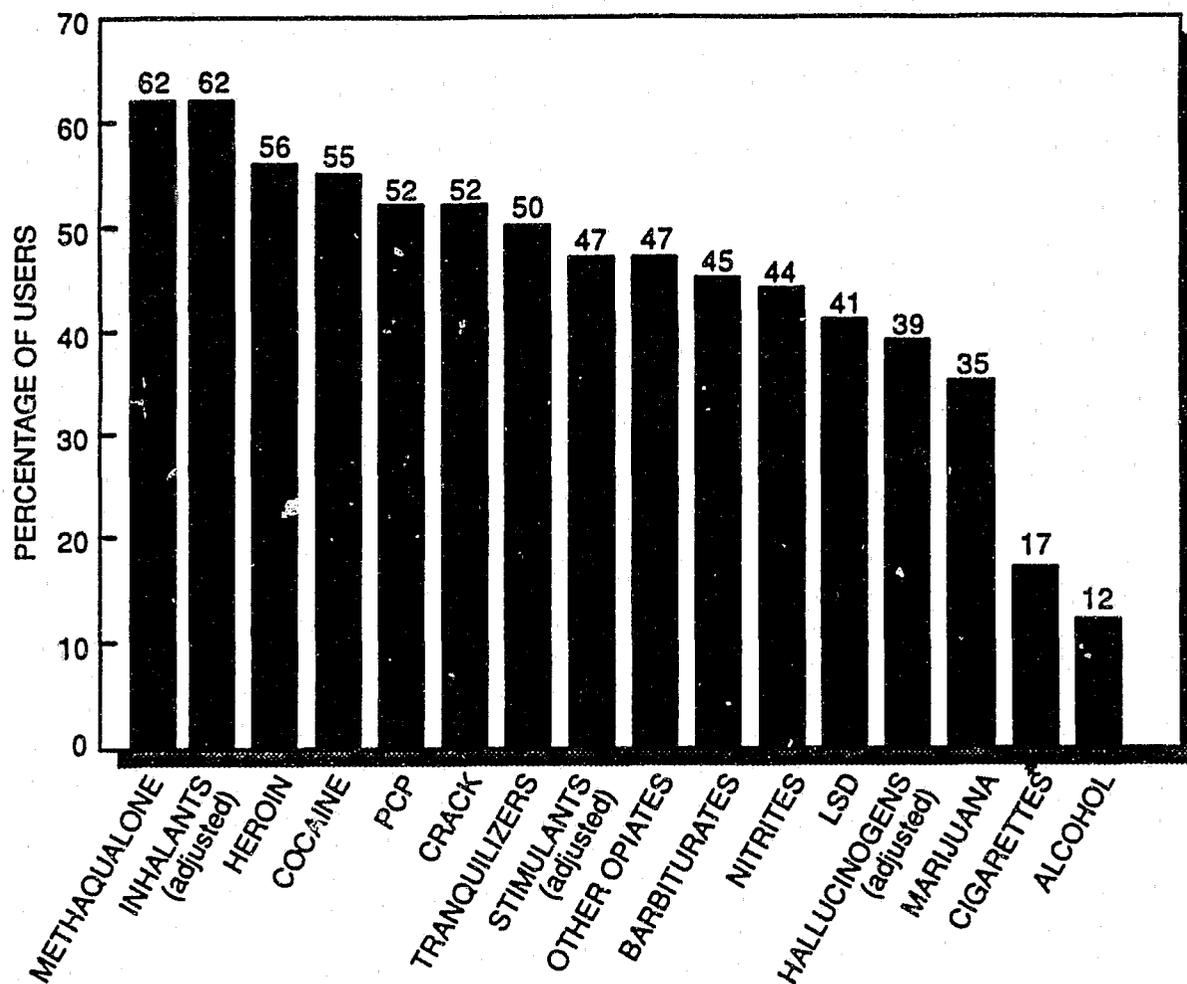
Frequency of Cigarette Use and Occasions of Heavy Drinking
Eighth, Tenth and Twelfth Graders, 1991

(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 noncontinuation 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	Amyl/Butyl Nitrites	Hallucinogens ^a	LSD	PCP	Cocaine	"Crack" ^a	Other Cocaine	Heroin	Other Opiates	Stimulants ^b (adjusted)	Sedatives	Barbiturates	Methaqualone	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	11.5	10.6	3.5	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	6.4	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	7.9	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	6.6	16.7	6.4	6.3	0.7	7.6	88.8	63.6	3.1	1.1	
3.5-4.0	36.8	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	6.6	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 Methaqualone were in one form.

^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.

^cParental 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	13.8	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	5.9	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	15.8	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

^aParental 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.

^b12th grade only: Data based on five questionnaire forms. N is five-sixths of N indicated.

^cUnadjusted 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	5.5	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	0.5	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	9.5	
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	

^aParental 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.

^b12th grade only: Data based on four questionnaire forms. N is four-sixths of N indicated.

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

^dBased 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	15.7	21.2	25.4	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
2.5-3.0	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	75.2	78.9	13.9	20.4	28.4	1.0	1.0	1.6
4.5-5.0	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

^aParental 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.

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

^cAnnual prevalence is not available. 30-day prevalence is presented here.

^d12th grade only: Data based on two questionnaire forms. N is two-sixths 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

Grade:	Percent who used daily in last thirty days																	
	N (Approx.)			Marijuana			Alcohol			5+ ^b drinks ^b			One or more			Half-pack or more		
	8th	10th	12th	8th	10th	12th	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	8500	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	15.9	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

^aParental 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.

^bThis 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	1.0	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	1.7	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	0.6	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	1.0	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	0.3	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

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

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

^cBased 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			5+ 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	60.8	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.

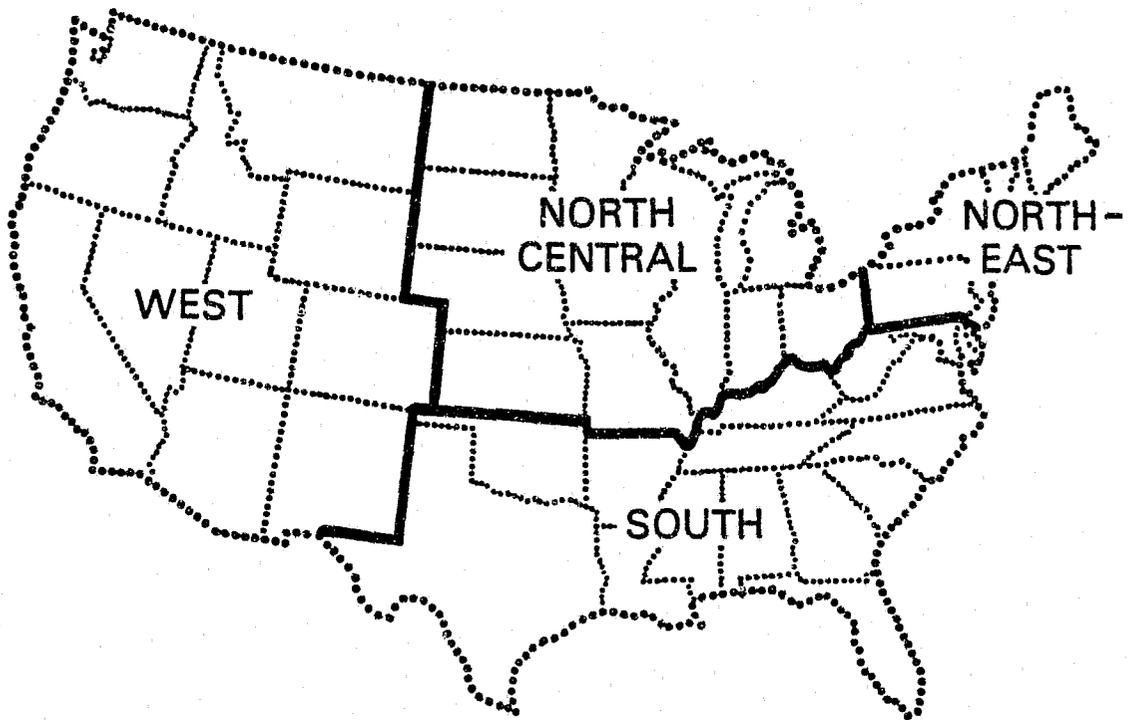
- In general, the differences in the use of most illicit drugs across these different sizes of community are small at the present time, reflecting how widely illicit drug use has diffused through the population. (See Tables 8 and 9.)
- In twelfth grade, *marijuana* use is somewhat lower in the nonurban 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 usage 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

Approx. N =	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	'90-'91
	of 1975 9400	of 1976 15400	of 1977 17100	of 1978 17800	of 1979 15500	of 1980 15900	of 1981 17500	of 1982 17700	of 1983 16300	of 1984 15900	of 1985 16000	of 1986 15200	of 1987 16300	of 1988 15300	of 1989 16700	of 1990 15200	of 1991 15000	change	
Any Illicit Drug Use ^a Adjusted Version ^b	55.2	58.3	61.6	64.1	65.1	65.4	65.6	65.8	64.1	—	—	—	—	—	—	—	—	—	-3.8sss
Any Illicit Drug Other Than Marijuana ^c Adjusted Version ^b	36.2	35.4	35.8	36.5	37.4	38.7	42.8	45.0	44.4	—	—	—	—	—	—	—	—	—	-2.5ss
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	-4.0sss	
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	18.0	-0.4
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	18.0	-0.5
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	1.6	-0.5
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	9.6	+0.2
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	10.0	+0.3
LSD ^{f,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	8.8	+0.1
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	3.9	2.8	2.9	2.9	+0.1
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	7.8	-1.6ss
"Crack" ⁱ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4	4.8	4.7	3.5	3.1	-0.4
Other cocaine ^j	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.0	12.1	8.5	8.6	7.0	7.0	-1.6ss
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	0.9	-0.4s
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	6.6	-1.7sss
Stimulants ^k	22.3	22.6	23.0	22.9	24.2	26.4	32.2	35.6	35.4	NA	NA	NA							
Stimulants Adjusted ^{b,k}	NA	NA	NA	NA	NA	NA	NA	27.9	26.9	27.9	26.2	23.4	21.6	19.8	19.1	17.5	15.4	15.4	-2.1ss
Crystal Methamphetamine ^l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.7	3.3	3.3	+0.6
Sedatives ^{k,m}	18.2	17.7	17.4	16.0	14.6	14.9	16.0	15.2	14.4	13.3	11.8	10.4	8.7	7.8	7.4	7.5	6.7	6.7	-0.8
Barbiturates ^k	16.9	16.2	15.6	13.7	11.8	11.0	11.3	16.3	9.9	9.9	9.2	8.4	7.4	6.7	6.5	6.8	6.2	6.2	-0.6
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	1.3	-1.0s
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	7.2	0.0
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	88.0	-1.5
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	63.1	-1.3
Steroids ^l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.0	2.9	2.1	2.1	-0.8

NOTES: Level of significance of difference between the two most recent classes: s = .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.

72

TABLE 12
Trends in Annual Prevalence of Various Types of Drugs

Percent who used in last twelve months

	Class	'90-'91 change																
	of 1975	of 1976	of 1977	of 1978	of 1979	of 1980	of 1981	of 1982	of 1983	of 1984	of 1985	of 1986	of 1987	of 1988	of 1989	of 1990	of 1991	
Approx. N =	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	—	—	—	—	—	—	—	—	
Adjusted Version ^b	—	—	—	—	—	—	—	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	
Any Illicit Drug Other Than Marijuana ^c	26.2	25.4	26.0	27.1	28.2	30.4	34.0	33.8	32.5	—	—	—	—	—	—	—	—	
Adjusted Version ^b	—	—	—	—	—	—	—	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	
Marijuana/Hashish	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	
Inhalants ^d	NA	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	
Inhalants Adjusted ^e	NA	NA	NA	NA	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5	6.9	
Amyl/Butyl Nitrites ^{f,g}	NA	NA	NA	NA	6.5	5.7	3.7	3.6	3.6	4.0	4.0	4.7	2.6	1.7	1.7	1.4	0.9	
Hallucinogens	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	
Hallucinogens Adjusted ^h	NA	NA	NA	NA	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0	6.1	
LSD	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	
PCP ^{f,g}	NA	NA	NA	NA	7.0	4.4	3.2	2.2	2.6	2.3	2.9	2.4	1.3	1.2	2.4	1.2	1.4	
Cocaine	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	
"Crack" ⁱ	NA	4.1	3.9	3.1	3.1	1.9	1.5											
Other cocaine ^j	NA	9.8	7.4	5.2	4.6	3.2												
Heroin	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	
Other opiates ^k	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	
Stimulants ^k	16.2	15.8	16.3	17.1	18.3	20.8	26.0	26.1	24.6	NA								
Stimulants Adjusted ^{b,k}	NA	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2							
Crystal Methamphetamine ^l	NA	1.3	1.4	+0.1														
Sedatives ^{k,m}	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	
Barbiturates ^k	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	
Methaqualone ^{k,m}	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	
Tranquilizers ^k	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	
Alcohol	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	
Cigarettes	NA																	
Steroids ^l	NA	1.9	1.7	1.4														

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 1987-1988; 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																	'90-'91 change
	Class of 1975 9400	Class of 1976 15400	Class of 1977 17100	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	
Approx. N =																		
Any Illicit Drug Use ^a Adjusted Version ^b	30.7	34.2	37.6	38.9	38.9	37.2	36.9	33.5	32.4	—	—	—	—	—	—	—	—	
Any Illicit Drug Other Than Marijuana ^c Adjusted Version ^b	—	—	—	—	—	—	—	32.5	30.5	29.2	29.7	27.1	24.7	21.3	19.7	17.2	16.4	
Marijuana/Hashish	15.4	13.9	15.2	15.1	16.8	18.4	21.7	19.2	18.4	—	—	—	—	—	—	—	—	
Inhalants ^d	—	—	—	—	—	—	—	17.0	15.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0	7.1	
Inhalants Adjusted ^e Amyl/Butyl Nitrites ^{f,g}	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	
Hallucinogens	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	
Hallucinogens Adjusted ^h	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	
LSD	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	
PCP ^{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	
Cocaine	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	
"Crack" ⁱ	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	1.9	1.9	1.9	
Other cocaine ^j	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	
Heroin	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	
Other opiates ^k	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3	1.6	1.4	0.7	0.7	
Stimulants ^k	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1	3.2	1.9	1.7	1.2	
Stimulants Adjusted ^{b,k}	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	
Crystal Methamphetamine ^l	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	
Sedatives ^{k,m}	8.5	7.7	8.8	8.7	9.9	12.1	15.8	13.7	12.4	NA								
Barbiturates ^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	
Methaqualone ^{k,m}	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.6	0.6	
Tranquilizers ^k	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	
Alcohol	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	
Cigarettes	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	
Steroids ^l	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	

NOTES: Level of significance of difference between the two most recent classes: s = .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 14
Trends in Thirty-Day Prevalence of Daily Use of Various Types of Drugs

Percent who used daily in last thirty days

	Percent who used daily in last thirty days																		'90-'91 change
	Class of 1975 9400	Class of 1976 15400	Class of 1977 17100	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		
Approx. N =																			
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 ^a	NA	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.2	-0.1	
Inhalants Adjusted ^b	NA	NA	NA	NA	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.5	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 ^e	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	0.1	0.3	0.2	0.3	0.1	0.2	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" ^f	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.1	0.2	0.1	0.1	0.0	
Other cocaine ^g	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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	0.2	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	NA	NA	NA	NA	NA	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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	
Methaqualone ^{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	
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																			
Daily	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	
5+ drinks in a row/ last 2 weeks	36.8	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	
Cigarettes																			
Daily	26.9	28.8	28.2	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	
Half-pack or more per day	17.9	19.2	19.4	18.2	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	
Steroids ^j	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.2	0.1	-0.1	

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 six 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

	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	'90-'91 change	
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000		
Percent reporting use in lifetime																			
Marijuana Only Adjusted Version	19.0	22.9	25.8	27.6	27.7	26.7	22.8	20.8	19.7	—	—	—	—	—	—	—	—	—	-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	—	—	—	—	—	—	—	—	—	-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	—	—	—	—	—	—	—	—	—	-3.8 _{sss}
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	—	—	—	—	—	—	—	—	—	-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	—	—	—	—	—	—	—	—	—	-1.7 _s
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	—	—	—	—	—	—	—	—	—	-3.1 _{sss}
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	—	—	—	—	—	—	—	—	—	+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	—	—	—	—	—	—	—	—	—	-0.9 _s
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	—	—	—	—	—	—	—	—	—	-0.8

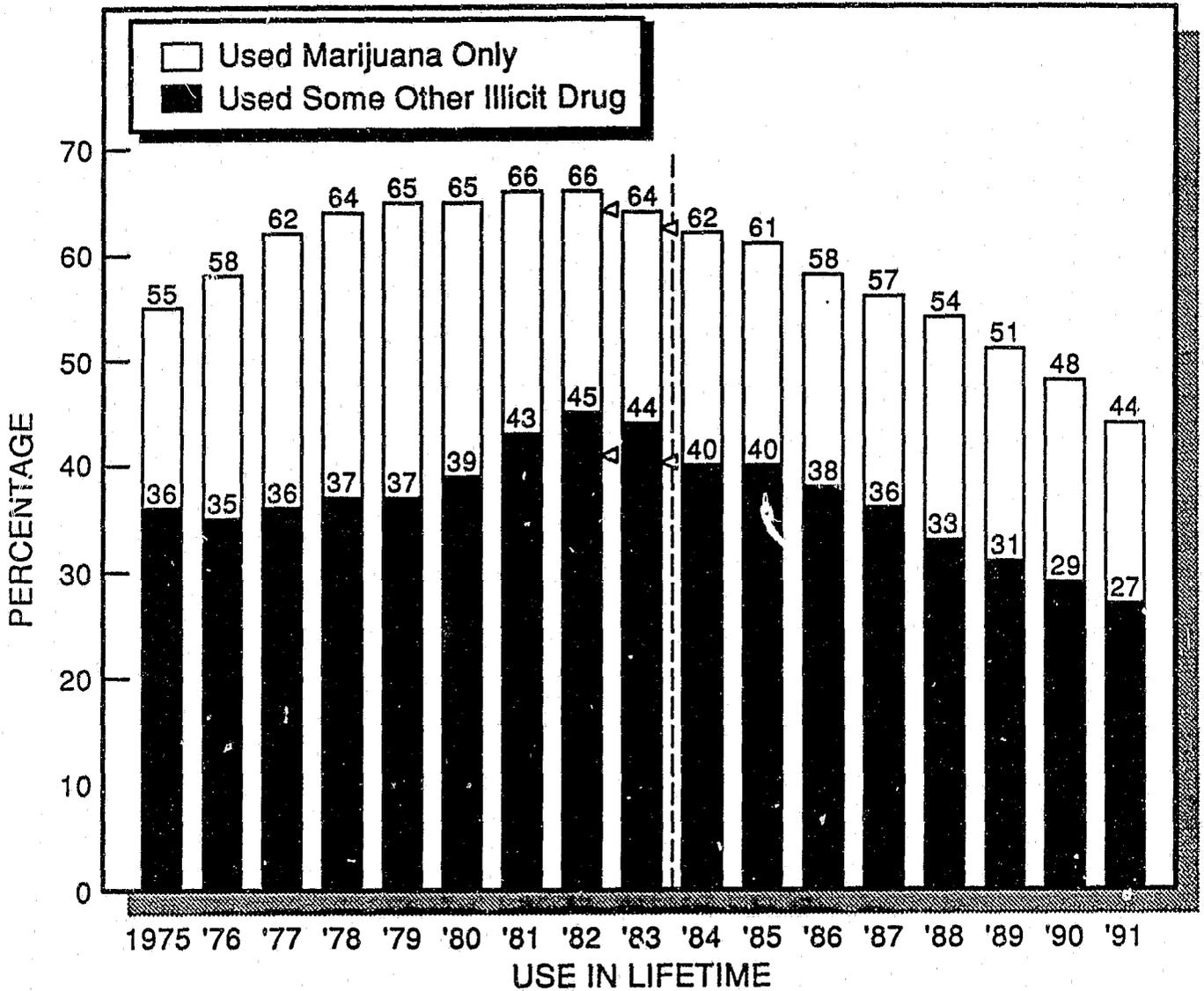
NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

^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.

77

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.

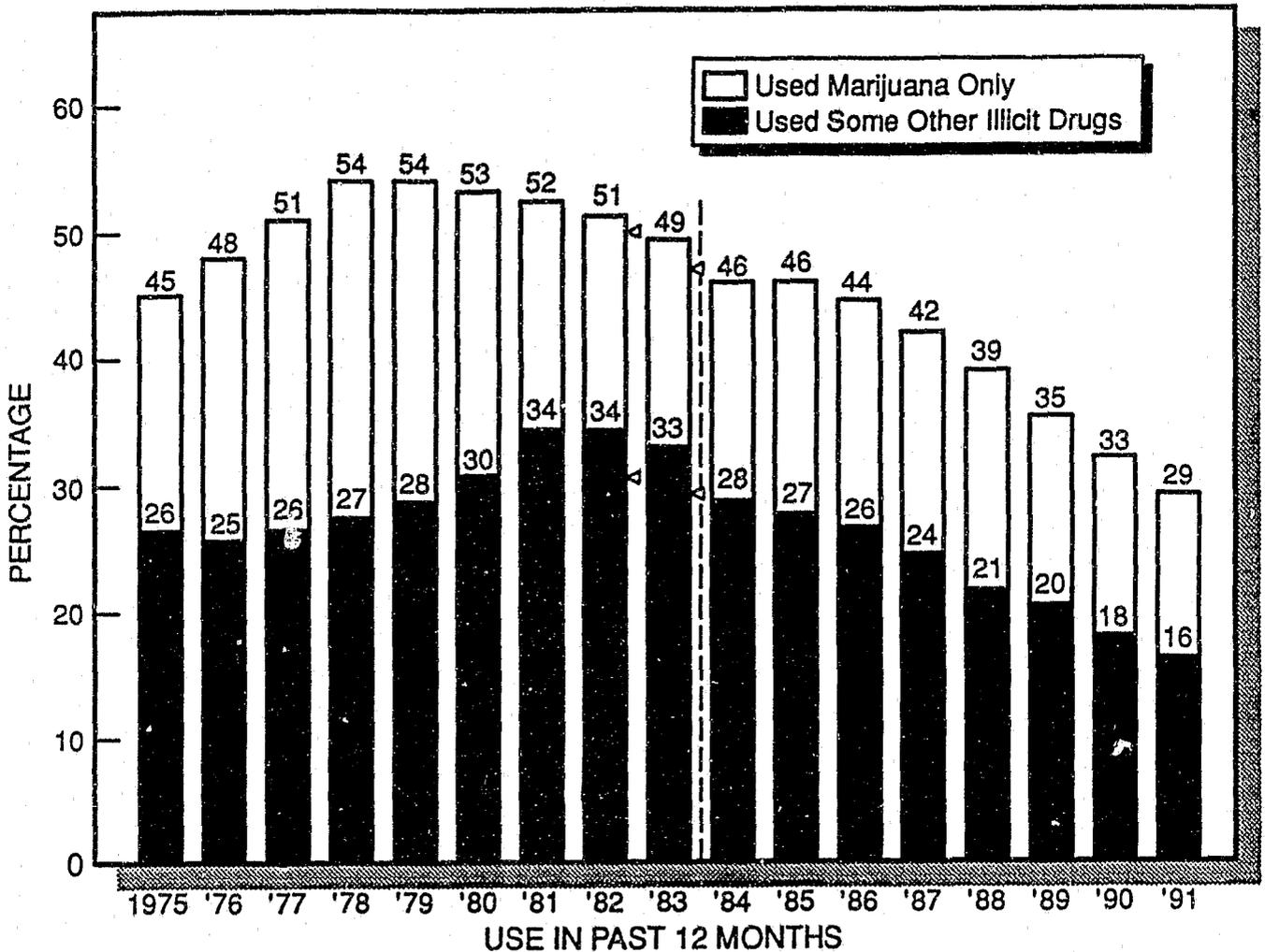
But other indicators that were gathered routinely in the study show some indirect evidence of the rapid spread of this form of the drug prior to 1986. For example, we found that (a) the proportion of seniors reporting that they smoked cocaine (as well as having used in the past year) more than doubled 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.

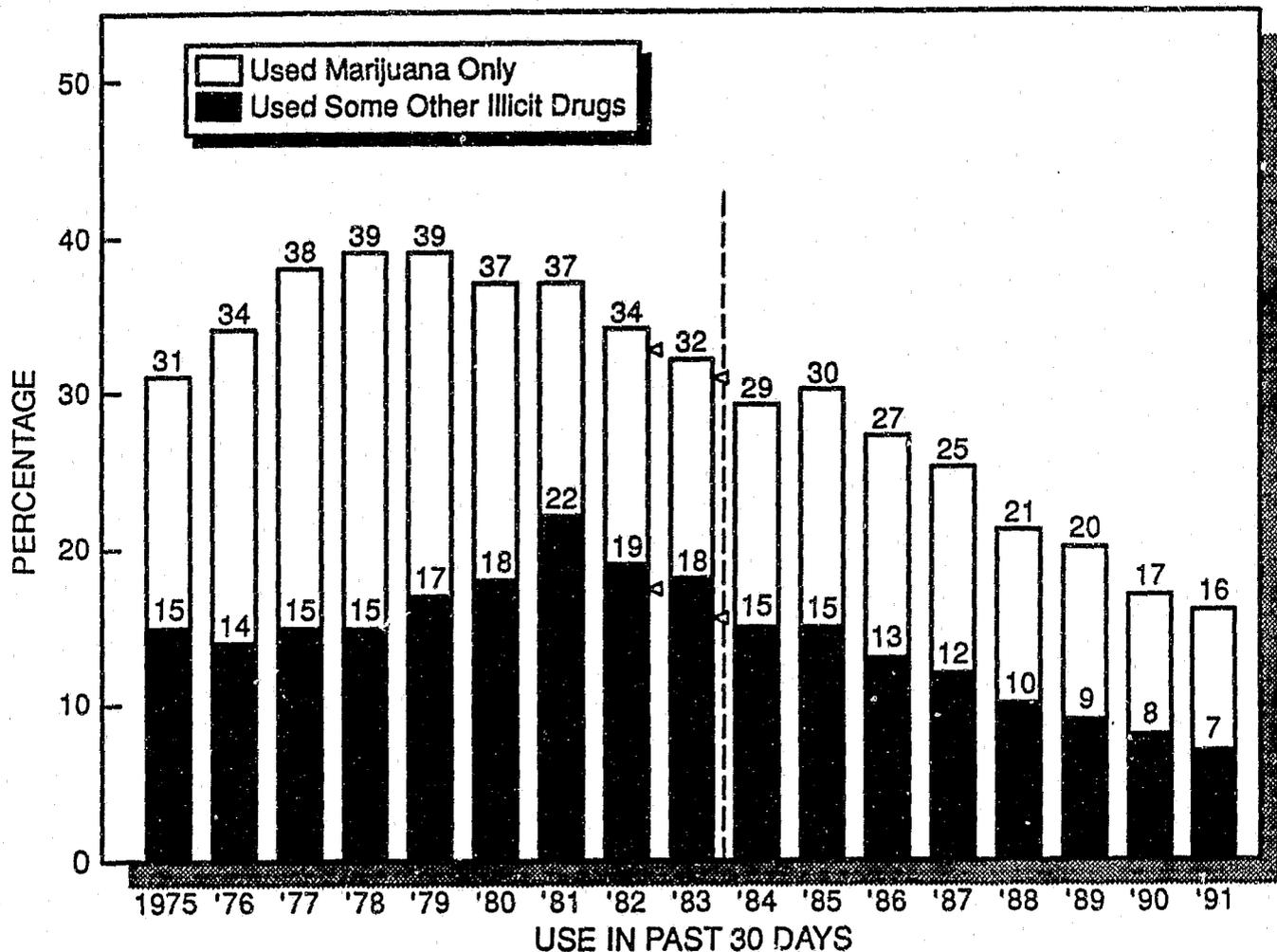
- Like cocaine use, *inhalant* use had been rising steadily in the late 1970's, though more slowly. Annual prevalence (in the unadjusted version) rose from 3.0% in 1976 and reached a peak of 5.4% in 1979. Starting in 1979 an adjustment was introduced for the underreporting of nitrite inhalants. Between 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

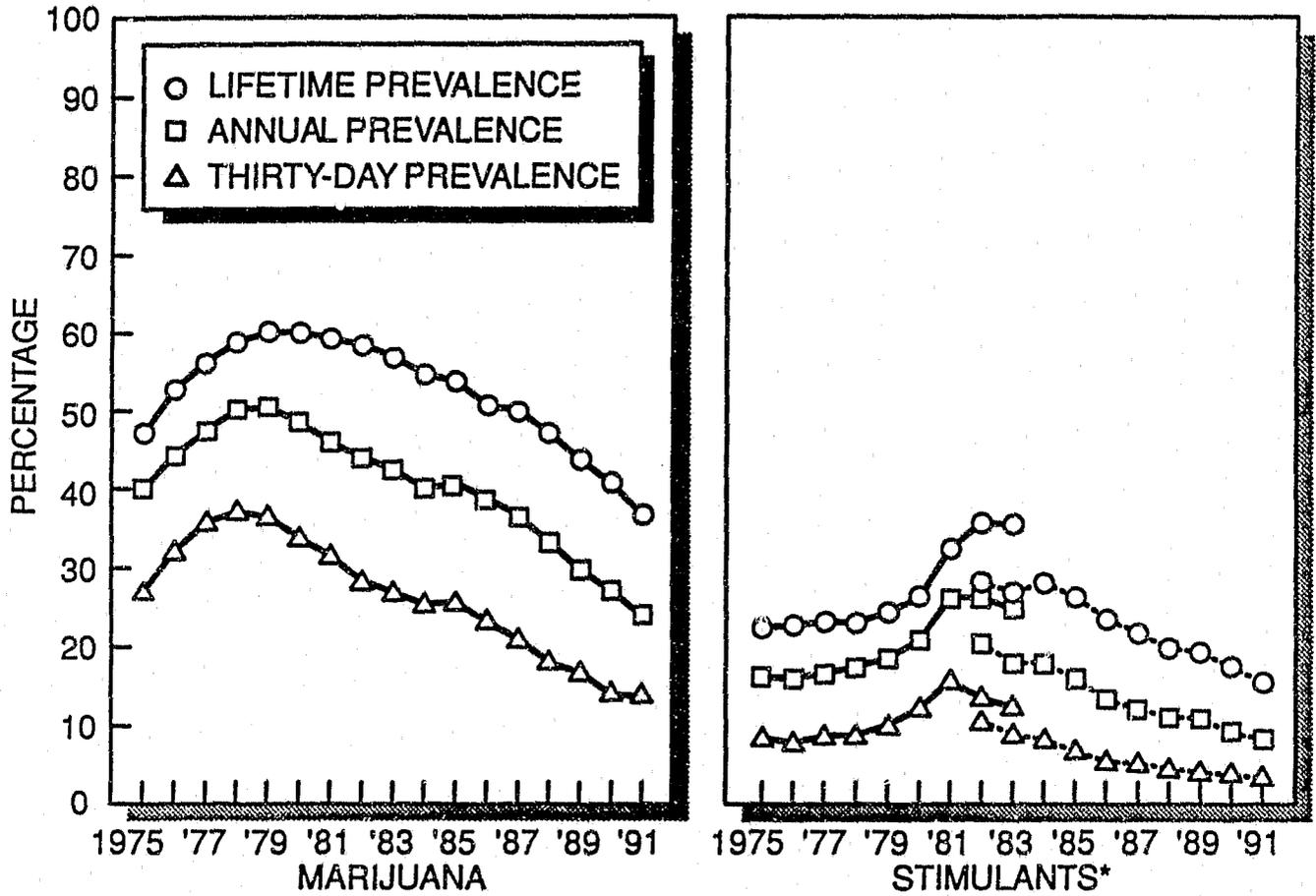
As can be seen in 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted showed a modest amount of overreporting. Both types of statistics, however, suggest that a downturn in the current use of stimulants began to occur in 1982 and has continued 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

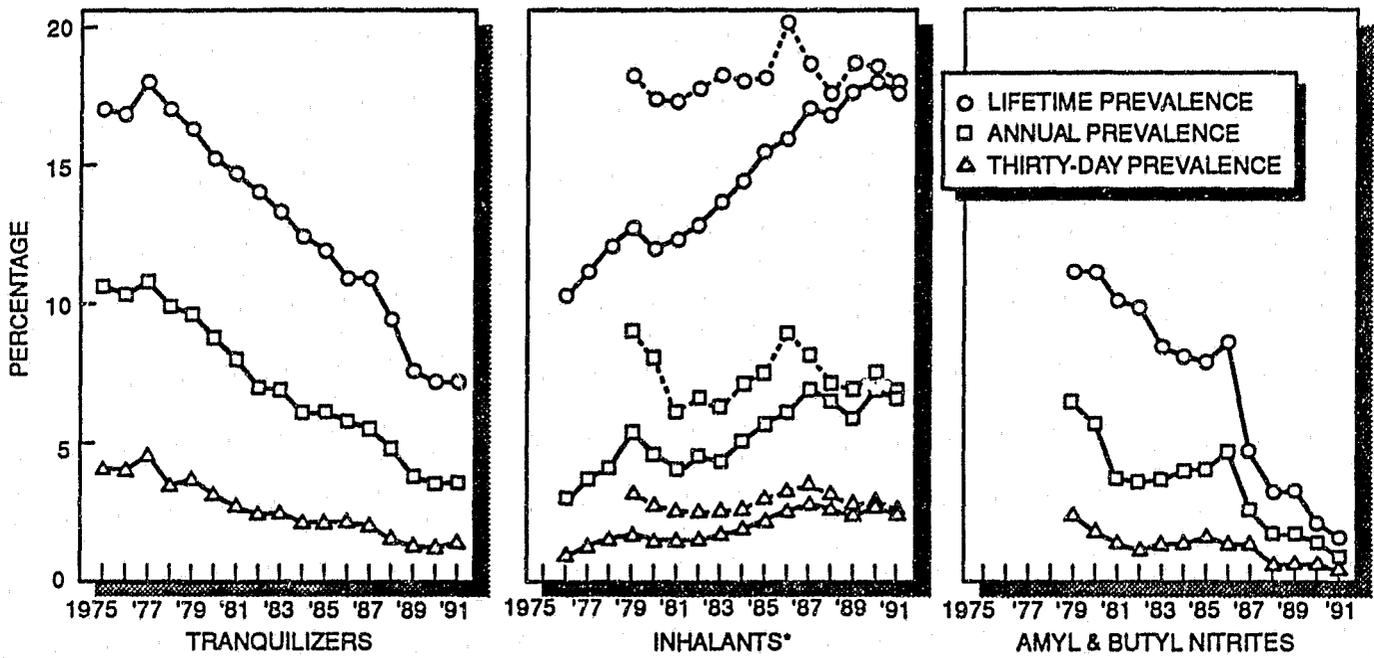
Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors



*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

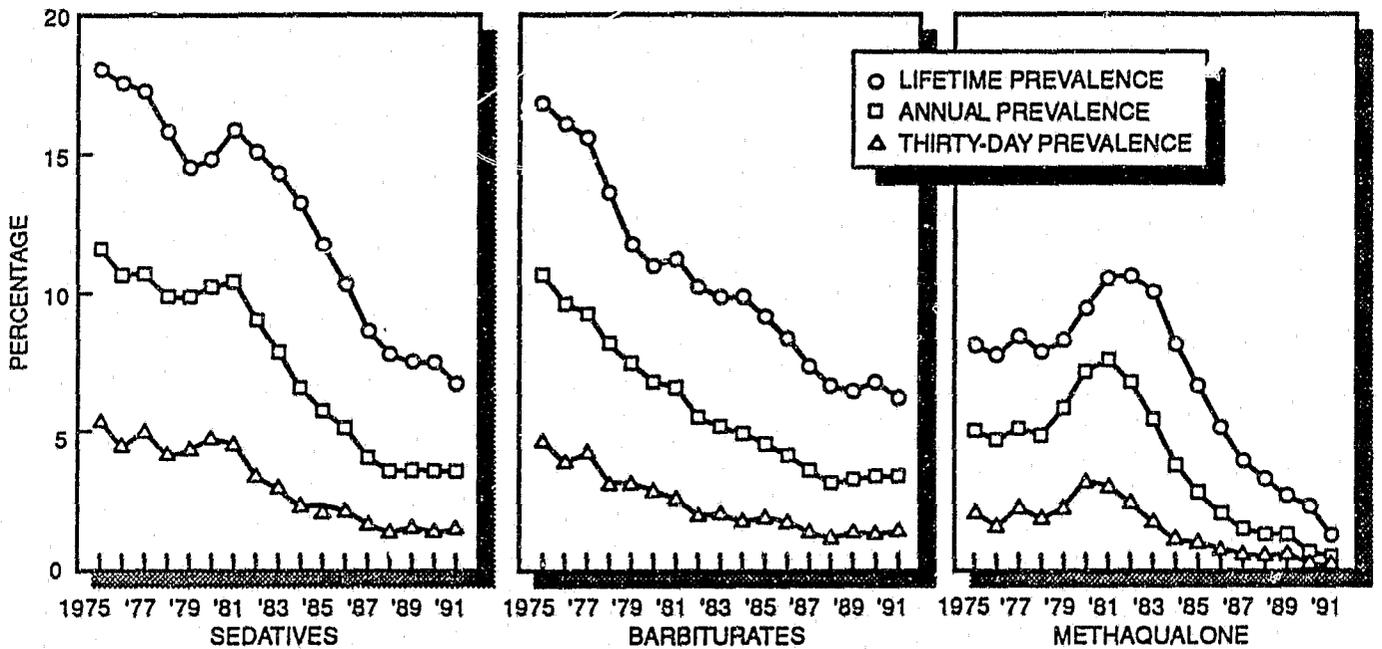
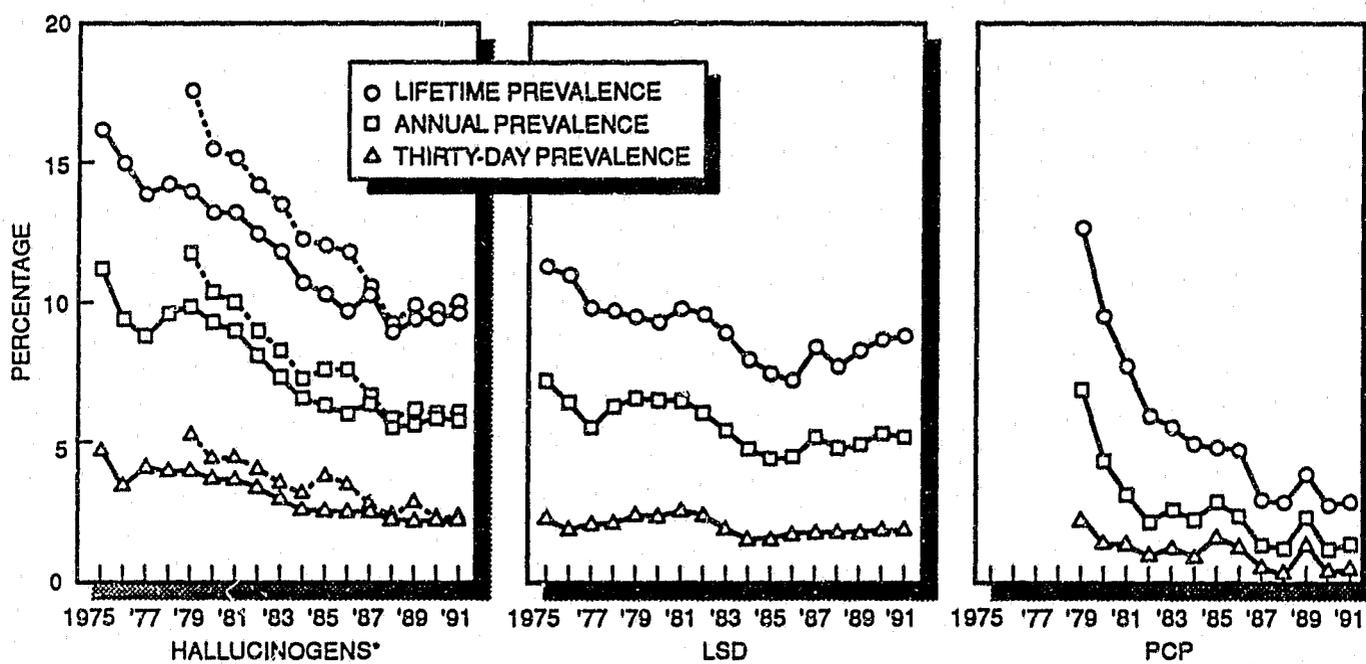


FIGURE 9d

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

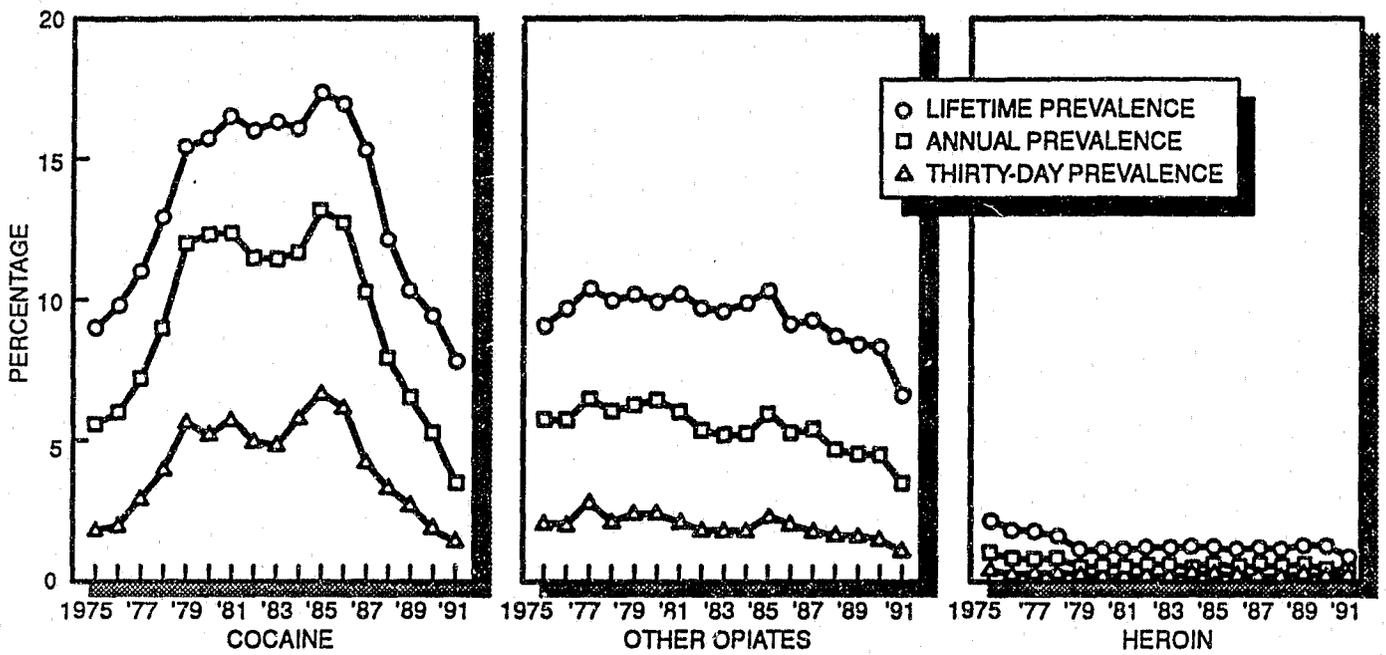


FIGURE 9f

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

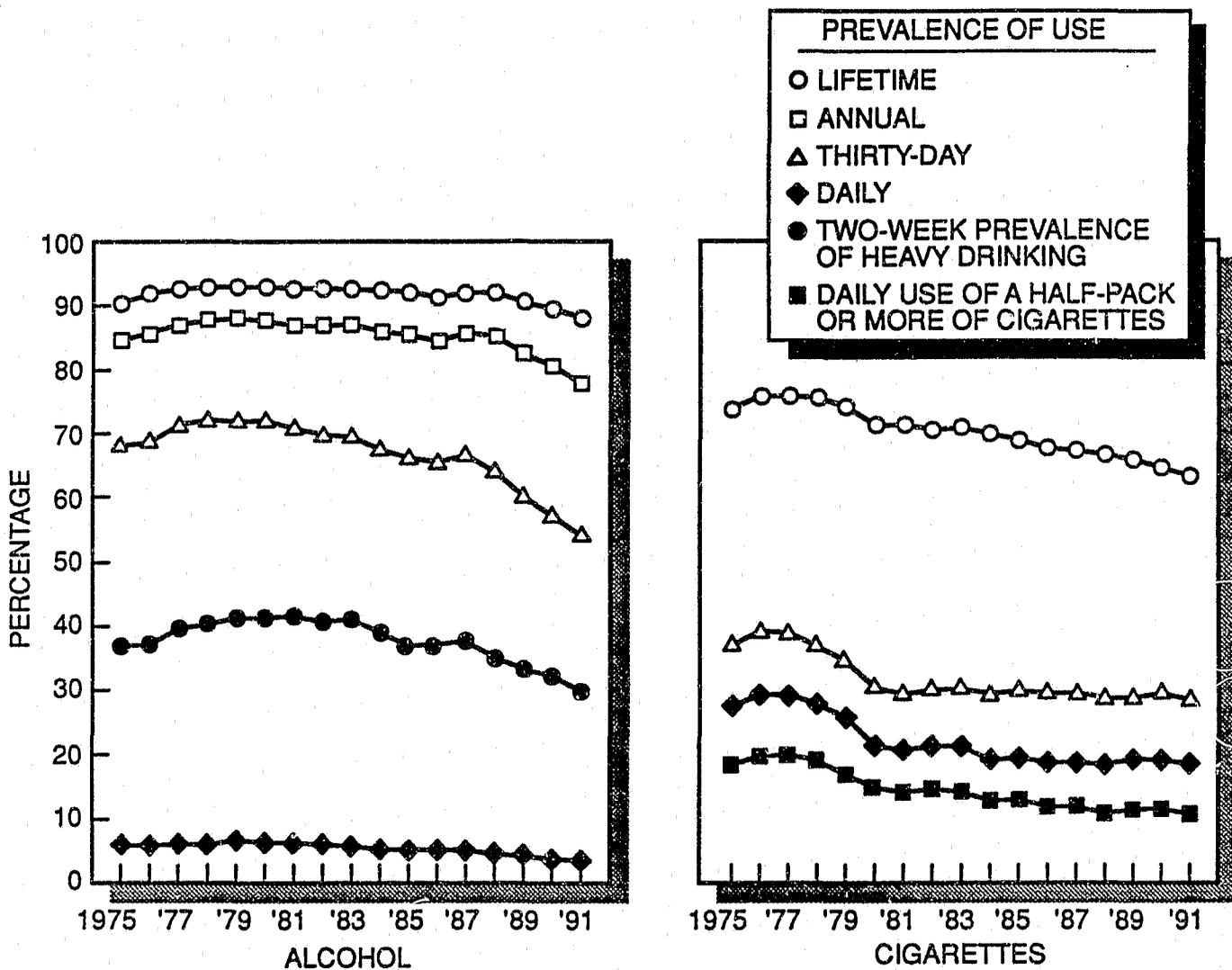
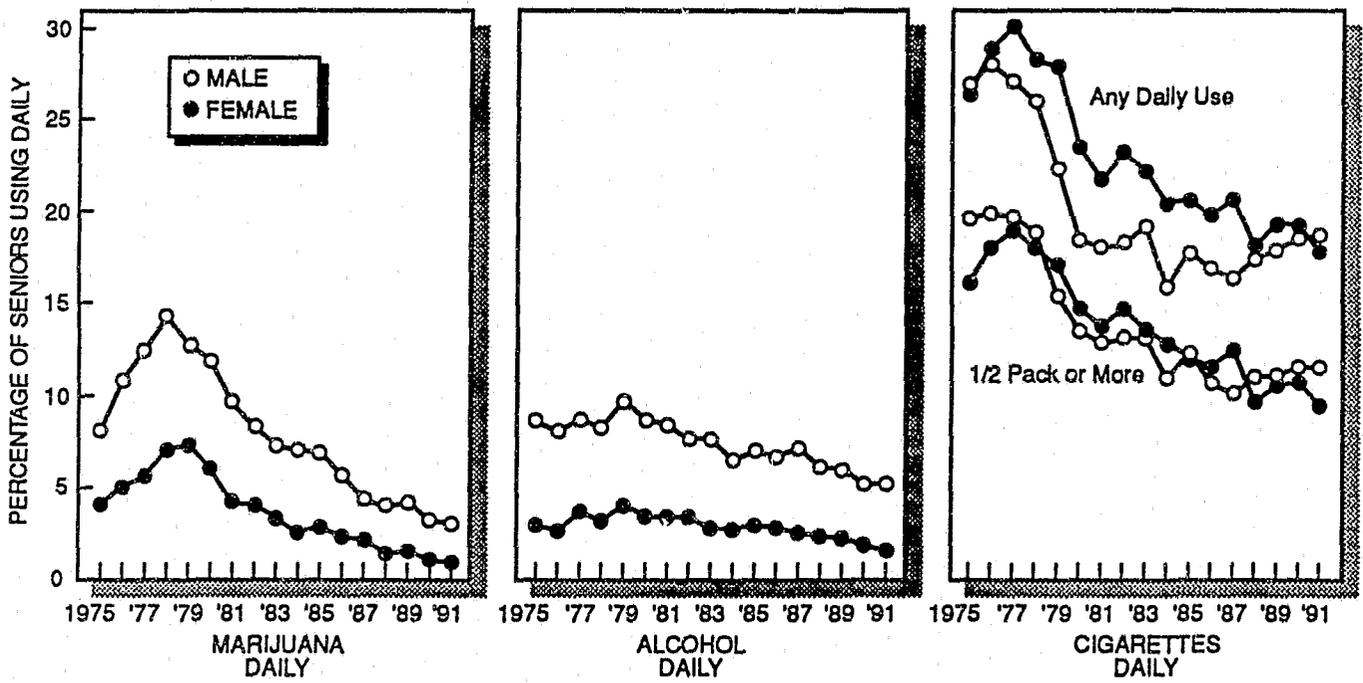


FIGURE 10

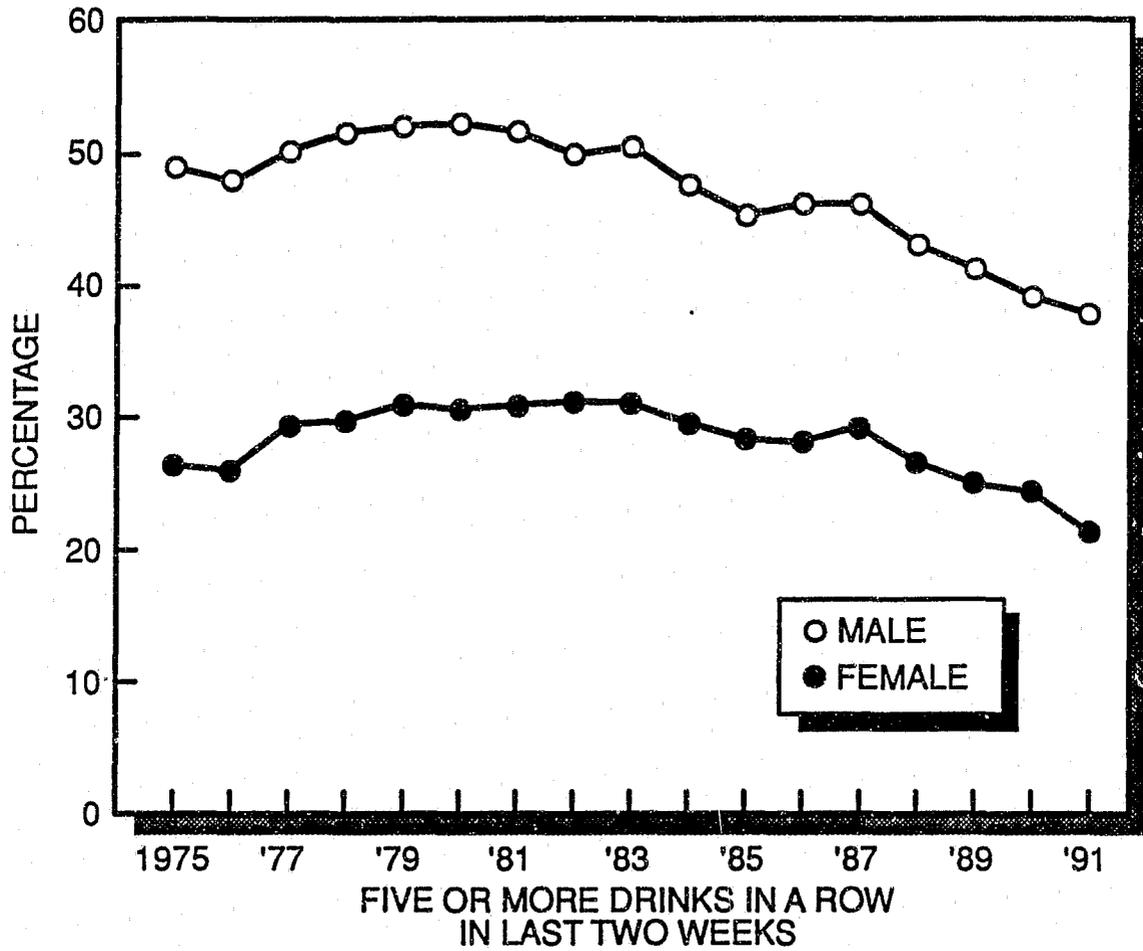
Trends in Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes by Sex



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/Haahish	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 NA	70.9 NA	66.7 NA	65.8 NA	57.5 50.8	61.3 55.7	66.7 65.5	64.8 63.3	68.4 64.4	64.6 58.4	63.0 59.8	61.6 55.7	59.4 56.5	61.1 59.4	66.5 62.9	61.7 59.5	62.5 61.7
Nitrites	NA	NA	NA	NA	41.4	48.6	63.4	63.3	57.1	50.6	49.4	45.3	44.7	46.9	48.5	33.3	43.7
Hallucinogens Adjusted	31.3 NA	37.7 NA	36.7 NA	32.9 NA	29.8 31.2	30.1 32.5	32.3 35.7	35.2 38.0	38.7 36.7	39.3 40.6	38.8 36.9	38.1 36.1	37.9 36.8	38.2 37.0	40.4 37.4	37.2 38.1	39.6 39.0
LSD PCP	36.3 NA	41.8 NA	43.9 NA	35.1 NA	30.5 45.3	30.1 54.2	33.7 59.0	36.5 63.3	39.3 53.6	41.3 54.0	41.3 40.8	37.5 50.0	38.1 56.7	37.7 58.6	41.0 38.5	37.9 57.1	40.9 51.7
Cocaine "Crack"	37.8 NA	38.1 NA	33.3 NA	30.2 NA	22.1 NA	21.7 NA	24.8 NA	28.1 NA	29.6 NA	28.0 NA	24.3 NA	24.9 NA	32.2 27.8	34.7 35.4	36.9 34.0	43.6 45.7	55.1 51.6
Heroin	54.5	55.6	55.6	50.0	54.5	54.5	54.5	50.0	50.0	61.5	50.0	54.5	58.3	54.5	53.8	61.5	55.8
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 NA	30.1 NA	29.1 NA	25.3 NA	24.4 NA	21.2 NA	19.3 NA	26.7 27.2	30.5 33.5	NA 36.6	NA 39.7	NA 42.7	NA 43.5	NA 44.9	NA 43.5	NA 48.0	NA 46.8
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 Methaqualone	36.7 37.0	40.7 39.7	40.4 38.8	40.9 38.0	36.4 28.9	38.2 24.2	41.6 28.3	46.6 36.4	47.5 46.5	50.5 54.2	50.0 58.2	50.0 59.6	51.4 62.5	52.2 60.6	49.2 51.9	50.0 69.6	45.2 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	10.5	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 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/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	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
PCP*																	
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	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	15.6	19.3	15.2	15.9	16.1
Stimulants	8.0	9.8	7.6	7.4	6.1	4.1	4.4	6.4	7.5	NA							
Adjusted	NA	8.4	10.7	12.7	17.5	17.6	17.5	16.0	17.4	18.1	17.2						
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 *tranquillizer* 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,

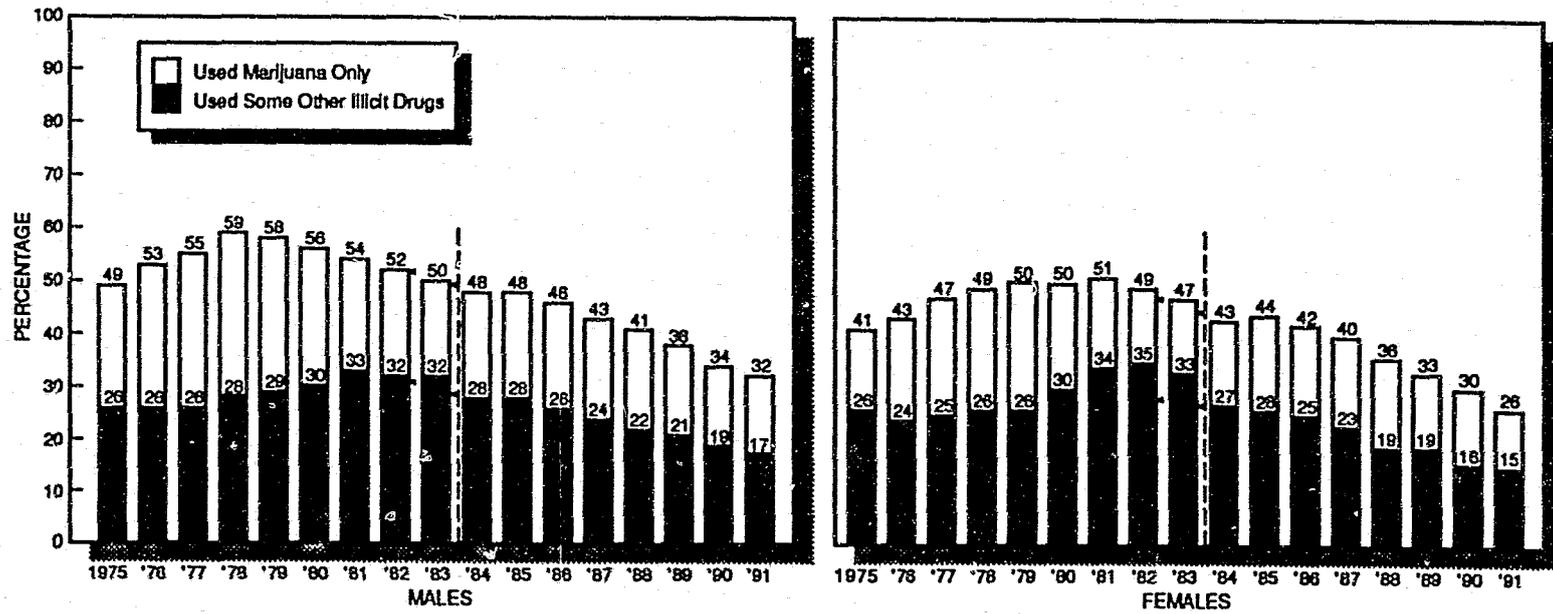
¹⁶It is worth noting that the same number of drinks produces substantially greater impact on the blood alcohol level of the average female than the average male, because of sex differences in the metabolism of alcohol and body weight. Thus, sex differences in frequency of actually getting drunk may not 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

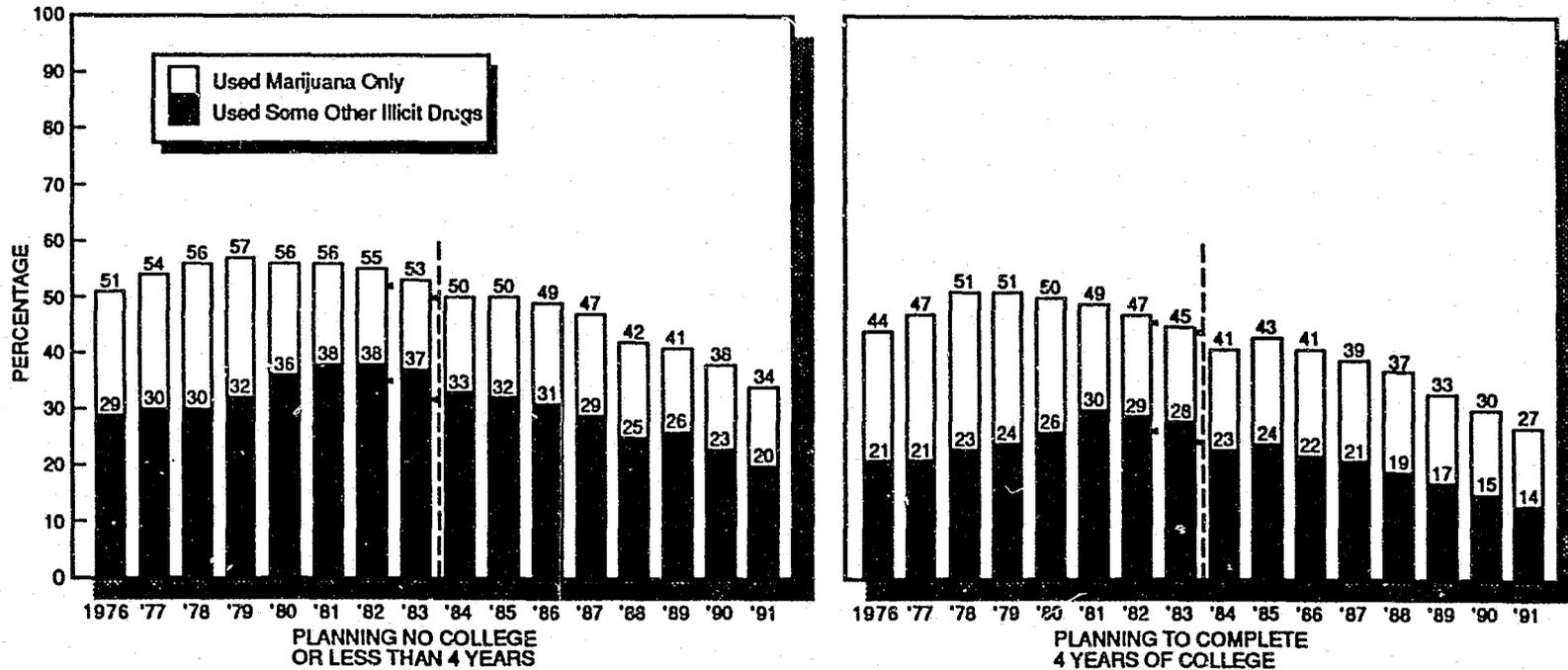
100



NOTE: See Figure 8 for relevant footnotes.

FIGURE 13

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



101

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.

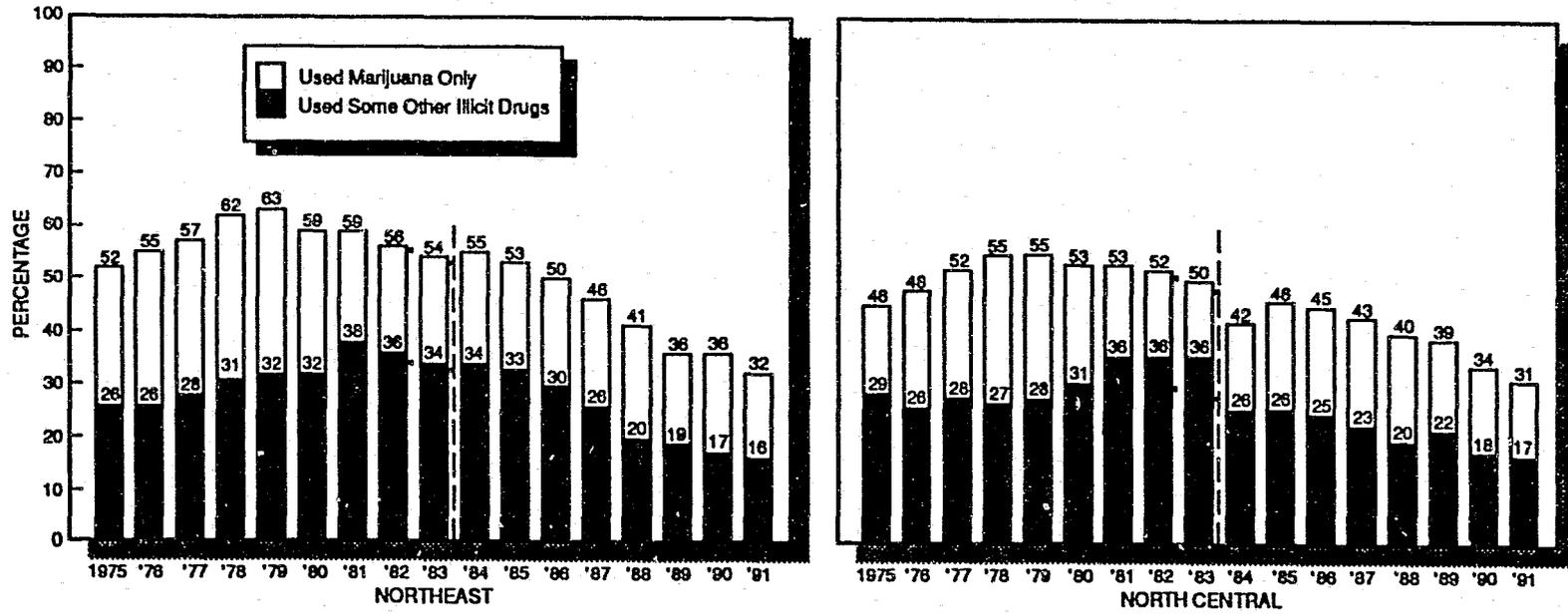
- In fact, as the overall prevalence of a number of drugs has fallen there has been some convergence of usage rates between the college bound and noncollege-bound, due to a greater drop among the latter group. This has been true for *tranquilizers, sedatives, methaqualone, nitrite inhalants, hallucinogens,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

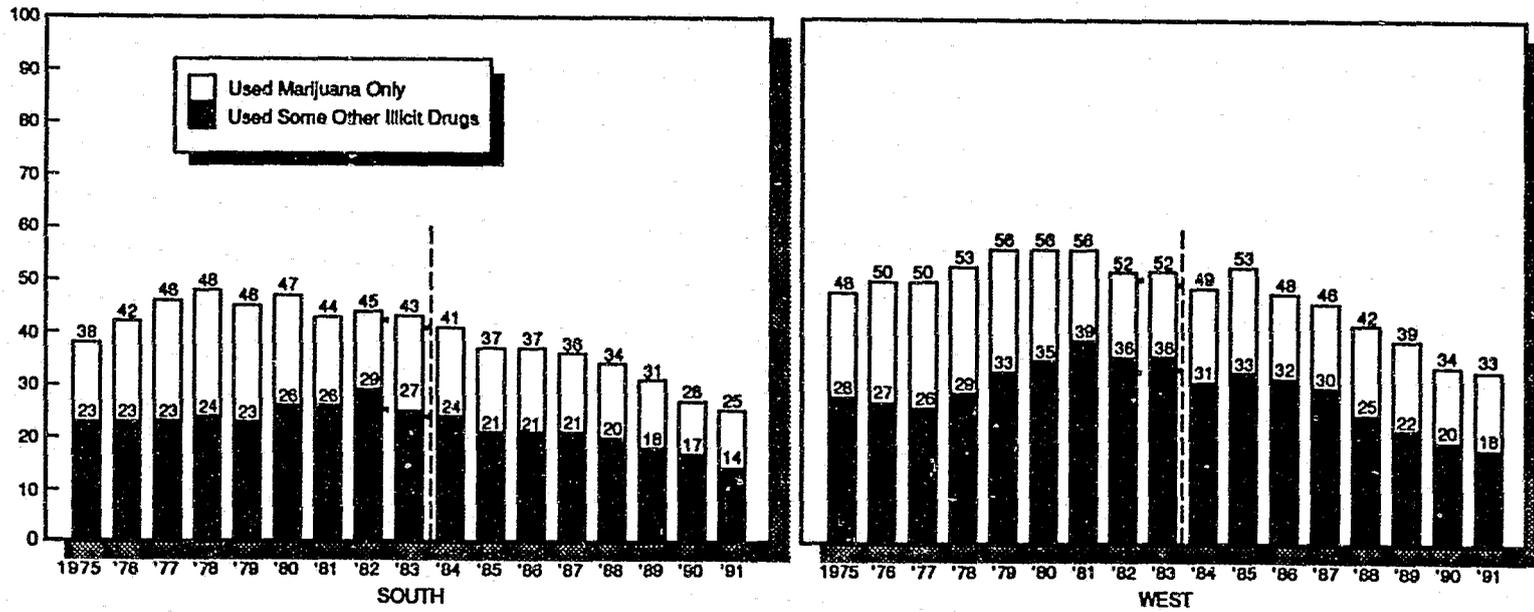
103



NOTE: See Figure 8 for relevant footnotes.

FIGURE 14 (cont.)

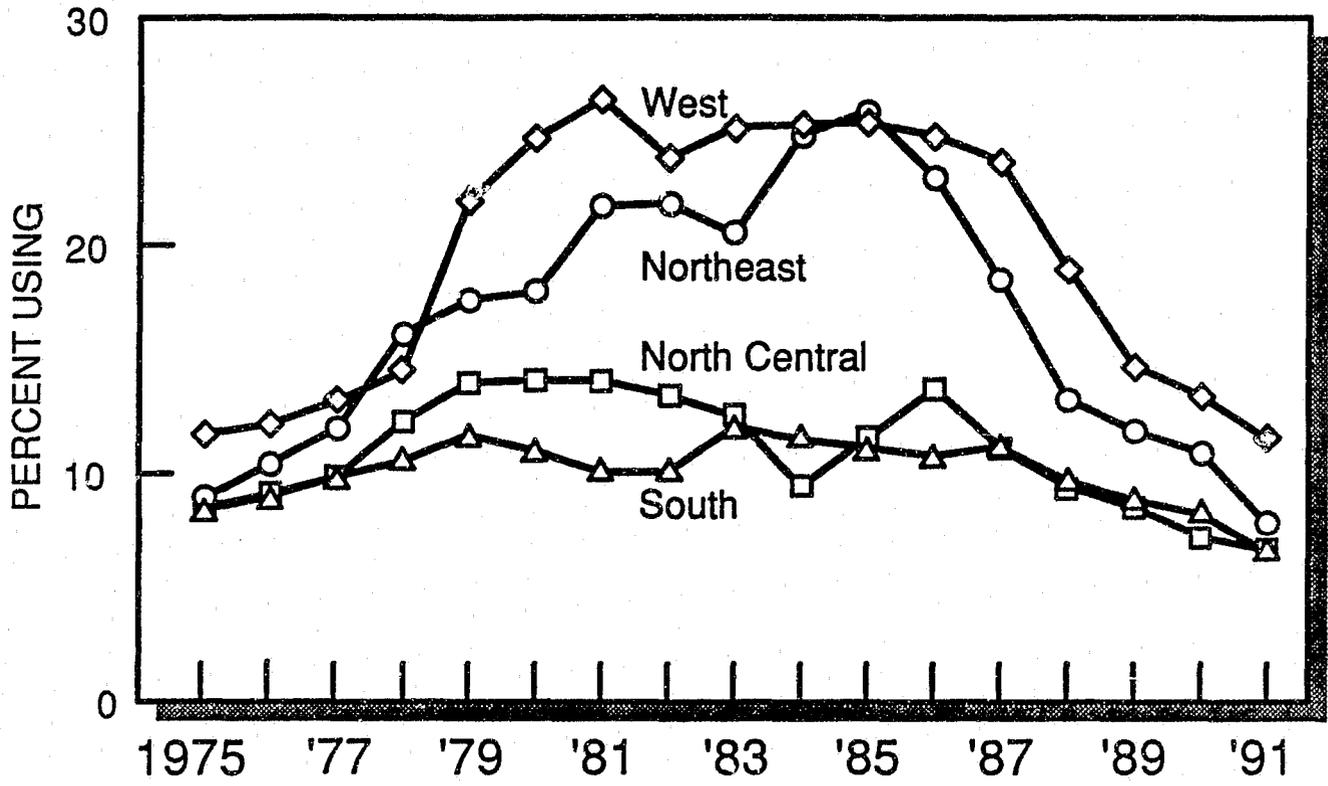
Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index by Region of the Country



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.

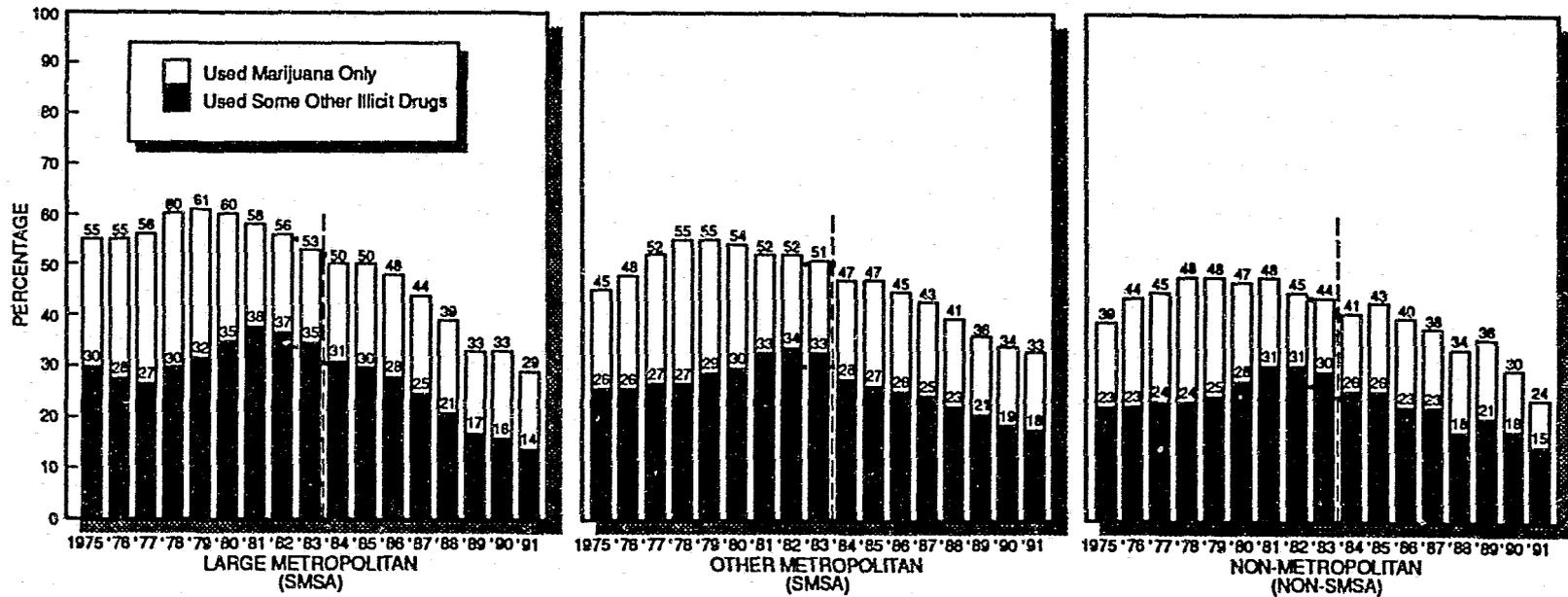
Since 1979, there had been a fairly steady decrease in all three community size strata—until 1985, when the metropolitan areas remained level and the nonmetropolitan areas showed a slight rise. Since then the declines have continued and, in fact, been sharpest in the large cities, which in 1991 actually 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-80'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

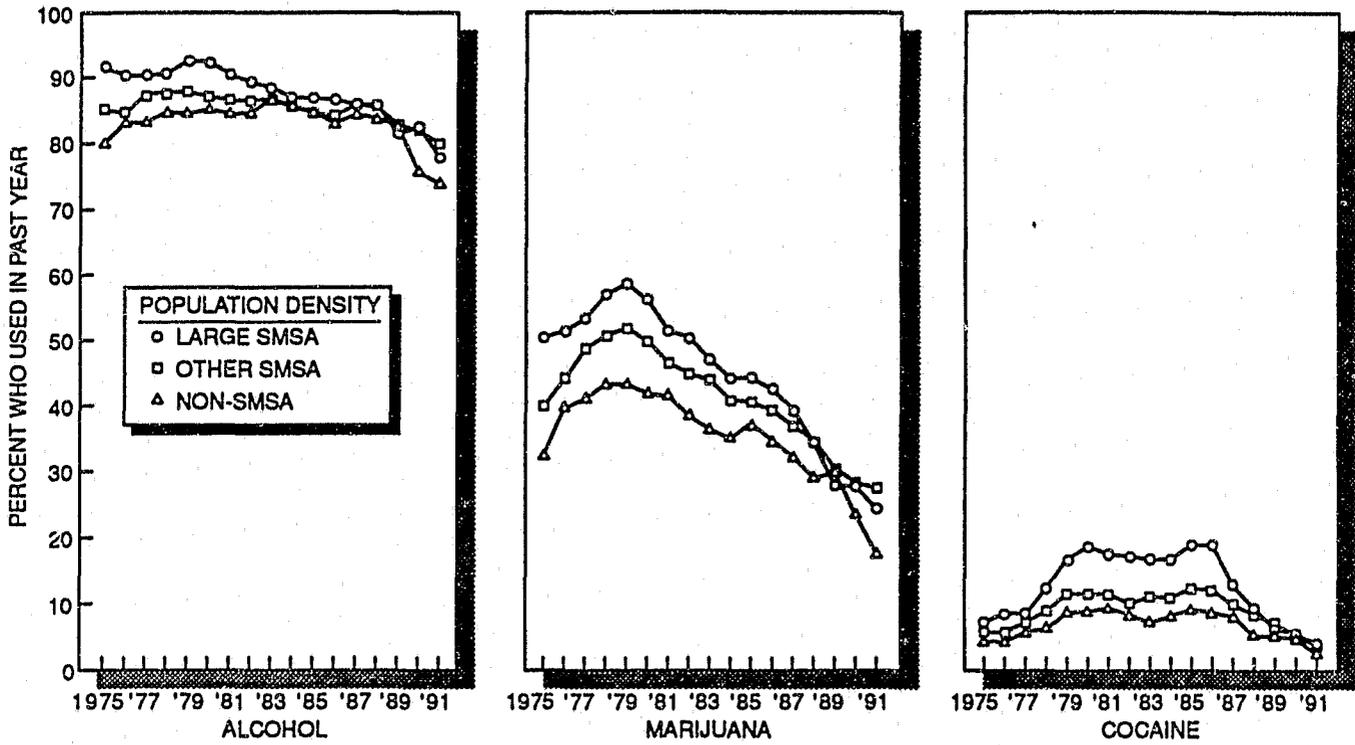
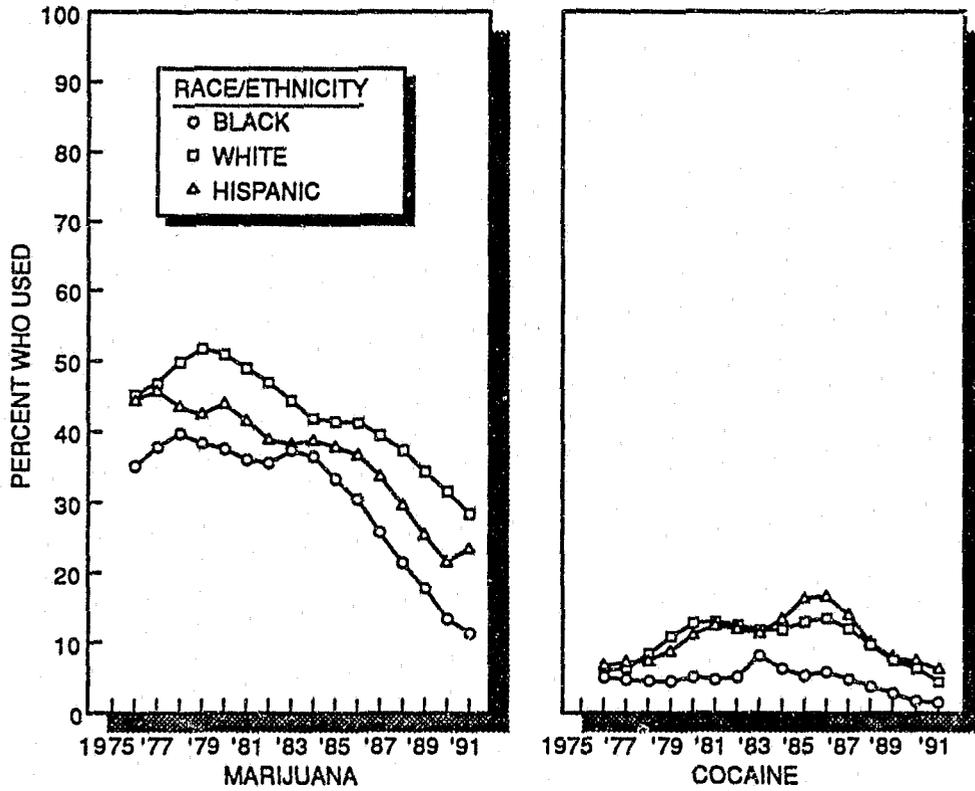


FIGURE 17a

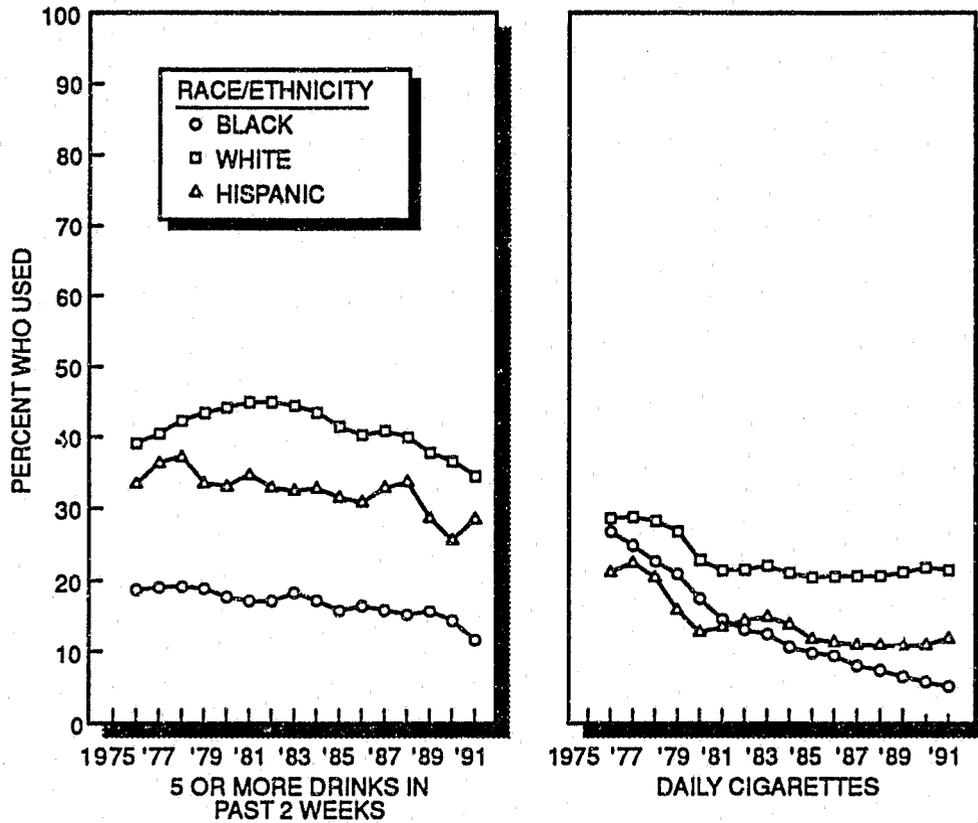
Trends in Seniors' Annual Prevalence of
Marijuana and Cocaine Use
by Race/Ethnicity
(Two-year moving average*)



*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	15.7	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	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)

Grade level of respondents:	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.

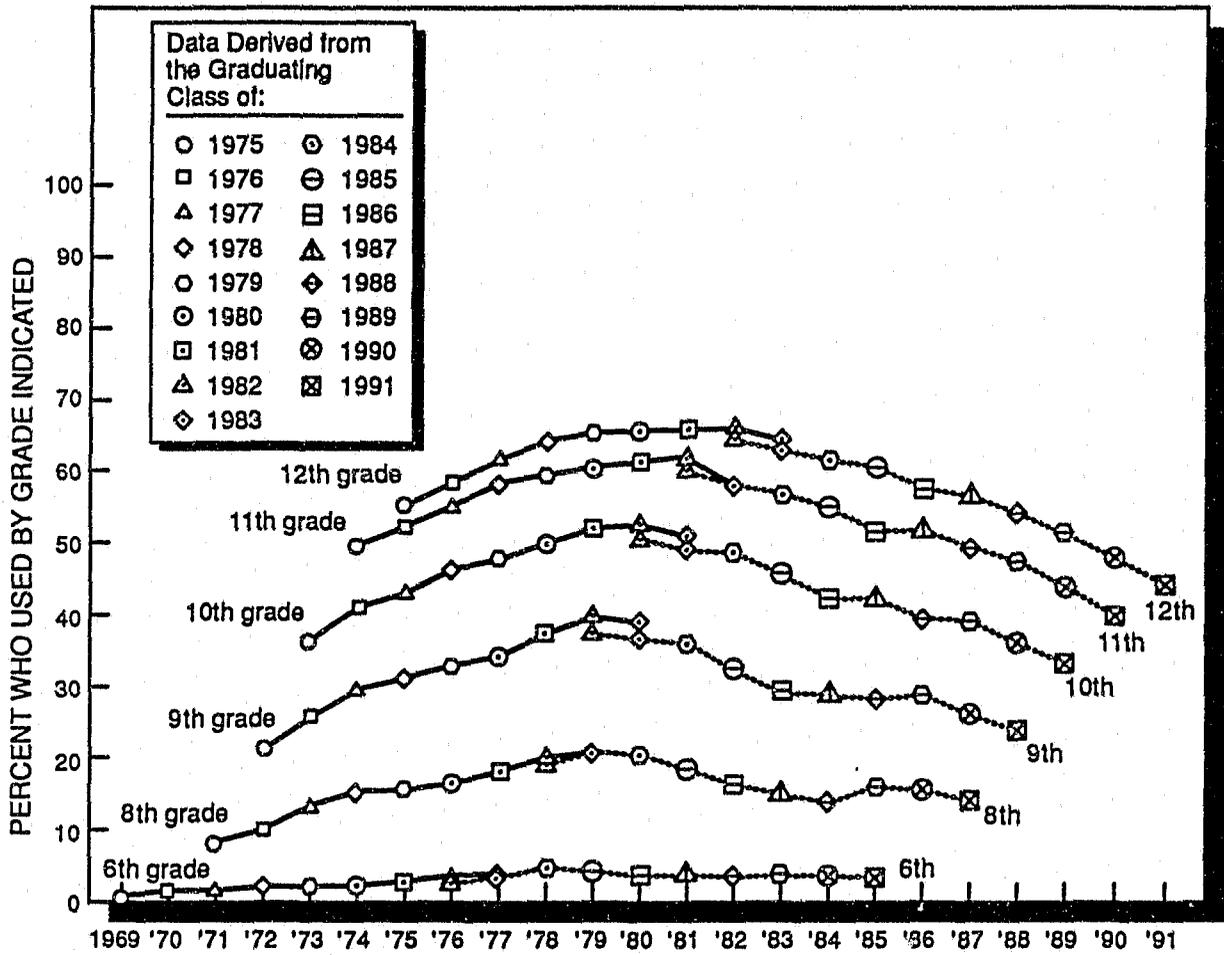
- Lifetime prevalence of *tranquilizer* use (Figure 18n) also began to decline at all grade levels in the mid-70's. It is noteworthy that, like sedatives, the overall decline in tranquilizer use has been considerably greater in the upper grade levels than the lower ones. Overall, it would appear that 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

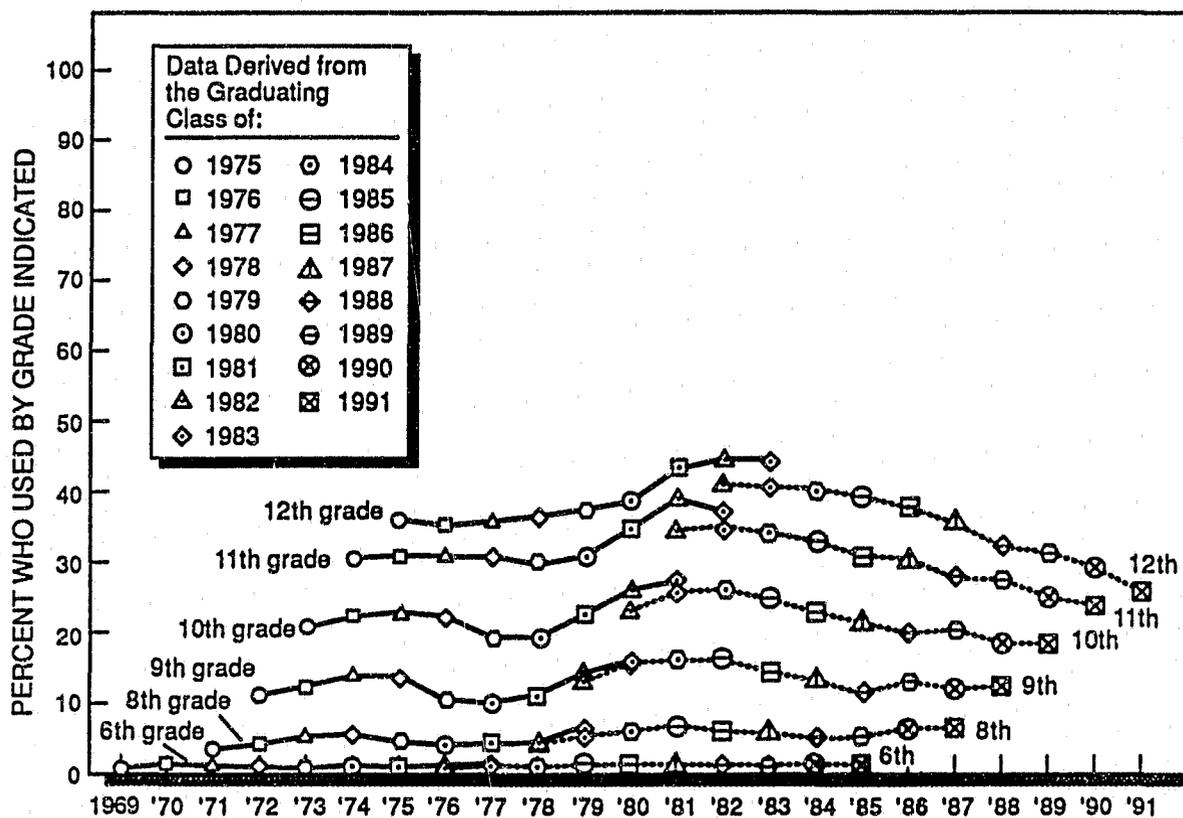
**Use of Any Illicit Drug: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors**



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**

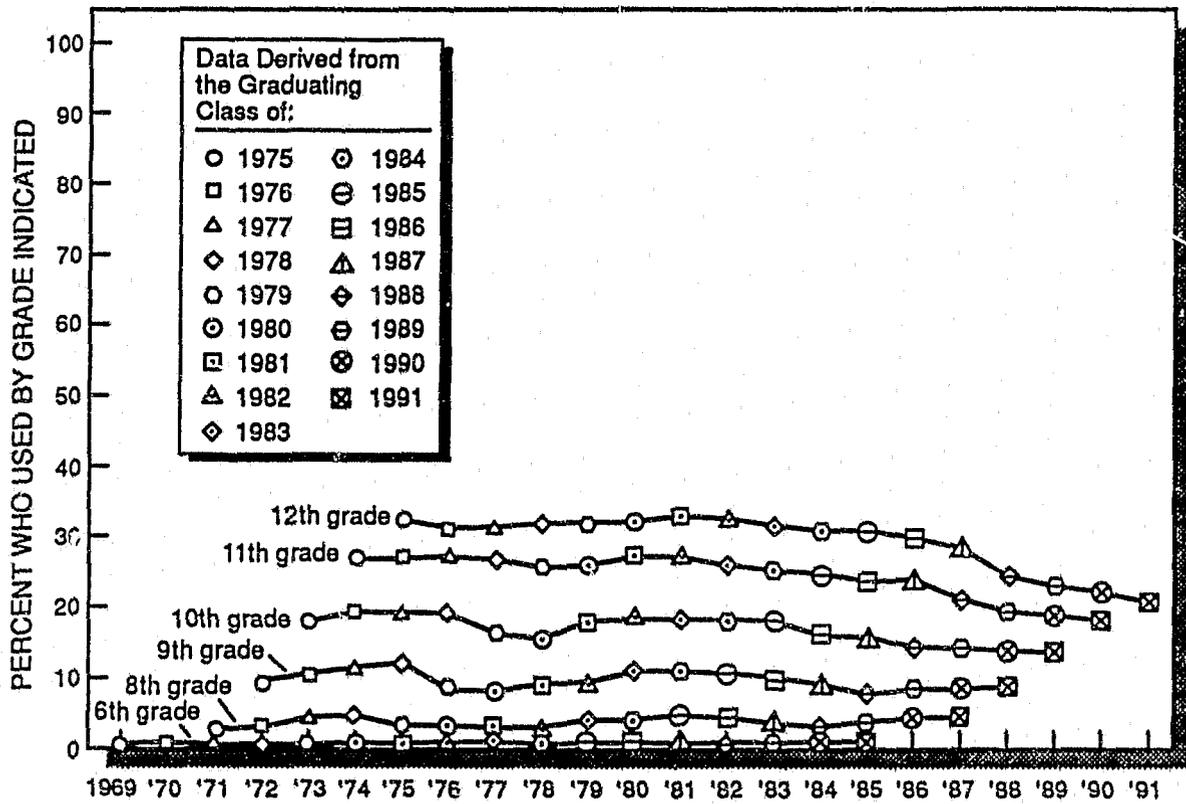


FIGURE 18d

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

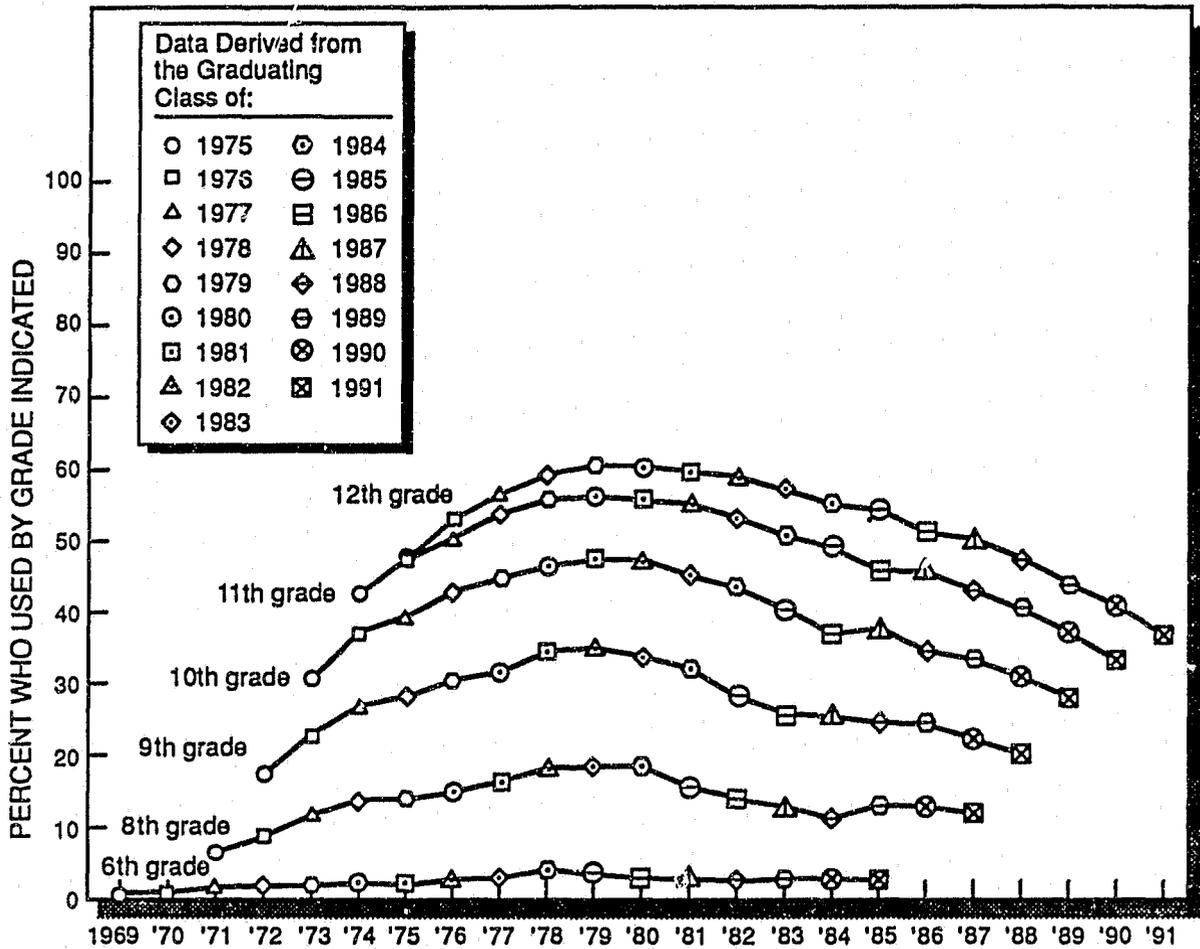


FIGURE 18e

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

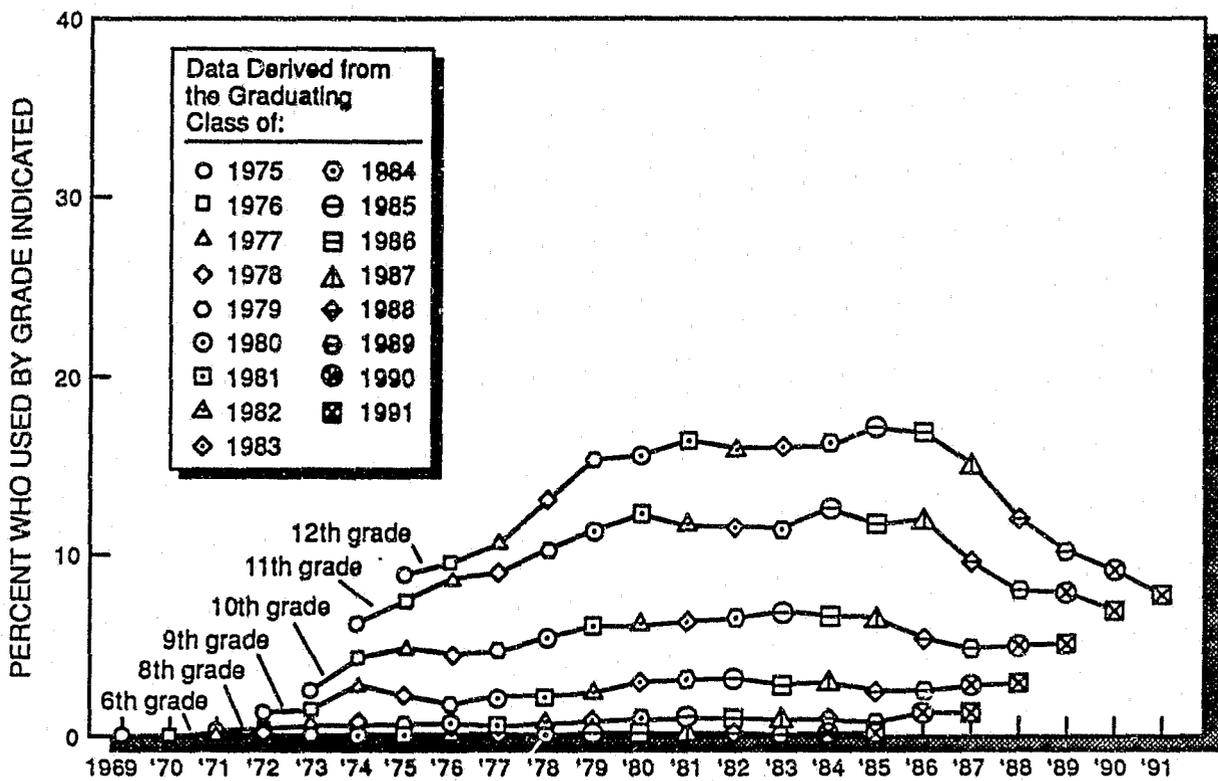
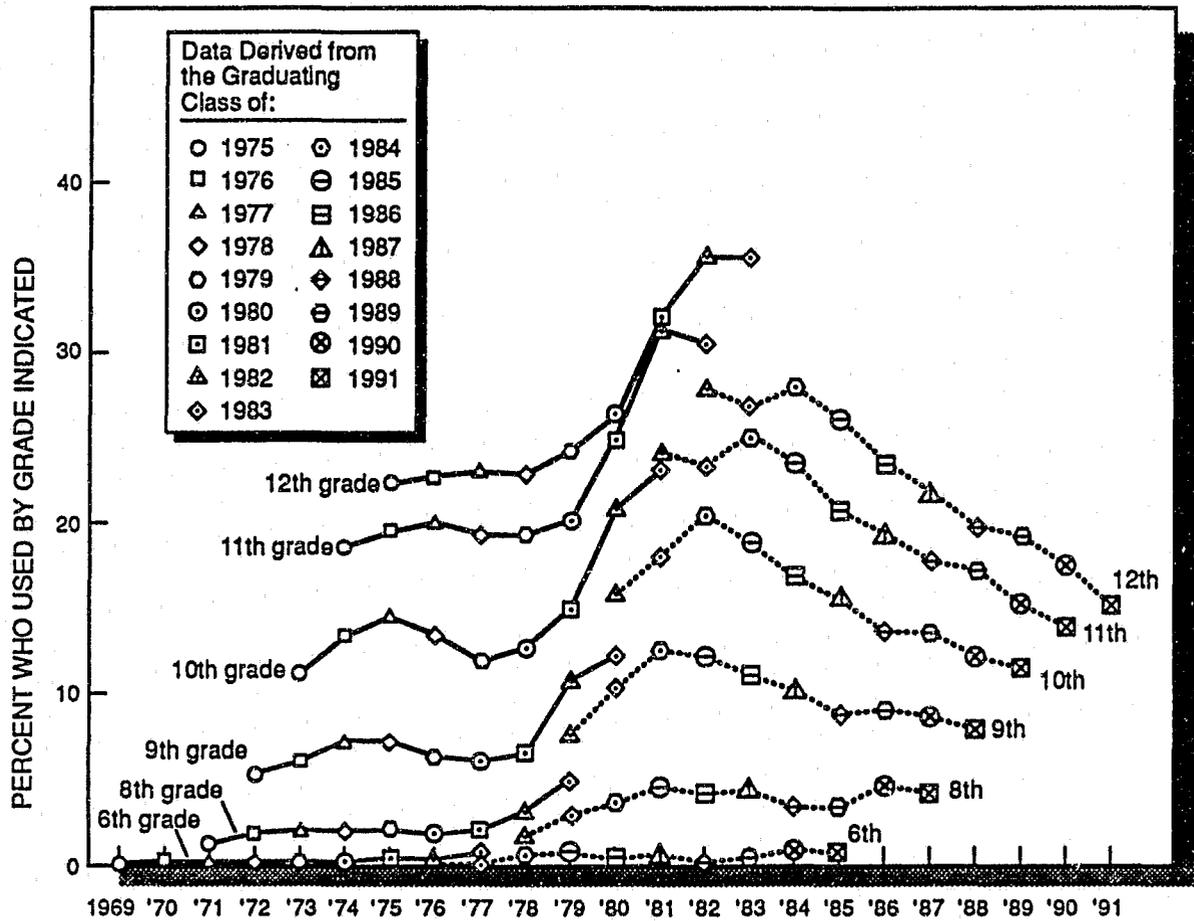


FIGURE 18f

**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

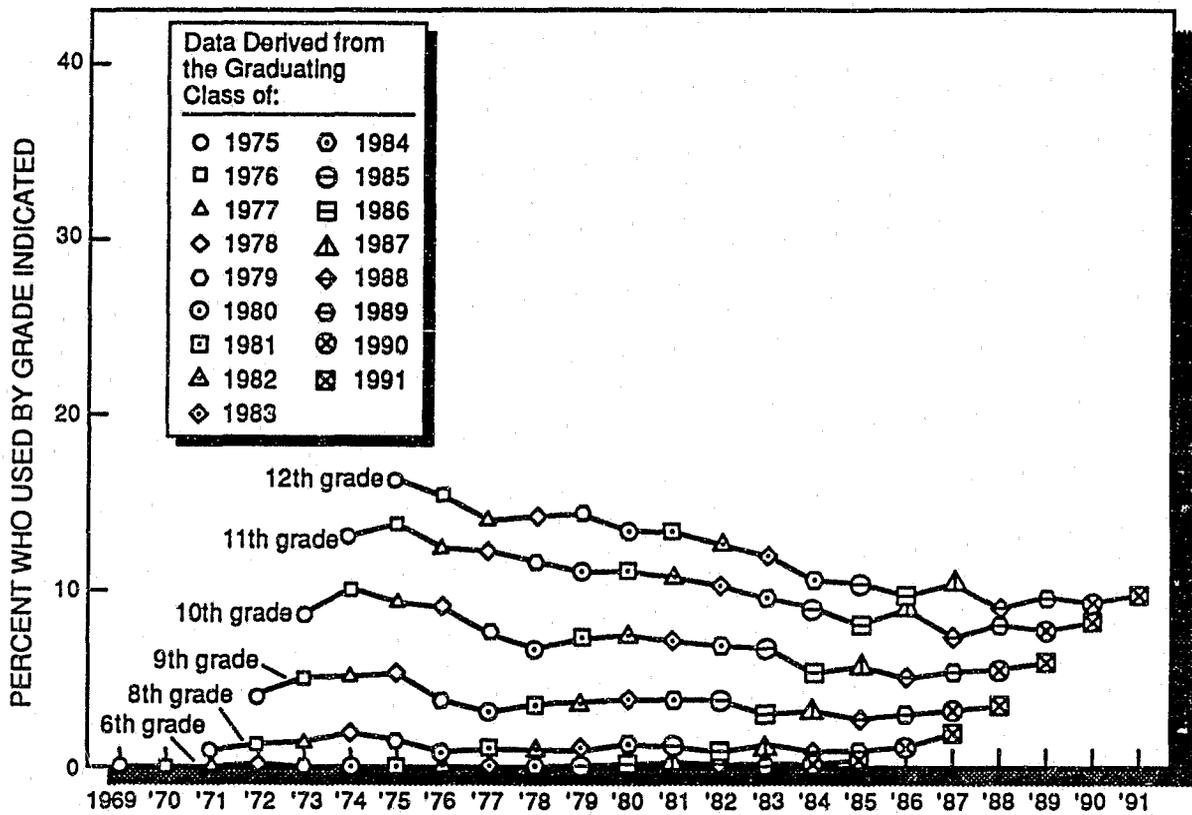


FIGURE 18h

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

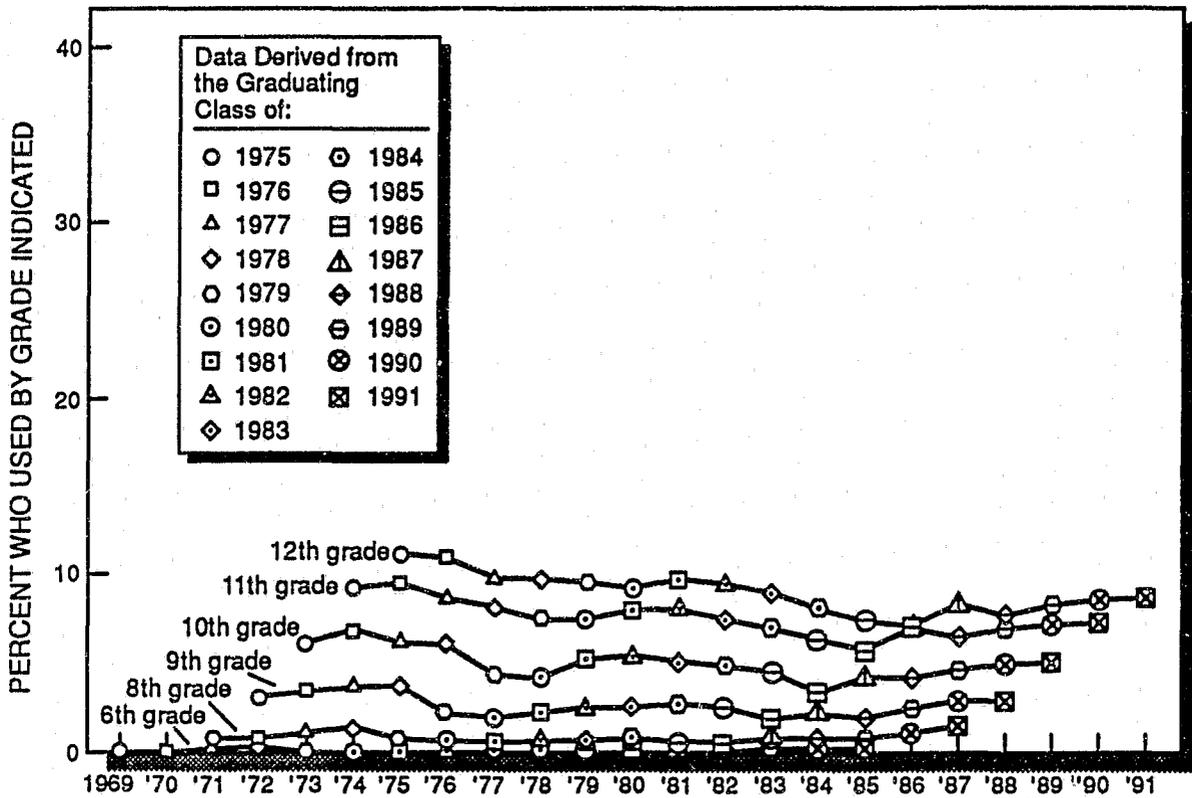


FIGURE 18i

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

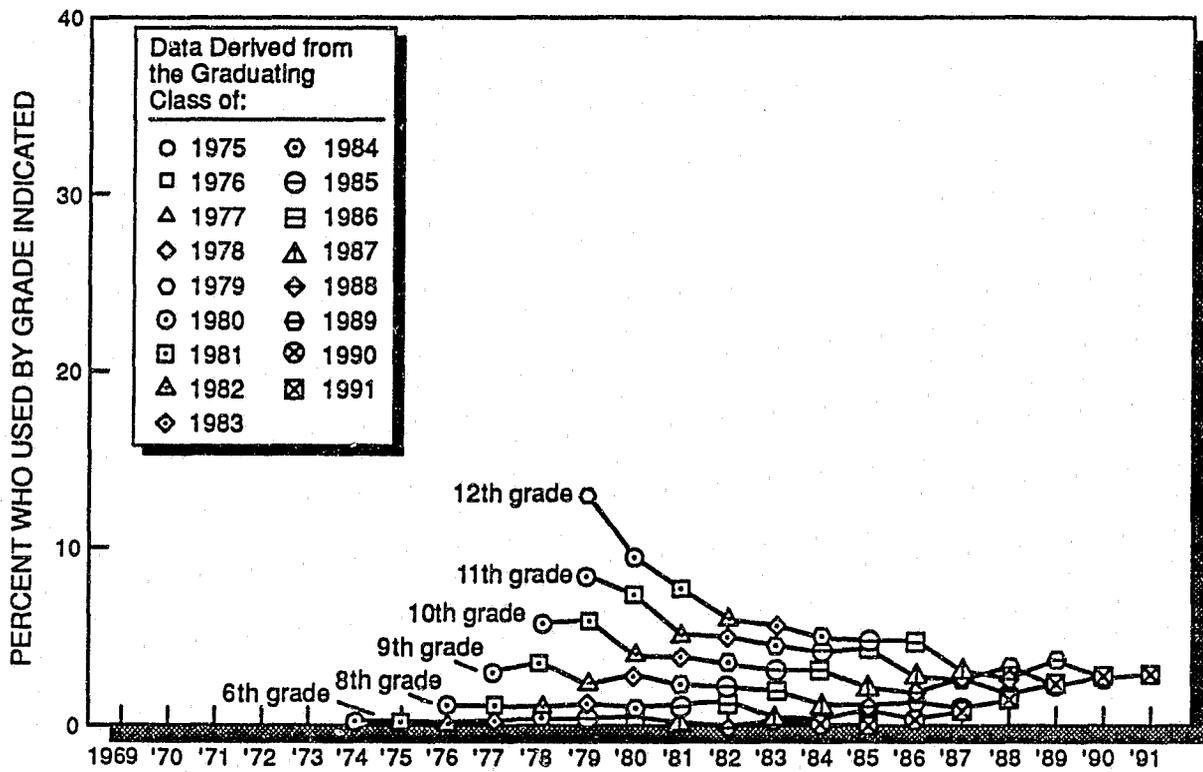


FIGURE 18j

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

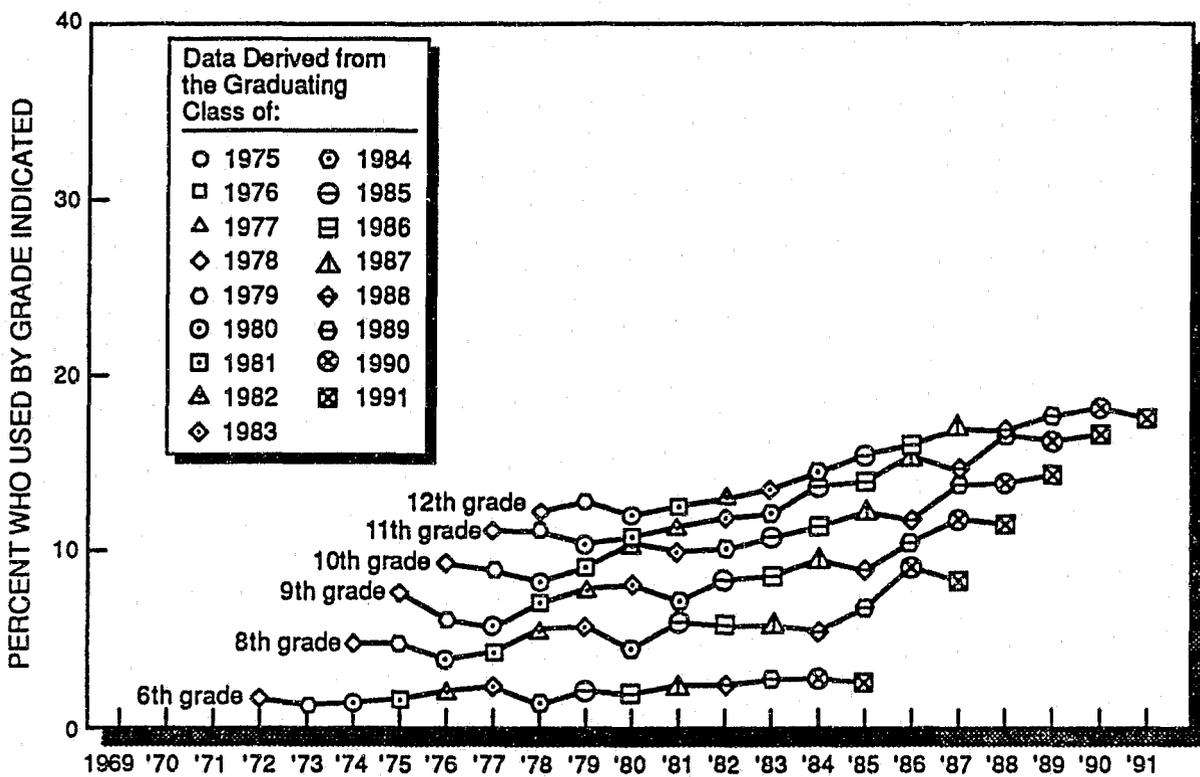


FIGURE 18k

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

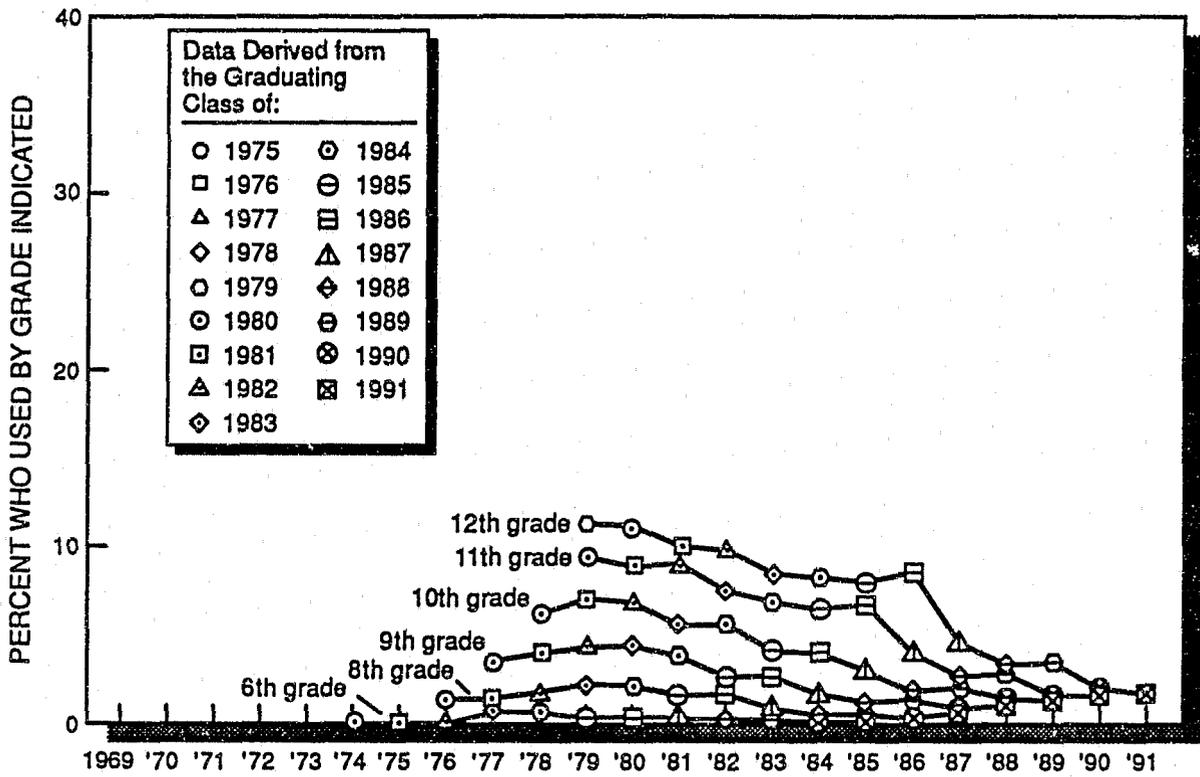


FIGURE 181

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

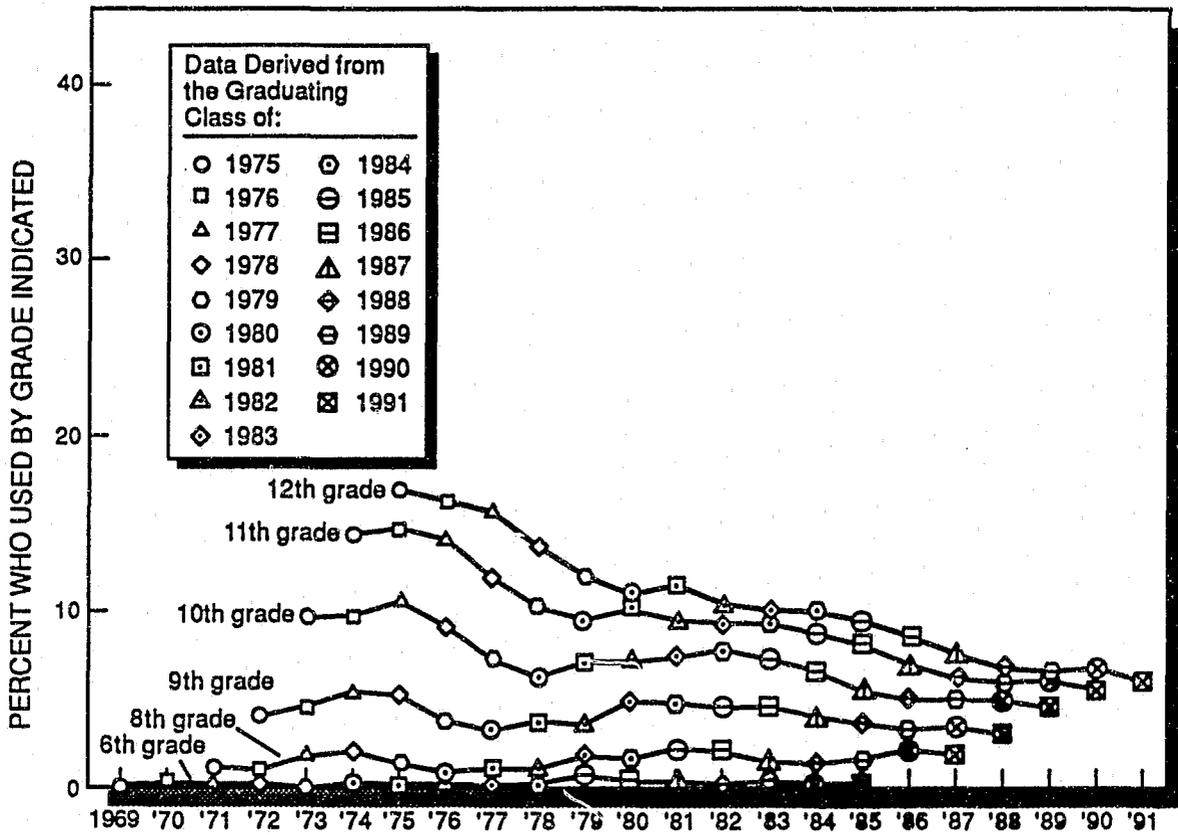


FIGURE 18m

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

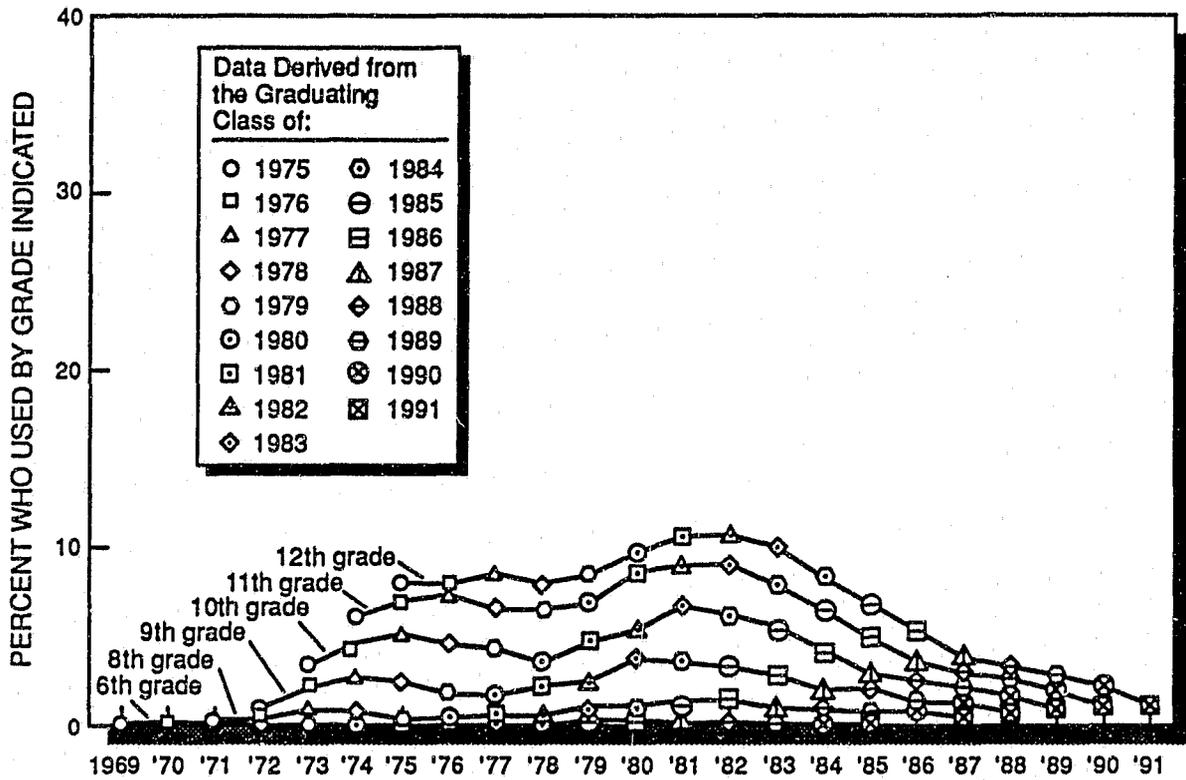


FIGURE 18n

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

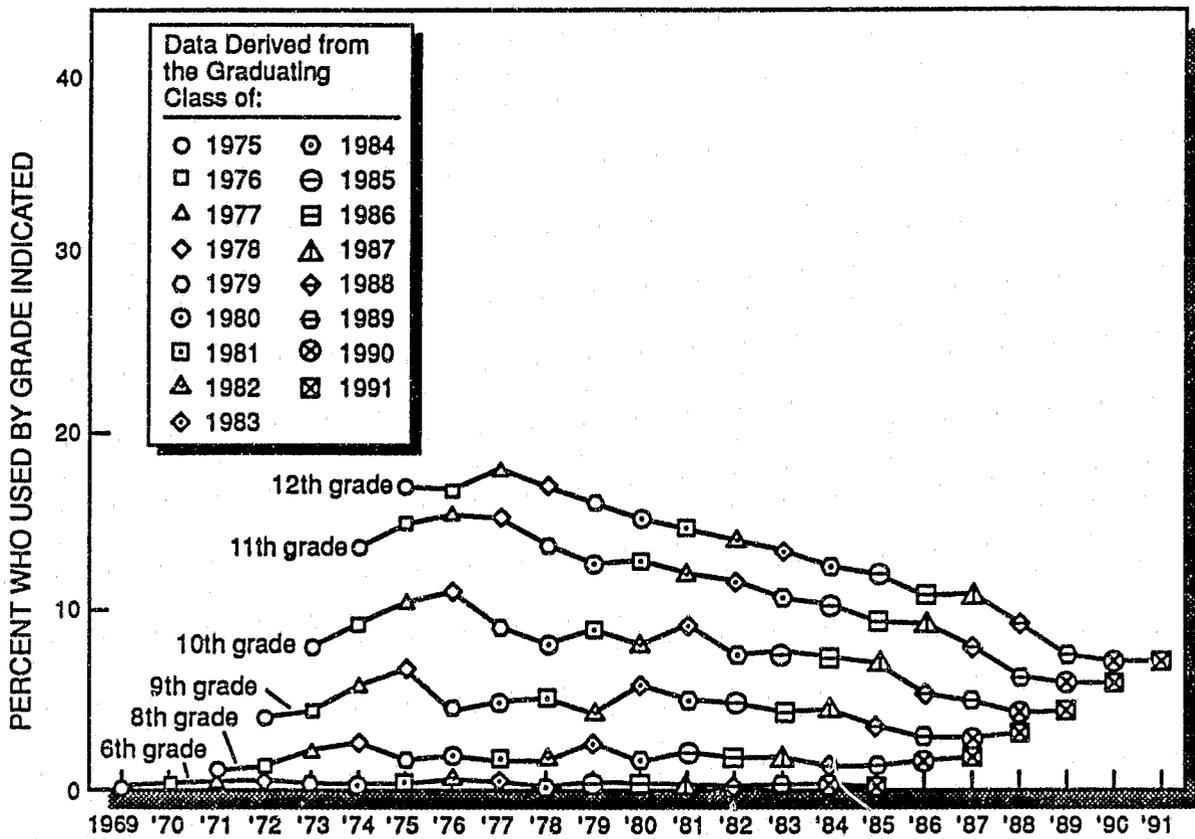


FIGURE 18o

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

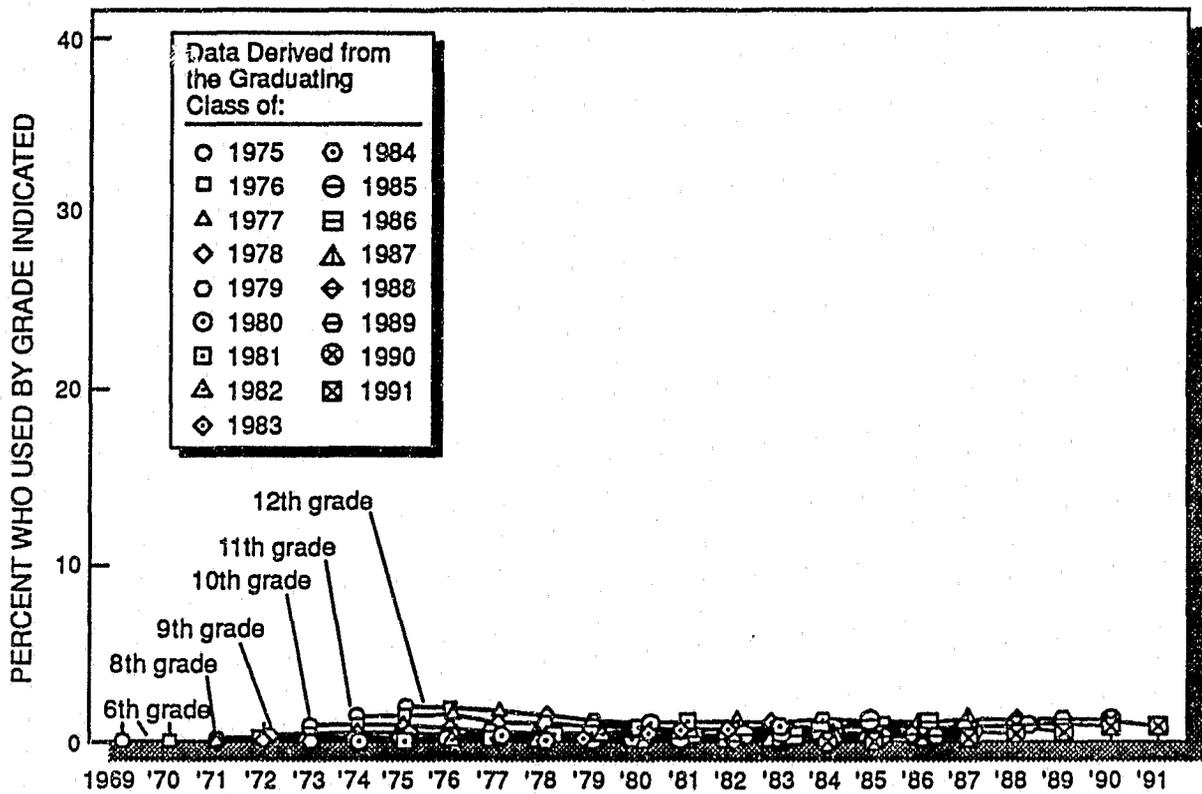


FIGURE 18p

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

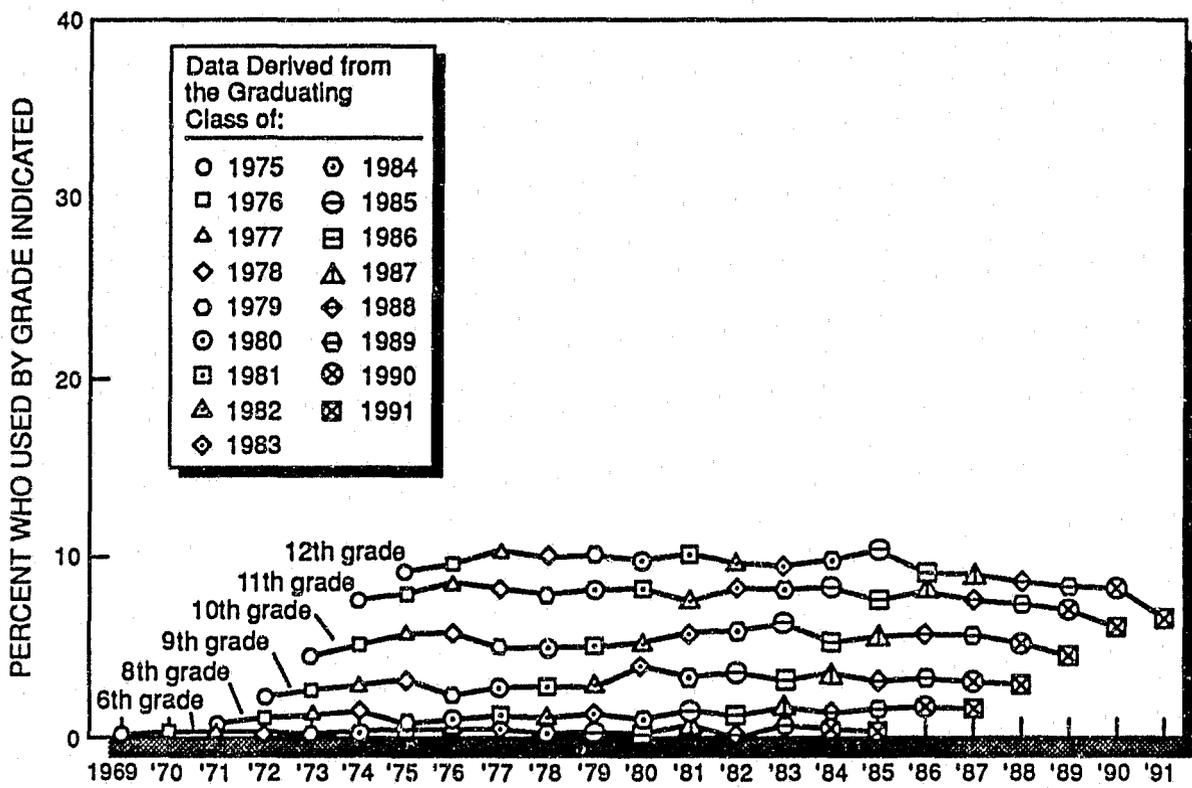


FIGURE 18q

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

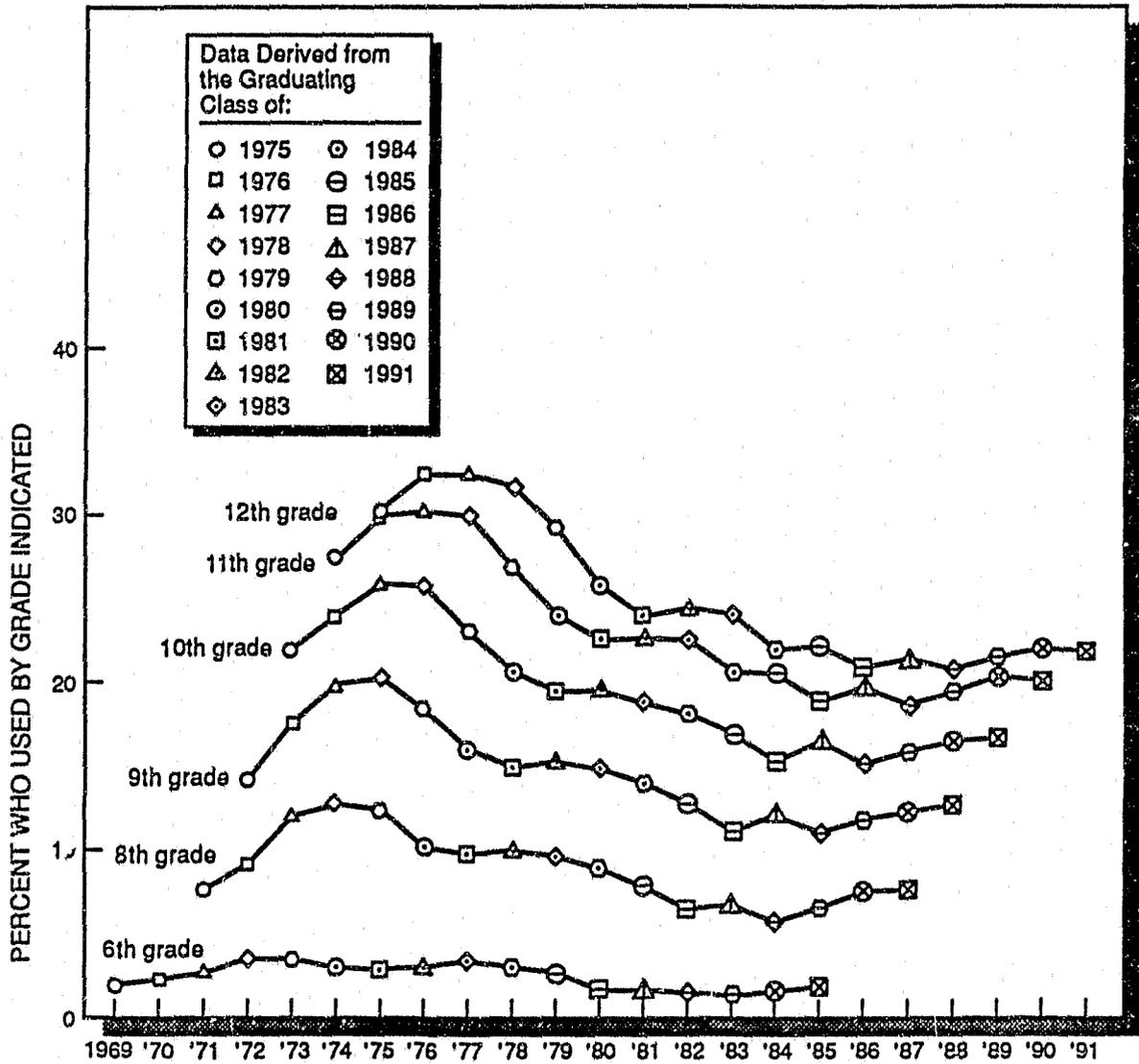
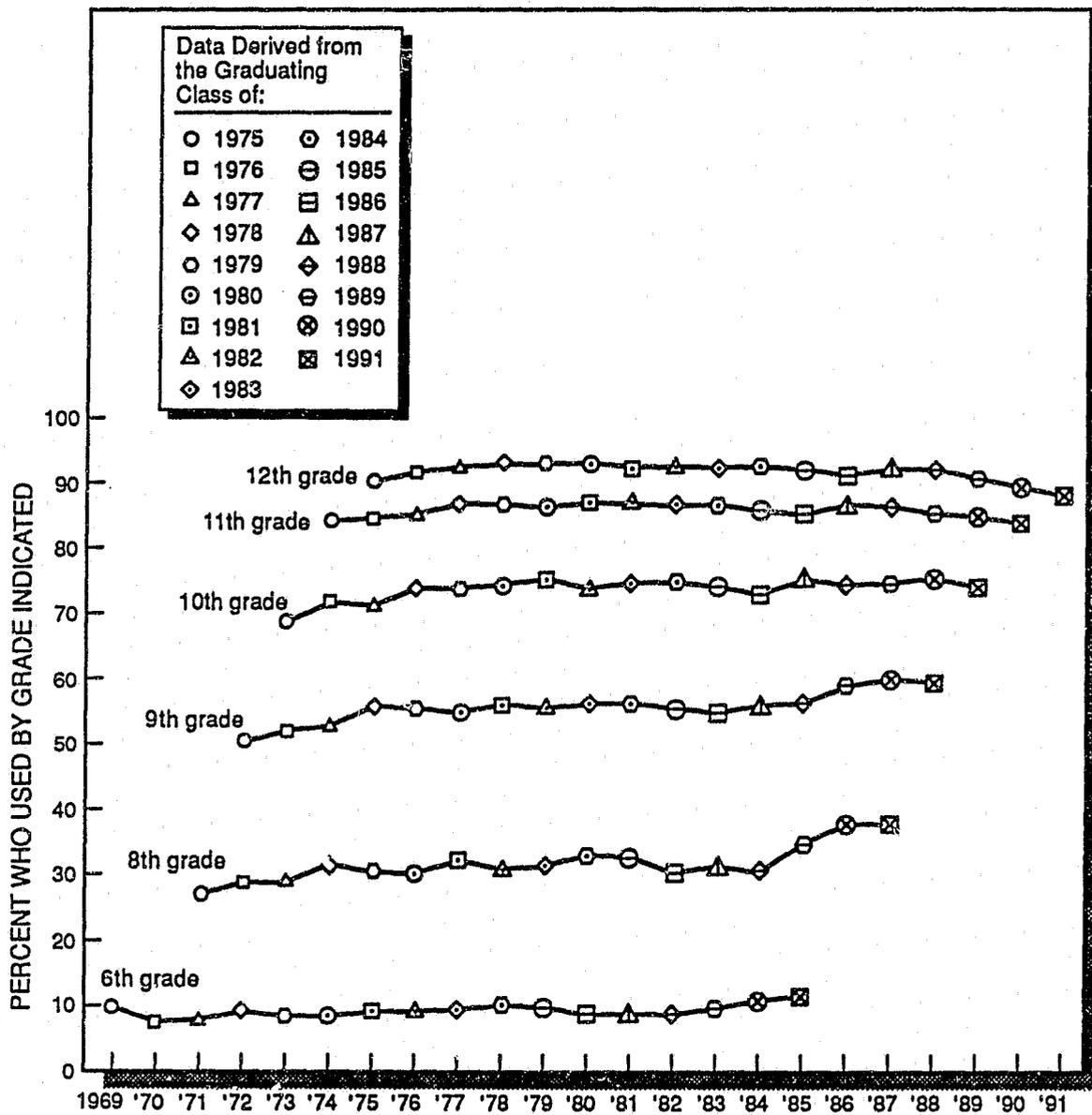


FIGURE 18r

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



Chapter 7

DEGREE AND DURATION OF DRUG HIGHS

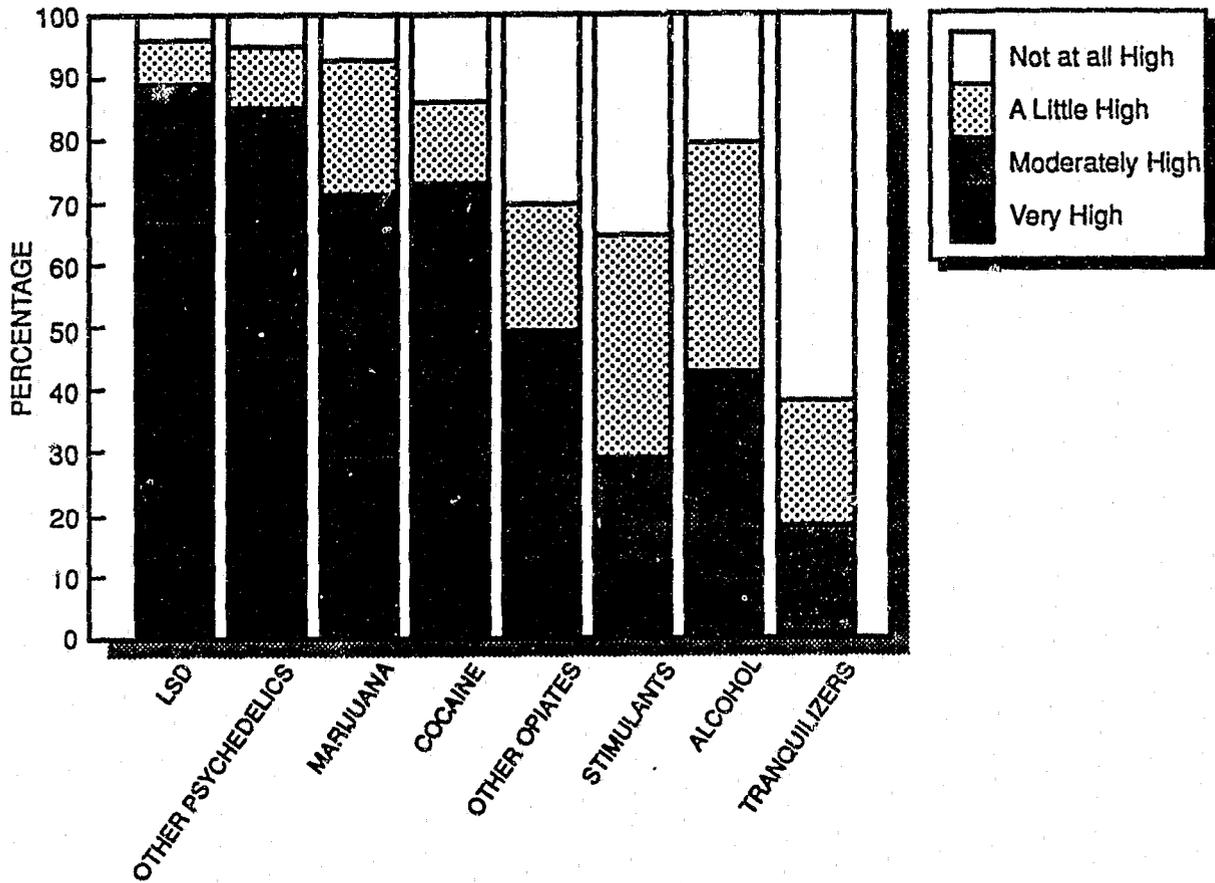
While it is possible to ask questions about substances which are manufactured and sold legally (e.g., alcohol and cigarettes) in terms of standard quantity measures, most of the illicitly used drugs are not purchased in precisely defined (or known) quantities or purities. Therefore, in order to secure 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

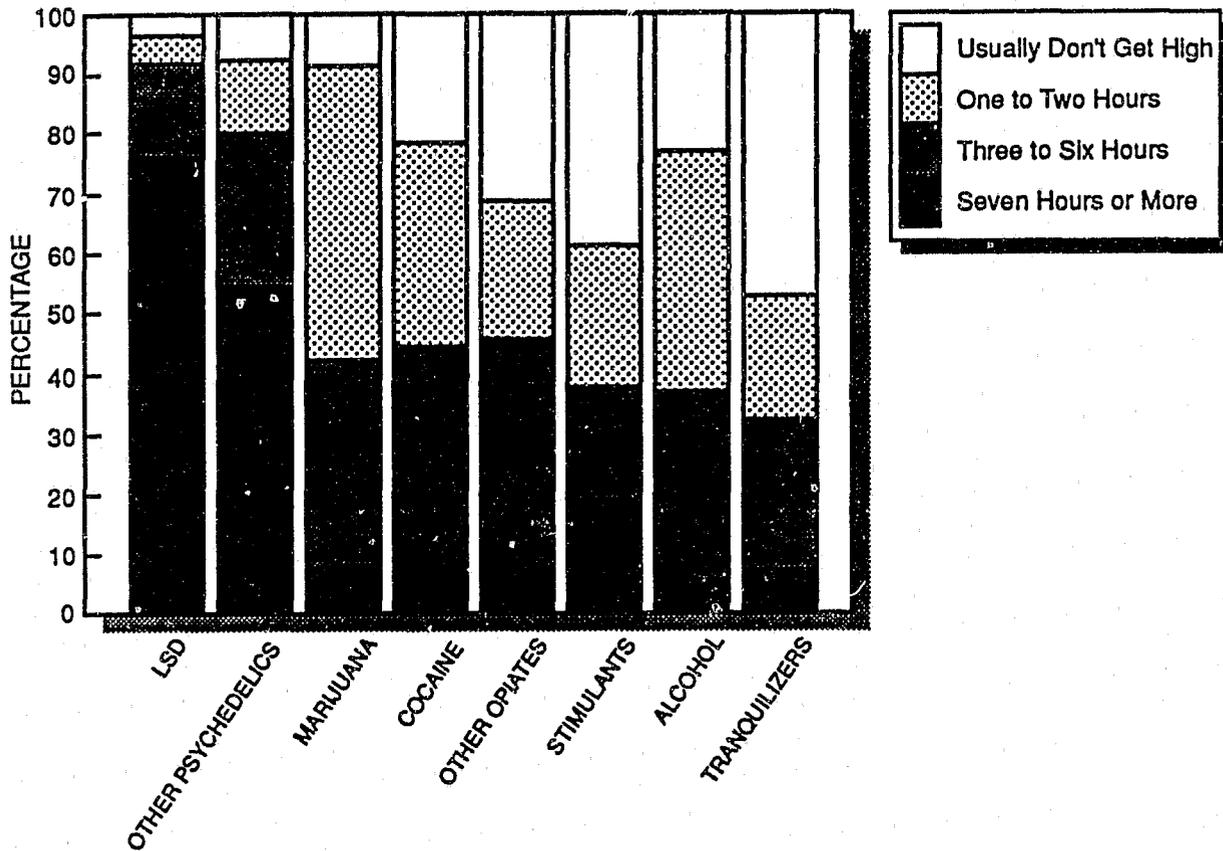
Degree of Drug Highs Attained by Recent Users
Class of 1991



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		
	8th Grade	10th Grade	12th Grade
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 much do you think people risk harming themselves (physically or in other ways), if they ...	Percentage saying "great risk" ^a																		
	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	'90-'91 change	
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	55.6	58.8	56.6	55.2	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	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	57.0	62.1	62.9	64.3	60.6	-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	45.3	51.7	53.8	53.9	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	63.8	-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	55.4	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	67.6	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	5.0	4.6	6.2	6.0	6.0	8.3	9.1	+0.8	
Take one or two drinks nearly every day	21.5	21.2	18.5	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	66.8	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	2549		

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) 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

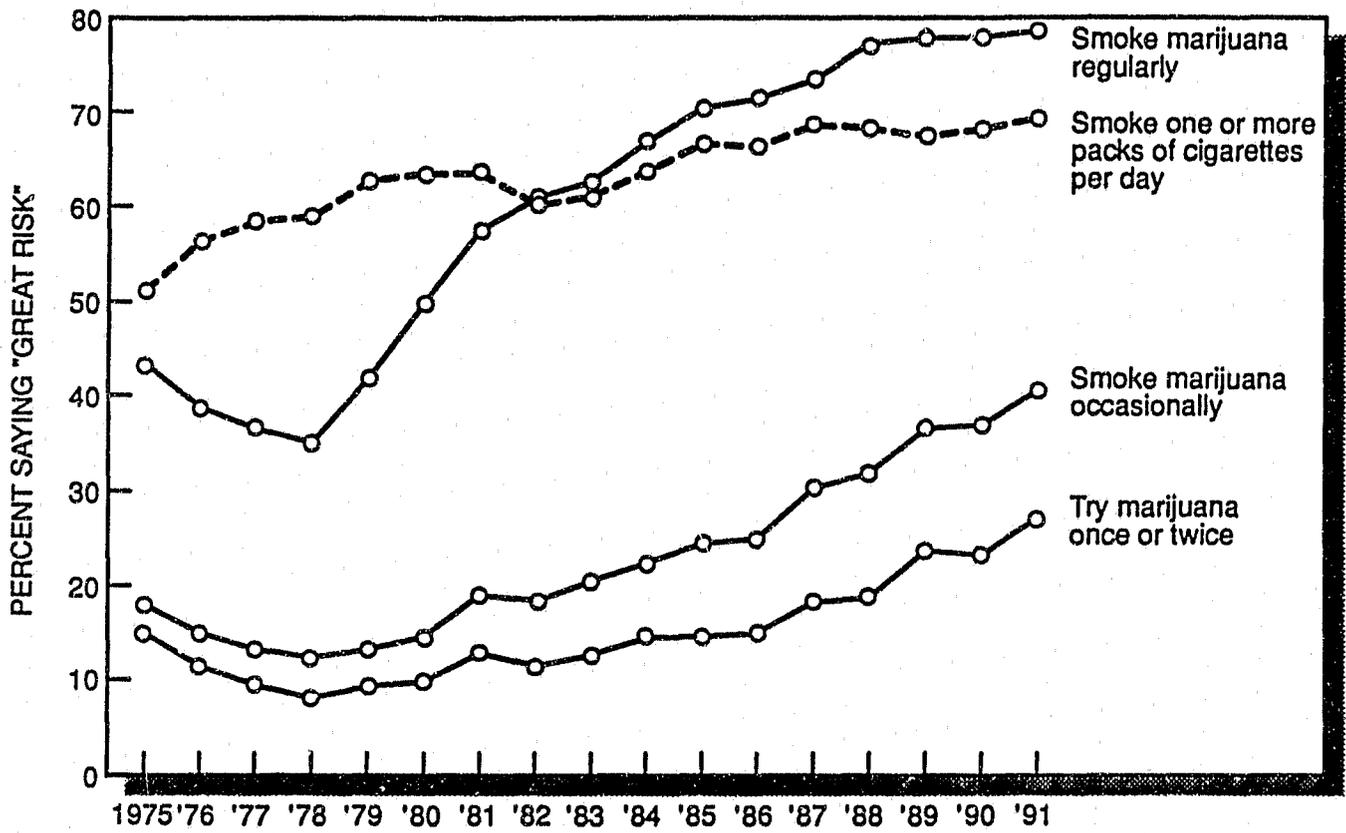


FIGURE 22

Trends in Perceived Harmfulness: Cocaine
All Seniors

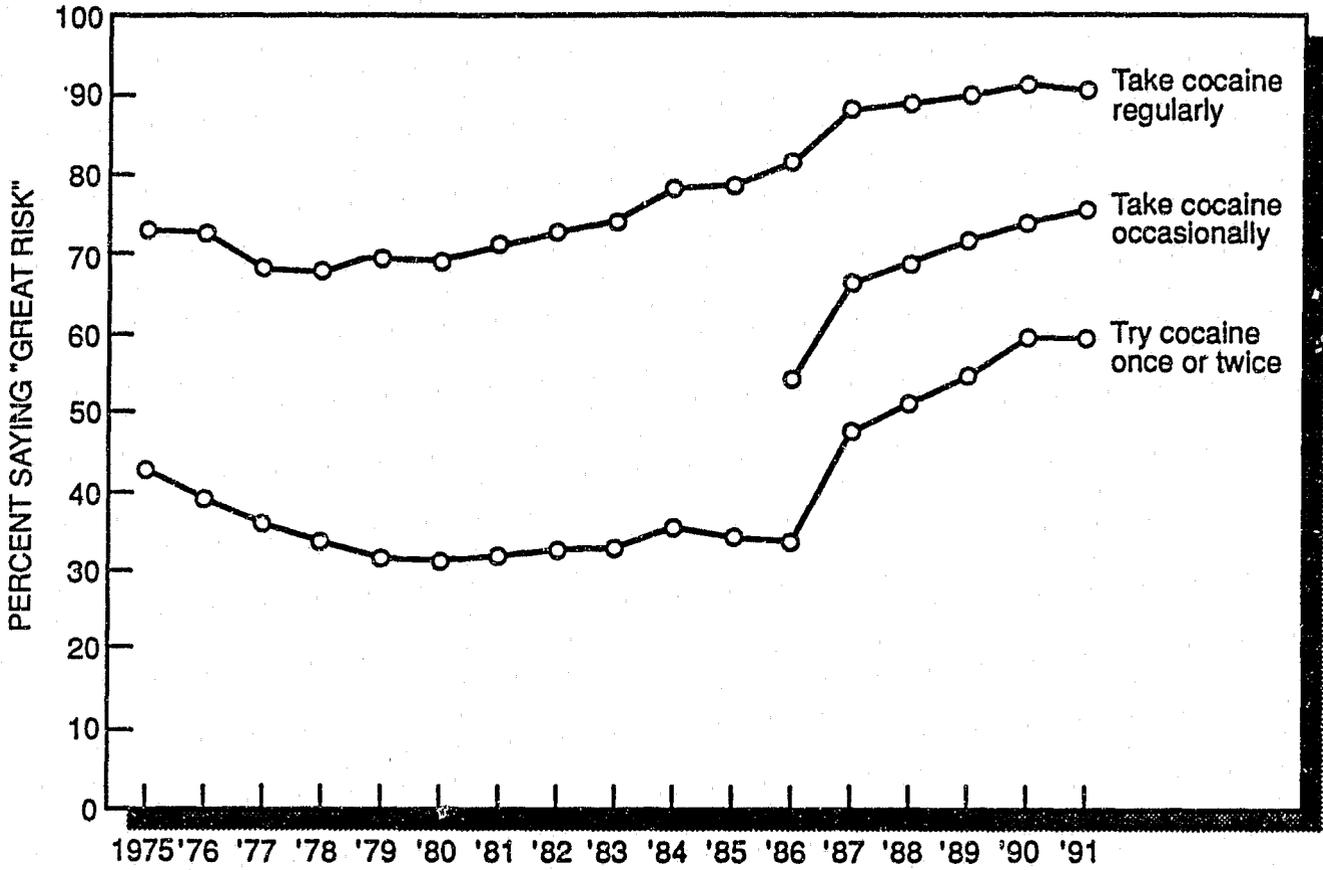


FIGURE 23
Marijuana: Trends in Perceived Availability,
Perceived Risk of Regular Use,
and Prevalence of Use in Past Thirty-Days
All Seniors

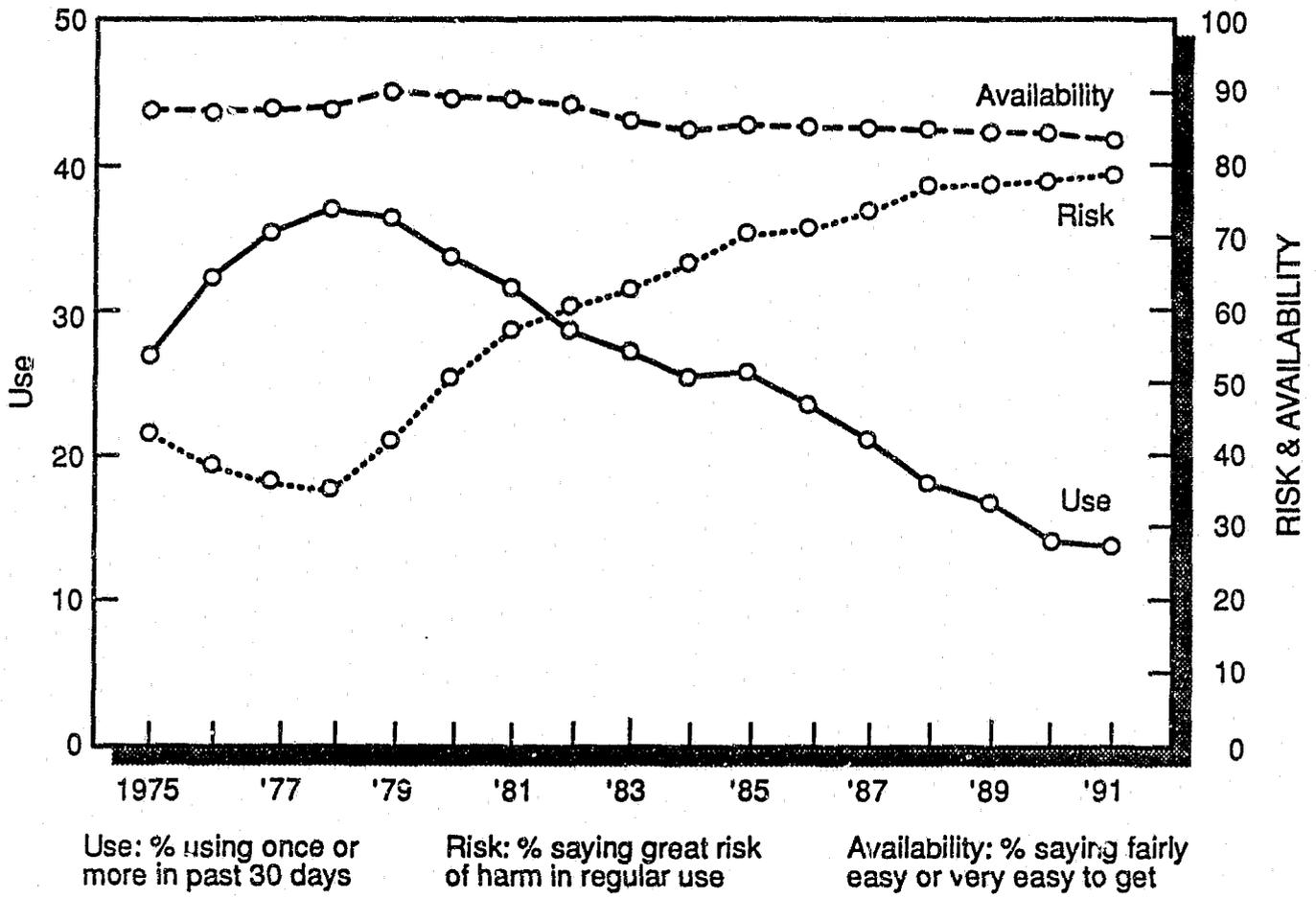


FIGURE 24

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

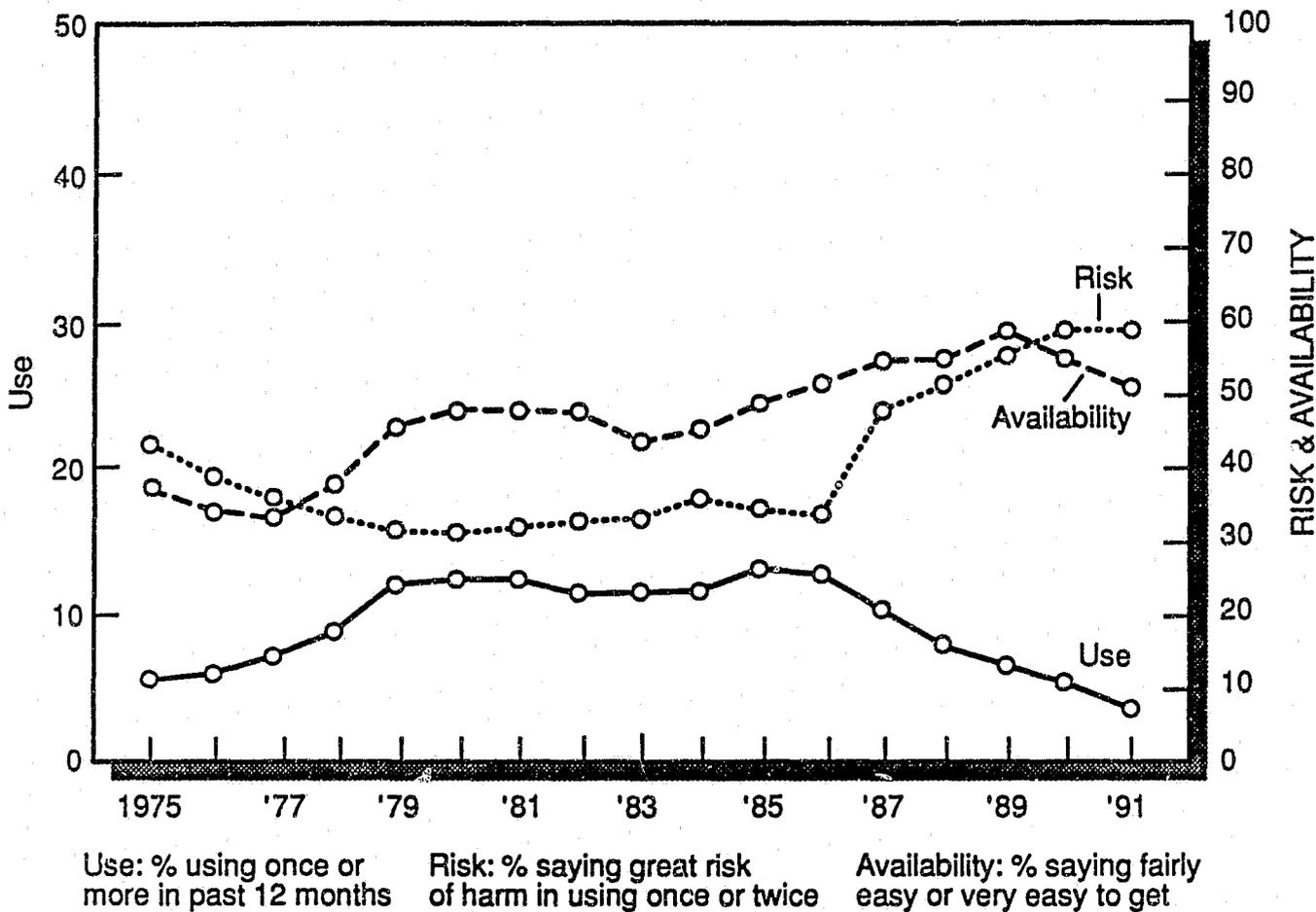
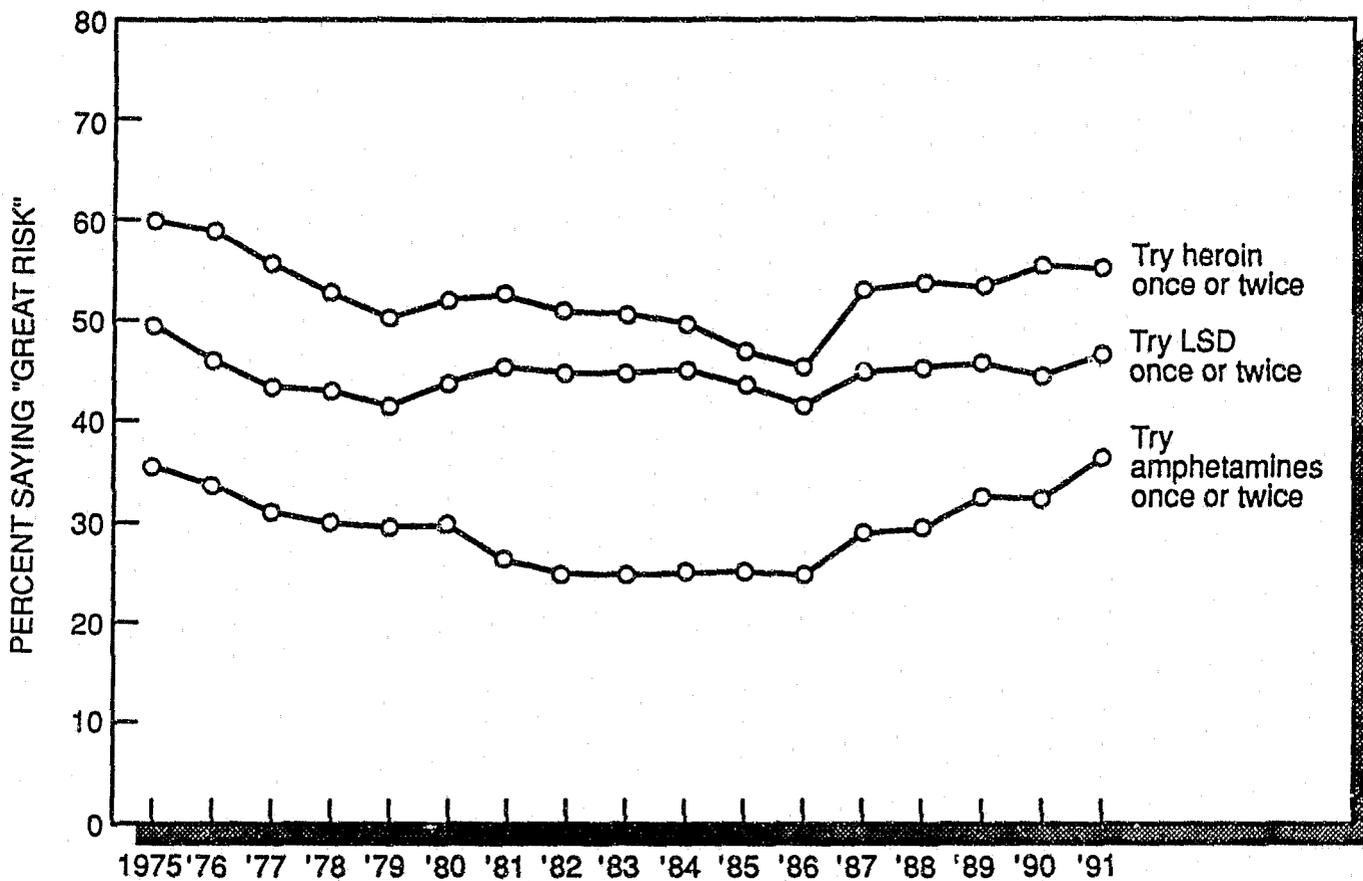


FIGURE 25

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" was adopted.²²

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**

Q. Do you disapprove of people who . . .	<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.

TABLE 22

Trends in Proportions of Twelfth Graders Disapproving of Drug Use

Q. Do you disapprove of people (who are 18 or older) doing each of the following? ^b	Percentage "disapproving" ^a																	
	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	'90-'91 change
Try marijuana once or twice	47.0	38.4	33.4	33.4	34.2	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6	67.8	68.7	+0.9
Smoke marijuana occasionally	54.8	47.8	44.3	43.5	45.3	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2	80.5	79.4	-1.1
Smoke marijuana regularly	71.9	69.5	65.5	67.5	69.2	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8	91.0	89.3	-1.7
Try LSD once or twice	82.8	84.6	83.9	85.4	86.6	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7	89.8	90.1	+0.3
Take LSD regularly	94.1	95.3	95.8	96.4	96.9	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4	96.3	96.4	+0.1
Try cocaine once or twice	81.3	82.4	79.1	77.0	74.7	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5	91.5	93.6	+2.1 ^{is}
Take cocaine regularly	93.3	93.9	92.1	91.9	90.8	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4	96.7	97.3	+0.6
Try heroin once or twice	91.5	92.6	92.5	92.0	93.4	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4	95.1	96.0	+0.9
Take heroin occasionally	94.8	96.0	96.0	96.4	96.8	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2	96.7	97.3	+0.6
Take heroin regularly	96.7	97.5	97.2	97.8	97.9	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4	97.5	97.8	+0.3
Try amphetamines once or twice	74.8	75.1	74.2	74.8	75.1	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3	85.3	86.5	+1.2
Take amphetamines regularly	92.1	92.8	92.5	93.5	94.4	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2	95.5	96.0	+0.5
Try barbiturates once or twice	77.7	81.3	81.1	82.4	84.0	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3	90.5	90.6	+0.1
Take barbiturates regularly	93.3	93.6	93.0	94.3	95.2	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3	96.4	97.1	+0.7
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	21.6	18.2	15.6	15.6	15.8	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3	29.4	29.8	+0.4
Take one or two drinks nearly every day	67.6	68.9	66.8	67.7	68.3	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	76.5	77.9	76.5	-1.4
Take four or five drinks nearly every day	88.7	90.7	88.4	90.2	91.7	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6	91.9	90.6	-1.3
Have five or more drinks once or twice each weekend	60.3	58.6	57.4	56.2	56.7	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5	68.9	67.4	-1.5
Smoke one or more packs of cigarettes per day	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8	71.4	-1.4
Approx. N =	2677	2957	3085	3686	3221	3261	3610	3651	3341	3254	3265	3113	3302	3311	2799	2566	2547	

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

^aAnswer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

^bThe 1975 question asked about people who are "20 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																	
Q. Do you think that people (who are 18 or older) should be prohibited by law from doing each of the following? ^b		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	'90-'91 change
171	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	-4.4s
	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	78.7	81.3	80.0	81.9	79.8	-2.1
	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	-4.8ss
	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	-1.0
	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	-3.6s
	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	-1.3
	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	-4.8ss
	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	-1.9
	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	-1.0
	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	-0.3
	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	-2.4
	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)

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?

	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
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

Q. If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?

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

Q. If marijuana were legal to use and legally available, which of the following would you be most likely to do?

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 3620 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 . . .	Adjustment Factor	Percentage saying friends disapprove ^a																	'90-'91 change
		Class of 1975 ^b	Class of 1976	Class of 1977 ^b	Class of 1978	Class of 1979 ^b	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	40.9	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	79.6	83.9	88.1	88.9	90.5	91.8	+1.3
Taking cocaine occasionally		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.3	89.7	92.1	92.1	94.2	94.7	+0.5
Trying an amphetamine once or twice	(+2.2)	78.8	NA	80.3	NA	81.0	78.9	74.4	76.7	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

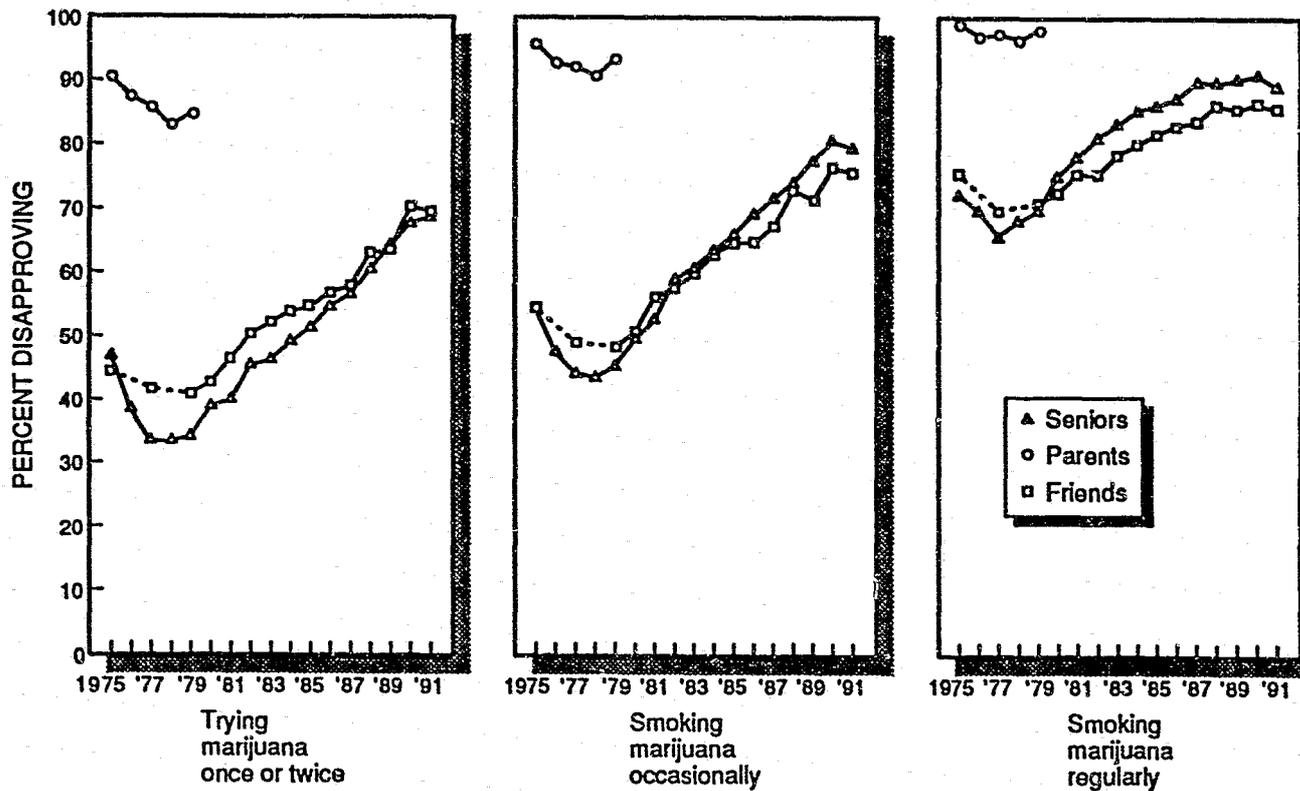
- A comparison of seniors' perceptions of friends' disapproval with their perceptions of parents' disapproval, in the years for which comparison is possible, shows several interesting findings.
- First there was rather little variability among different students in their perceptions of their parents' 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

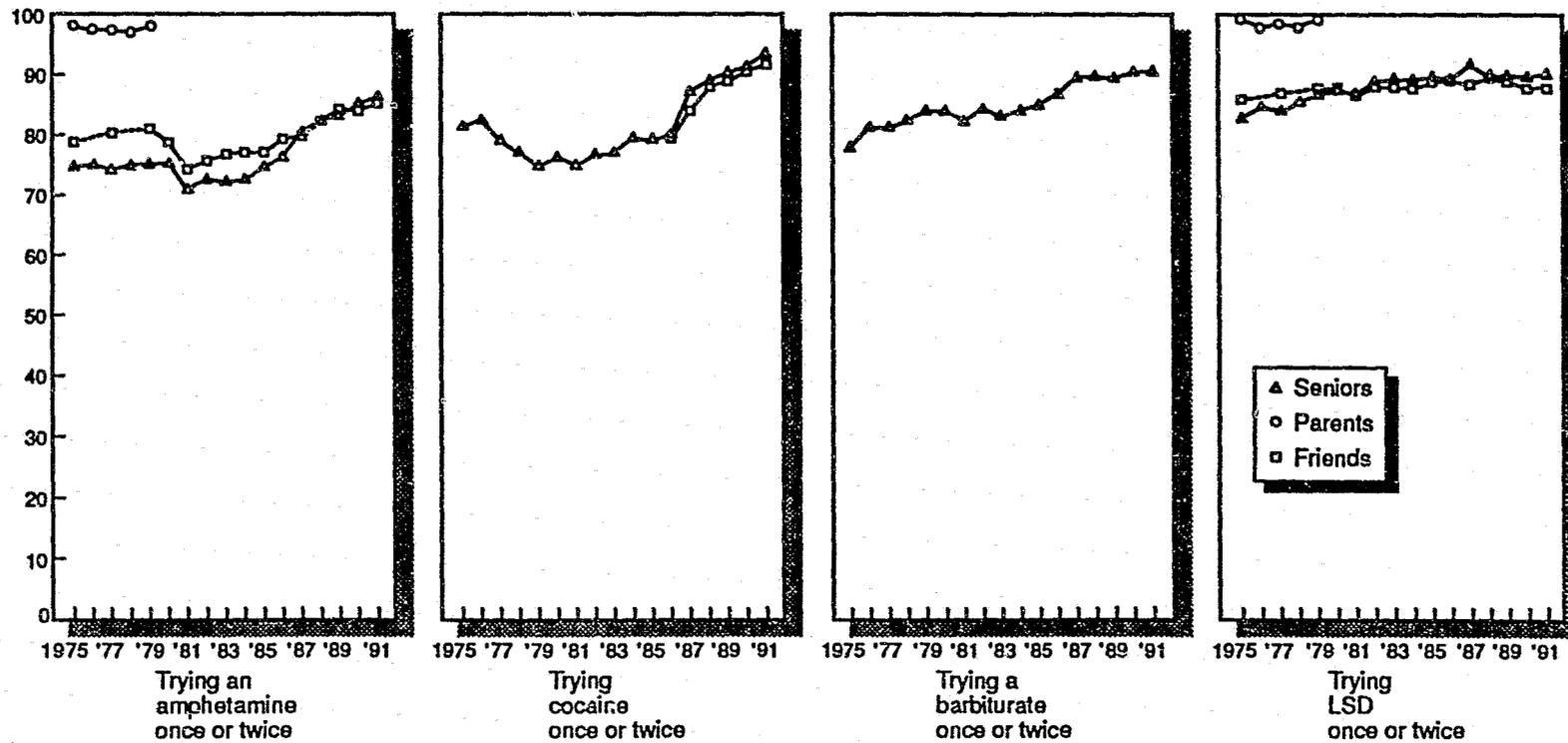
Trends in Disapproval of Illicit Drug Use
Seniors, Parents, and Peers



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

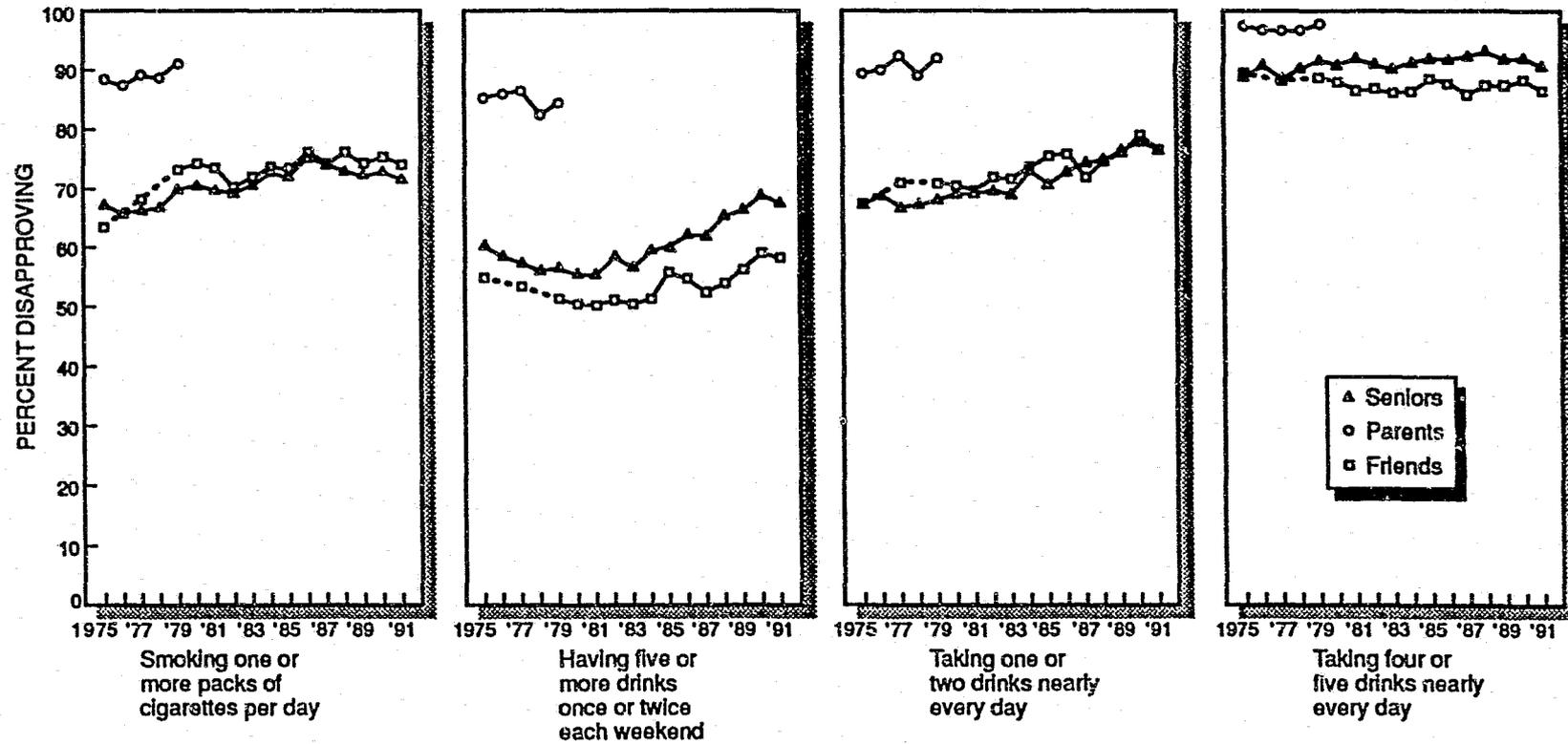
Trends in Disapproval of Illicit Drug Use
Seniors, Parents, and Peers



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)

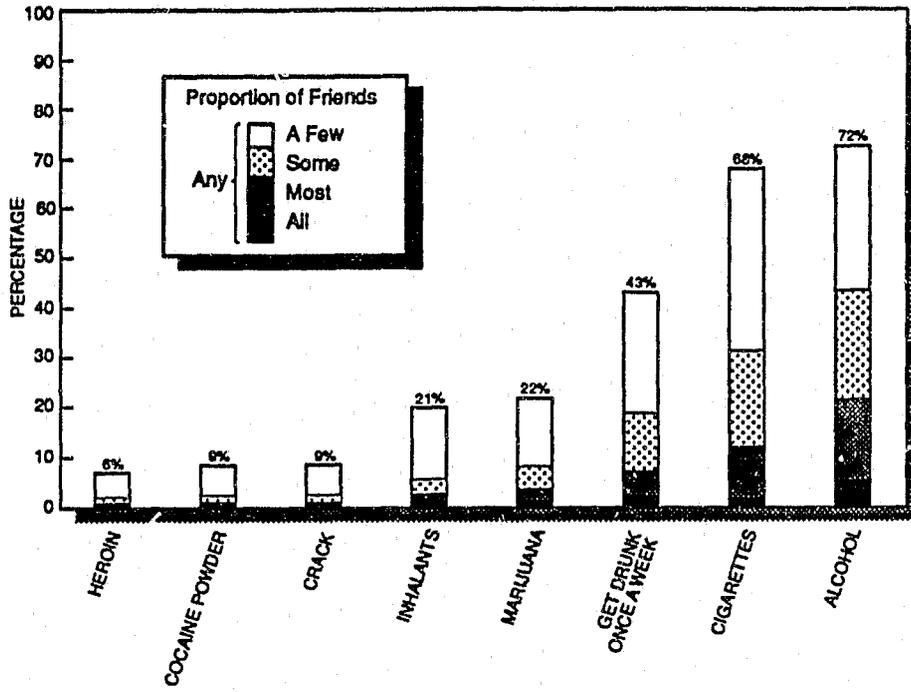
<i>Q. How many of your friends would you estimate . . .</i>	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
Smoke marijuana			
% saying none	78.1	51.7	34.2
% saying most or all	3.3	7.9	10.0
Use inhalants			
% saying none	79.5	82.7	80.8
% saying most or all	2.4	1.4	0.7
Take cocaine powder			
% saying 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

Eighth Graders



Tenth Graders

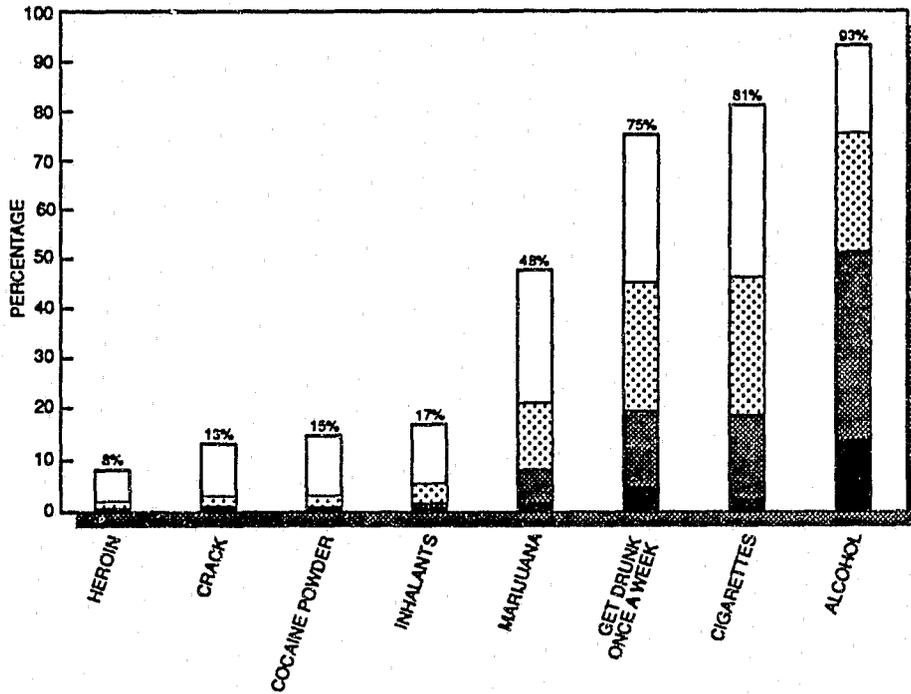
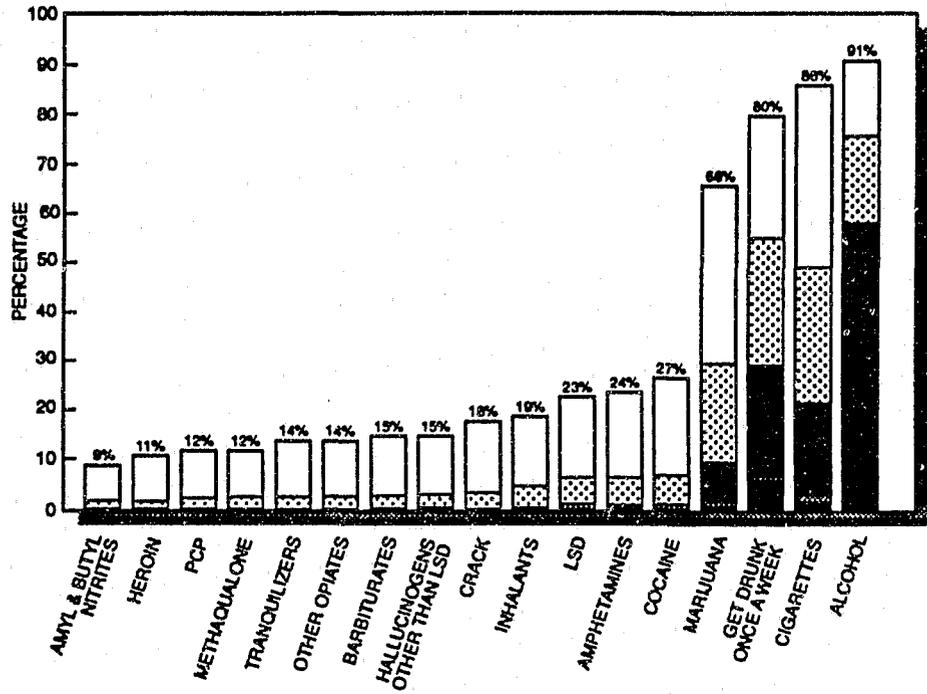


FIGURE 28 (cont.)

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

Twelfth Graders



- 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 ...	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	'90-'91 change
Take any illicit drug^a																		
% saying none	14.2	15.4	13.1	12.5	11.0	12.5	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	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	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	37.6	36.7	35.3	38.8	38.7	38.2	36.7	37.6	43.5	43.8	49.9	53.7	+3.8ss
% saying most or all	10.6	8.9	7.7	8.5	10.4	11.1	11.9	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	17.0	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	31.3	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	83.9	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	1.1	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	82.5	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	0.9	0.6	0.4	-0.2
Take LSD																		
% saying none	63.5	69.4	68.1	70.1	71.1	71.9	71.5	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	2.4	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	58.8	69.7	68.6	70.8	71.8	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	2.2	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	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	1.1	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	59.3	62.4	61.1	56.2	54.4	56.3	62.3	62.6	68.3	73.2	+4.9ss
% saying most or all	3.4	3.2	3.6	4.0	6.0	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	-0.6
Take "crack"																		
% saying none	NA	72.6	74.6	73.9	80.8	82.4	+1.6											
% saying most or all	NA	2.2	1.1	2.1	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 ...	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	'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	+3.5 ^{ss}
% 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	+4.4 ^{ss}
% 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	+2.6 ^s
% 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	1.5	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	13.5	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	21.5	21.0	20.2	23.1	21.4	21.8	+0.4
Approx. N =	2640	2697	2788	3247	2933	2987	3307	3303	3095	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"?

	Cls. of 1975	Cls. of 1976	Cls. of 1977	Cls. of 1978	Cls. of 1979	Cls. of 1980	Cls. of 1981	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
Any illicit drug^a																		
% saying not at all	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	+3.4s
% saying often	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	-2.5
Any illicit drug^a except marijuana																		
% saying not at all	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	+5.4ss
% saying often	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																		
% saying not at all	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	+3.8s
% saying often	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
LSD																		
% saying not at all	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
% saying often	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
Other psychedelics																		
% 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
Cocaine																		
% saying not at all	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	+6.4sss
% saying often	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
Heroin																		
% saying not at all	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
% saying often	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
Other narcotics																		
% 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	+2.9s
% 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
Amphetamines																		
% saying not at all	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	+4.7ss
% saying often	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
Barbiturates																		
% saying not at all	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	+3.3ss
% saying often	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
Tranquilizers																		
% 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	-0.5
Alcoholic beverages																		
% saying not at all	NA	6.0	5.6	5.5	5.2	5.3	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4	8.3	+1.9s
% saying often	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
Approx. N =	NA	2950	3075	3682	3253	3259	3608	3645	3334	3238	3252	3078	3296	3300	2795	2556	2525	

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

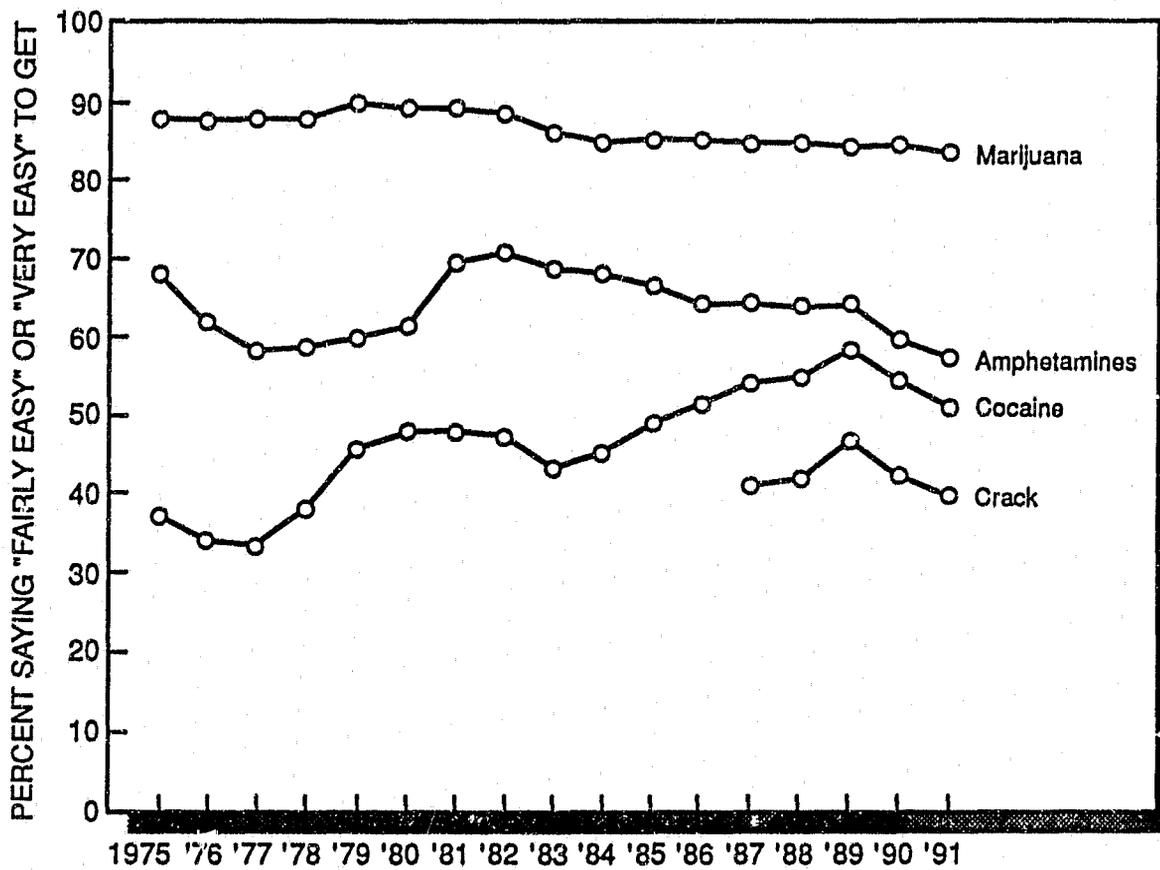


FIGURE 29b

Trends in Perceived Availability of Drugs
All Seniors

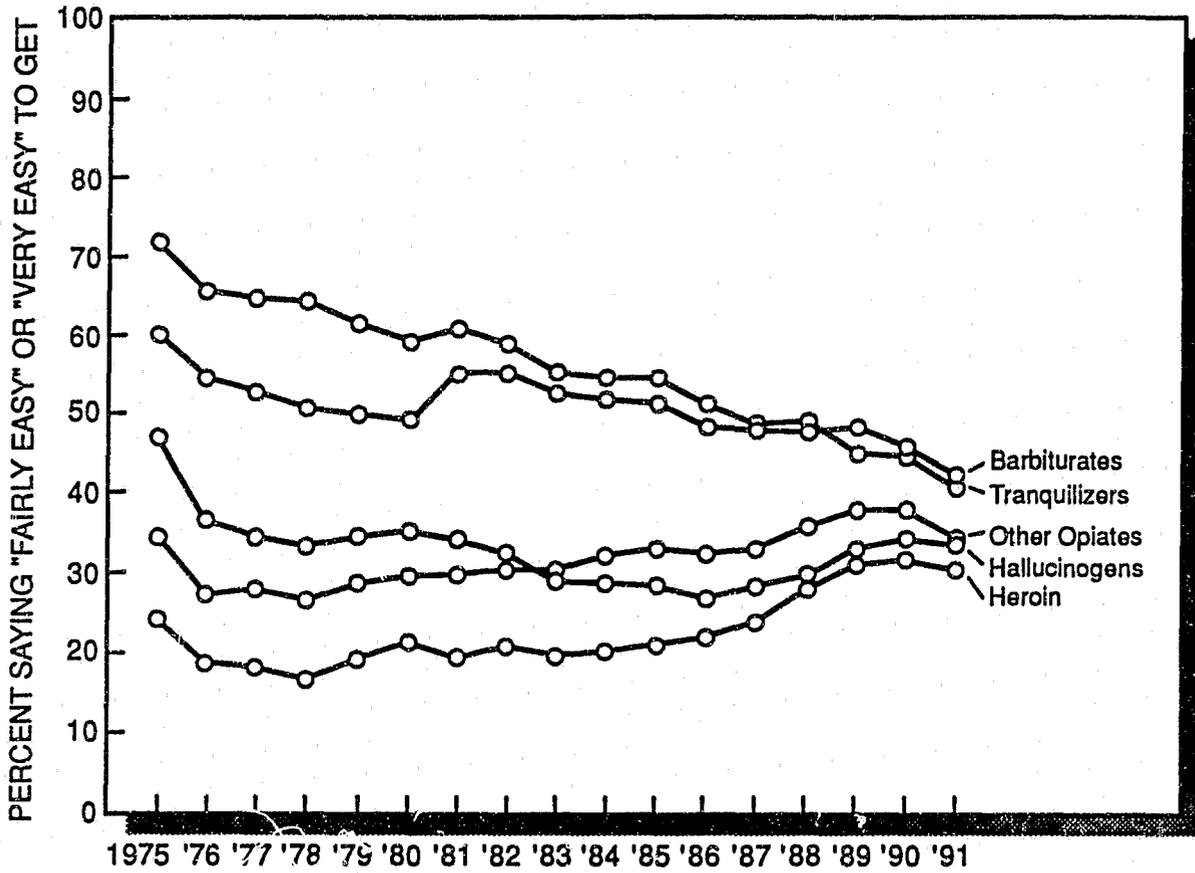


TABLE 29
Perceived Availability of Drugs
Eighth, Tenth, and Twelfth Graders, 1991

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

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 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	'90-'91 change
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.

^aAnswer 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

(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	8.8	-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 1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 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

Lock-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	-3.3 ^a
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...	Lifetime Illicit Drug Use		
	No Use	Marijuana Only	Other Illicit Drugs
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=	(1318)	(443)	(579)

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

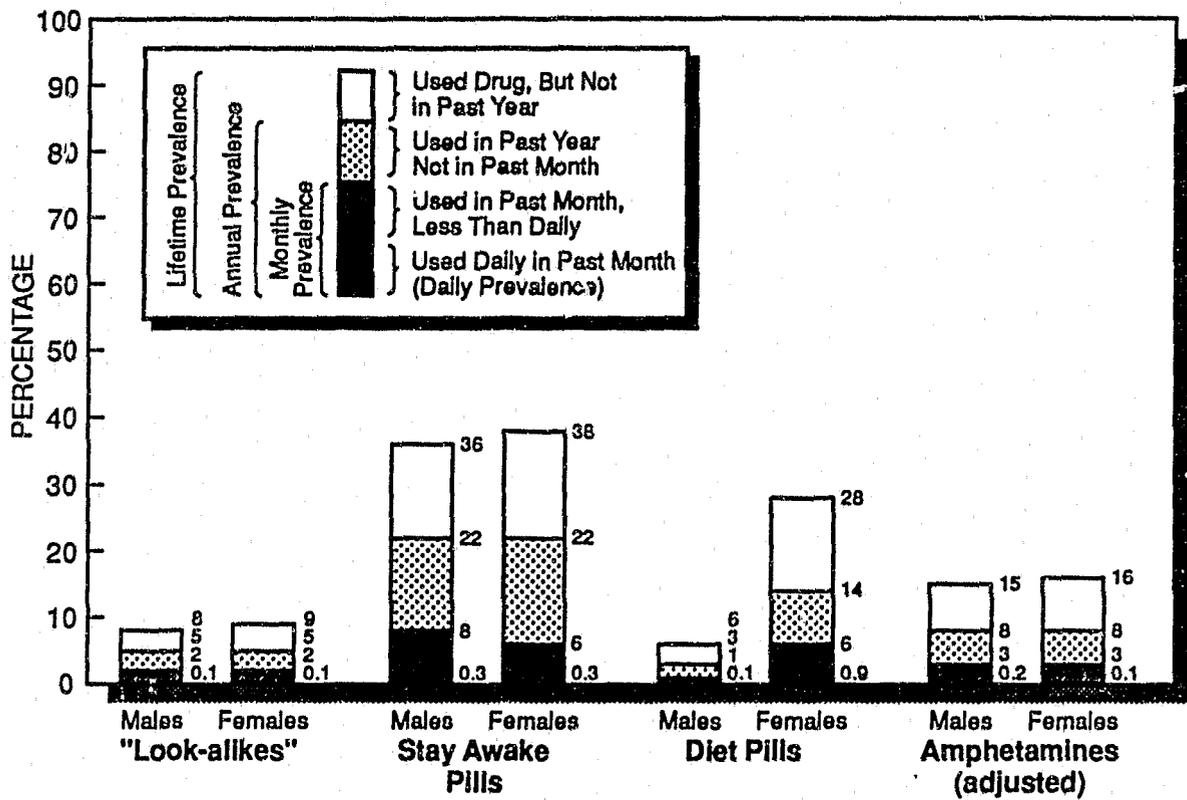
- The use of all of the nonprescription stimulants (i.e., *diet pills*, *stay-awake pills*, and "*look-alikes*") is substantially higher among those who have had experience with the use of illicit drugs than among those who have not, and highest among those who have become most involved with illicit 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
<i>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?</i>												
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
<i>Q. How old were you when you first smoked marijuana or hashish that frequently?</i>												
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
<i>Q. How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?</i>												
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
<i>Q. Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?</i>												
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	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
N =	(2448)	(1178)	(1166)	(565)	(1685)	(466)	(650)	(820)	(511)	(588)	(1170)	(689)

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, 6.5% 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	'90-'91 change	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	18.3	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.G. (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 glamorized 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.

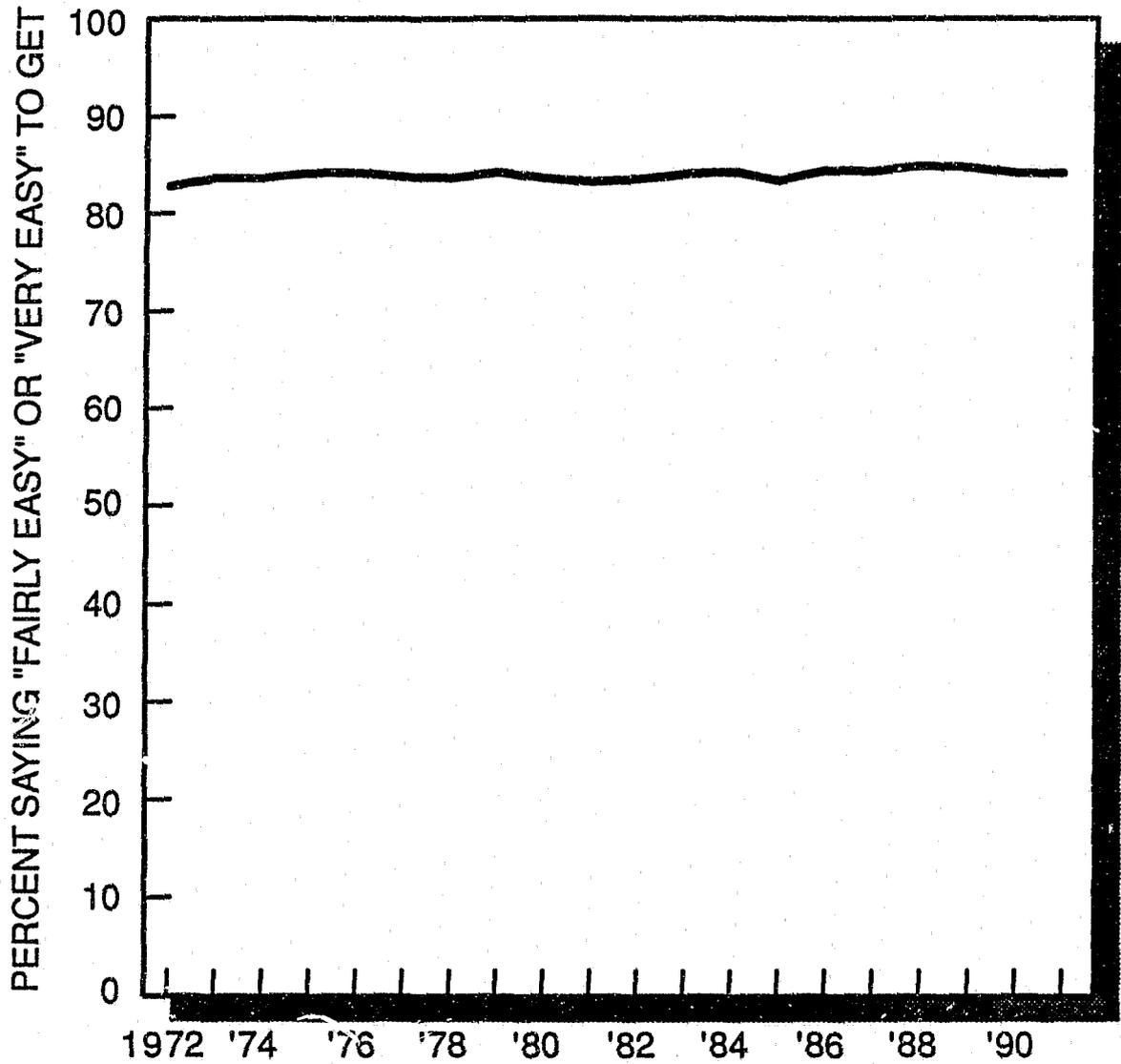
Extrapolating from the household surveys. The second method of estimating drug use among dropouts was by comparing the household survey data on dropouts with the data from those remaining in school. We conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys. 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) 83-1263). 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.

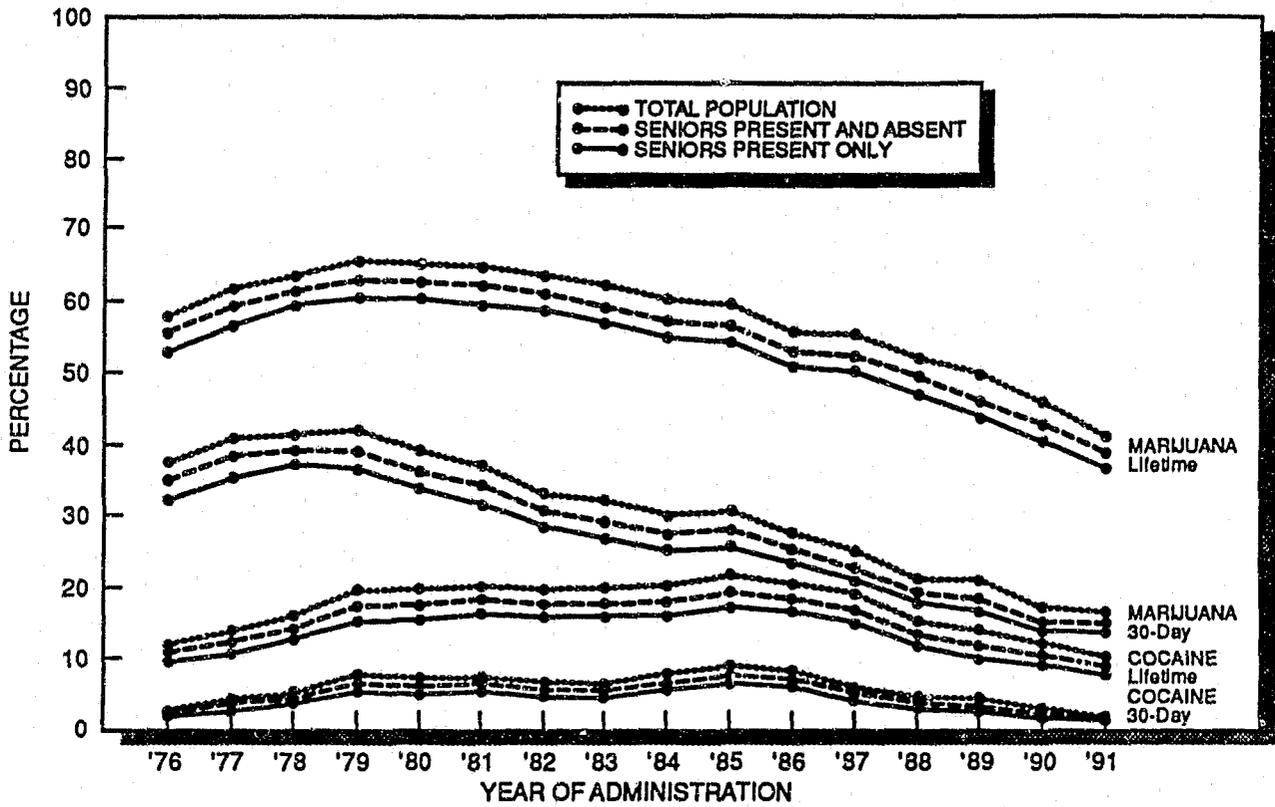
Effects of omitting dropouts in trend estimates. Whether the omission of dropouts affects the estimates of *trends* in prevalence rates is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier 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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**SMOKING, DRINKING, AND ILLICIT DRUG USE
AMONG AMERICAN SECONDARY SCHOOL STUDENTS,
COLLEGE STUDENTS, AND YOUNG ADULTS, 1975-1991**

**Volume II
College Students and Young Adults**

**U.S. Department of Justice
National Institute of Justice**

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Volume II
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by

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Preface

This is the second of two volumes presenting the results of the 1991 Monitoring the Future surveys. In the past, the results of both the high school senior surveys and follow-up surveys of panels drawn from previous graduating senior classes have been presented in the same volume. However, this causes a delay in reporting the findings from seniors because the follow-up data collections are not completed until the fall of each year, whereas the senior data are collected by June. Senior data, and beginning in 1991, data from 8th and 10th grade students, can be presented earlier with publication of two volumes. There are many readers, in fact, who are interested only in these results from secondary school students. In addition, the growing awareness of drug use on the nation's campuses has resulted in an increasing number of readers who are interested in the results from college students, and for whom the results of seniors are less relevant. They can now order Volume II separately. Note that to prevent confusion in referencing, tables and figures are numbered sequentially across the two volumes, as they were in the past in the combined volume.

ABBREVIATED TABLE OF CONTENTS

Volume II

	<u>Page</u>
<i>Volume I Abbreviated Contents</i>	vii
<i>Detailed Contents</i>	ix
<i>List of Tables</i>	xiii
<i>List of Figures</i>	xv
Chapter 11 Introduction to Volume II	1
Chapter 12 Overview of Key Findings	5
Chapter 13 Study Design and Procedures	19
Chapter 14 Prevalence of Drug Use Among Young Adults	29
Chapter 15 Trends in Drug Use Among Young Adults	71
Chapter 16 Attitudes and Beliefs About Drugs Among Young Adults	105
Chapter 17 The Social Milieu for Young Adults	117
Chapter 18 Prevalence of Drug Use Among College Students	137
Chapter 19 Trends in Drug Use Among College Students	147

ABBREVIATED TABLE OF CONTENTS

Volume I

	<u>Page</u>
<i>Detailed Contents</i>	v
<i>List of Tables</i>	ix
<i>List of Figures</i>	xiii
<i>Chapter 1</i> Introduction	1
<i>Chapter 2</i> Overview of Key Findings	7
<i>Chapter 3</i> Study Design and Procedures	21
<i>Chapter 4</i> Prevalence of Drug Use Among Eighth, Tenth, and Twelfth Grade Students	33
<i>Chapter 5</i> Trends in Drug Use Among High School Seniors	71
<i>Chapter 6</i> Use at Earlier Grade Levels	115
<i>Chapter 7</i> Degree and Duration of Drug Highs	145
<i>Chapter 8</i> Attitudes and Beliefs about Drugs	153
<i>Chapter 9</i> The Social Milieu	177
<i>Chapter 10</i> Other Findings from the Study	205
<i>Appendix</i> Estimates Adjusted for Absentees and Dropouts	225

DETAILED CONTENTS

Volume II

	<u>Page</u>
Chapter 11 Introduction to Volume II	1
College Students	1
Young Adults	2
General Purposes of the Research	2
Chapter 12 Overview of Key Findings	5
Trends in Illicit Drug Use	5
College-Noncollege Differences	9
Male-Female Differences	10
Trends in Alcohol Use	10
College-Noncollege Differences	11
Male-Female Differences	11
Trends in Cigarette Smoking	11
Age and Cohort-Related Differences	12
College-Noncollege Differences	12
Male-Female Differences	13
Drug Use in Eighth and Tenth Grades	13
Racial/Ethnic Comparisons	14
Summary and Conclusions	15
Chapter 13 Study Design and Procedures	19
Research Design and Procedures for the Surveys of Seniors	19
Research Design and Procedures for the Surveys of Eighth and Tenth Graders	20
Research Design and Procedures for the Follow-Up Surveys of Seniors	21
Representativeness and Validity	23
Validity of the Measures of Self-Reported Drug Use	24

YOUNG ADULTS POST-HIGH SCHOOL

Chapter 14	Prevalence of Drug Use Among Young Adults	29
	A Note on Lifetime Prevalence Estimates	29
	Prevalence of Drug Use in 1991 as a Function of Age	30
	Prevalence Comparisons for Subgroups of Young Adults	55
	Sex Differences	55
	Regional Differences	58
	Differences Related to Population Density	59
Chapter 15	Trends in Drug Use Among Young Adults	71
	Trends in Prevalence through 1991	71
	Trends for Important Subgroups of Young Adults	74
	Sex Differences in Trends	74
	Regional Differences in Trends	100
	Trend Differences Related to Population Density	101
Chapter 16	Attitudes and Beliefs About Drugs Among Young Adults .	105
	Perceived Harmfulness of Drugs	105
	Beliefs in 1991 About Harmfulness	105
	Trends in Perceived Harmfulness	107
	Personal Disapproval of Drug Use	111
	Extent of Disapproval in 1991	111
	Trends in Disapproval	112
	A Further Comment: Cohort Differences and Implications for Prevention	115
Chapter 17	The Social Milieu for Young Adults	117
	Peer Norms as Perceived by Young Adults	117
	Current Perceptions of Friends' Attitudes	117
	Trends in Peer Norms	119
	Exposure to Drug Use by Friends and Others	120
	Exposure to Drug Use in 1991	120
	Trends in Exposure to Drug Use	125
	Perceived Availability of Drugs	126
	Perceived Availability in 1991	129
	Trends in Perceived Availability	129

COLLEGE STUDENTS

<i>Chapter 18</i>	Prevalence of Drug Use Among College Students	137
	Prevalence of Drug Use in 1991	138
	Sex Differences in Prevalence	140
<i>Chapter 19</i>	Trends in Drug Use Among College Students	147
	Trends in Prevalence 1980-1991	147
	Sex Differences in Trends	156

LIST OF TABLES

Volume II

	<u>Page</u>
YOUNG ADULTS POST-HIGH SCHOOL	
35. Prevalence of Use of Various Types of Drugs, by Sex: Among Respondents of Modal Age 19-32	56
36. Lifetime Prevalence of Use of Various Types of Drugs, by Subgroups: Among Respondents of Modal Age 19-32	61
37. Annual Prevalence of Use of Various Types of Drugs, by Subgroups: Among Respondents of Modal Age 19-32	64
38. Thirty-Day Prevalence of Use of Various Types of Drugs, by Subgroups: Among Respondents of Modal Age 19-32	67
39. Thirty-Day Prevalence of <u>Daily</u> Use of Marijuana, Alcohol, and Cigarettes, by Subgroups: Among Respondents of Modal Age 19-32	70
40. Trends in Lifetime Prevalence of Various Types of Drugs: Among Respondents of Modal Age 19-28	75
41. Trends in Annual Prevalence of Various Types of Drugs: Among Respondents of Modal Age 19-28	76
42. Trends in Thirty-Day Prevalence of Various Types of Drugs: Among Respondents of Modal Age 19-28	77
43. Trends in Thirty-Day Prevalence of <u>Daily</u> Use of Various Types of Drugs: Among Respondents of Modal Age 19-28	78
44. Trends in Annual and Thirty-Day Prevalence of an Illicit Drug Use Index: Among Respondents of Modal Age 19-28	79
45. Trends in Perceived Harmfulness of Drugs: Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30	108
46. Trends in Proportions Disapproving of Drug Use: Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30	113
47. Trends in Proportion of Friends Disapproving of Drug Use: Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30	118
48. Trends in Proportion of Friends Using Drugs: Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30	121

49. Trends in Exposure to Drug Use: Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30	127
50. Trends in Reported Availability of Drugs: Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30	131

COLLEGE STUDENTS

51. Lifetime Prevalence for Various Types of Drugs: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School . . .	141
52. Annual Prevalence for Various Types of Drugs: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School . . .	142
53. Thirty-Day Prevalence for Various Types of Drugs: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School	143
54. Daily Prevalence for Marijuana, Cocaine, Stimulants, Alcohol, and Cigarettes: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School	144
55. Lifetime, Annual and Thirty-Day Prevalence of an Illicit Drug Use Index: Full-Time College Students vs. Others Among Respondents 1-4 Years Beyond High School	145
56. Trends in Lifetime Prevalence of Various Types of Drugs: Among College Students 1-4 Years Beyond High School	148
57. Trends in Annual Prevalence of Various Types of Drugs: Among College Students 1-4 Years Beyond High School	149
58. Trends in Thirty-Day Prevalence of Various Types of Drugs: Among College Students 1-4 Years Beyond High School	150
59. Trends in Thirty-Day Prevalence of <u>Daily</u> Use of Marijuana, Cocaine, Stimulants, Alcohol, and Cigarettes: Among College Students 1-4 Years Beyond High School	151
60. Trends in Lifetime, Annual and Thirty-Day Prevalence for an Illicit Drug Use Index: Among College Students 1-4 Years Beyond High School by Sex	152

LIST OF FIGURES

Volume II

Page

YOUNG ADULTS POST-HIGH SCHOOL

31-49. Lifetime, Annual, and Thirty-Day Prevalence Among Young Adults, 1991, by Age Group

31. Any Illicit Drug	35
32. Any Illicit Drug Other than Marijuana	36
33. Marijuana	37
34. Stimulants	38
35. Cocaine	39
36. Crack Cocaine	40
37. Hallucinogens	41
38. LSD	42
39. Hallucinogens other than LSD	43
40. Inhalants	44
41. Barbiturates	45
42. Other Opiates	46
43. Tranquilizers	47
44. MDMA	48
45. Crystal Methamphetamine	49
46. Steroids	50
47. Heroin	51
48. Alcohol	
a. Various Prevalence Rates	52
b. Prevalence of Daily Use and Binge Drinking	53
49. Cigarettes (annual, 30-day, daily, half-pack)	54

50-64. Trends in Annual Prevalence Among Young Adults by Age Group

50. Any Illicit Drug	80
51. Any Illicit Drug Other than Marijuana	81
52. Marijuana	
a. Annual	82
b. Thirty-Day and Daily	83
53. Inhalants	84
54. Hallucinogens	85
55. LSD	86
56. Hallucinogens Other than LSD	87
57. Cocaine	88
58. Crack Cocaine	89
59. Other Opiates	90
60. Stimulants	91
61. Barbiturates	92

62. Tranquilizers	93
63. Alcohol	
a. Annual	94
b. Thirty-Day and Daily	95
c. Two-Week Prevalence of Five or More Drinks in a Row ..	96
64. Cigarettes	
a. Thirty-Day and Daily	97
b. Thirty-Day Use of Half-Pack a Day or More	98

COLLEGE STUDENTS

65-78. Trends in Annual Prevalence Among College Students vs. Others: One to Four Years Beyond High School

65. Any Illicit Drug	158
66. Any Illicit Drug Other than Marijuana	159
67. Marijuana	
a. Annual	160
b. Daily	161
68. Inhalants	162
69. Hallucinogens	163
70. LSD	164
71. Hallucinogens Other than LSD	165
72. Cocaine	166
73. Other Opiates	167
74. Stimulants	168
75. Barbiturates	169
76. Tranquilizers	170
77. Alcohol	
a. Annual	171
b. Daily	172
c. Two-Week Prevalence of Five or More Drinks in a Row ..	173
78. Cigarettes	
a. Thirty-Day	174
b. Daily	175
c. Thirty-Day Use of Half-Pack a Day or More	176

Chapter 11

INTRODUCTION TO VOLUME II

This is the second volume in a two volume set reporting the results of the 1991 surveys, as well as all of the previous surveys, from the Monitoring the Future study of American secondary school students and young adults. Monitoring the Future is a long-term research program conducted at the University of Michigan's Institute for Social Research under a series of research grants from the National Institute on Drug Abuse. It is comprised of an ongoing series of annual national surveys of American *high school seniors* begun in 1975—the results of which are presented in Volume I—as well as a series of annual *follow-up surveys* of representative samples of the previous participants from each high school senior class going back to the Class of 1976. In 1991, the study also began to survey eighth and tenth grade students; the results from these surveys are included in Volume I. This volume presents the results of the follow-up surveys from 1977 through 1991, encompassing the graduating classes of 1976 through 1990 as they have progressed through young adulthood.

In order for this volume to stand alone, some material from Volume I is repeated here for the reader who does not have it. Specifically, Chapter 12 in this volume is the same as Chapter 2, Volume I, and provides an overview of the key findings presented in both volumes. Chapter 13, Study Design and Procedures, also draws almost entirely from Volume I, Chapter 3. Therefore, the reader who has already read Volume I will want to skip over these chapters. Otherwise, the content of these two volumes does not overlap.

COLLEGE STUDENTS

Of particular importance, the follow-up samples in Monitoring the Future provide very good coverage of the national college student population since 1980. College students are a difficult population to study; this is because they are not well covered in normal household surveys, which exclude dormitories, fraternities, and sororities from the universe covered. Further, it requires large and cumbersome institution-based samples to get accurate national representation of college students, since there is such great heterogeneity in the student populations in those institutions. The current study, which in essence draws the college sample in senior year of high school, has considerable advantages for generating a broadly representative sample of the college students to emerge from each graduating cohort. As defined here, the college student population is comprised of all full-time students enrolled in a two- or four-year college in March during the year of the survey. More will be said about this sample definition in Chapters 13 and 18. Results on the *prevalence* of drug use among college students in 1991 are reported in Chapter 18, and Chapter 19 presents the *trends* in substance use among college students over the past eleven years.

YOUNG ADULTS

The young adult sample reported here, which includes the college students, is comprised of representative samples from each graduating class since 1976, all surveyed in 1991. Since 18 is the modal age of high school seniors, the young adults covered here correspond to modal ages 19 through 33. In this volume we have re-weighted the respondents to correct for the effects of panel attrition on measures such as drug use; however, we are less able to make accurate adjustments for the absence of high school dropouts who were not included in the original high school senior sample. Because nearly all college students have completed high school, the omission of dropouts should have almost no effect on the college student estimates, but this omission does have an effect on the estimates for entire age groups. Therefore, the reader is cautioned that the omission of the 15% to 20% of each cohort who drop out of high school will make the drug use estimates given here for the various young adult age bands somewhat low for the age group as a whole. The proportional effect may be greatest for some of the most dangerous drugs such as heroin and crack; and also for cigarettes—the use of which is most correlated with educational aspirations and attainment.

GENERAL PURPOSES OF THE RESEARCH

Chapter 1, Volume I, discusses the research purposes of the Monitoring the Future study at some length; they are only sketched briefly here. One purpose is to serve a social monitoring or social indicator function, intended to characterize accurately the levels and trends in certain behaviors, attitudes, beliefs, and conditions in the population. Another purpose is to develop knowledge which increases our understanding of why changes in these behaviors, attitudes, etc. are taking place. (In the health-related disciplines such work is usually labeled as epidemiology.) These two purposes are addressed in the current series of volumes. There are a number of other purposes for the research, however, which are addressed through other types of publications and professional products.¹ They include: helping to determine what types of young people are at greatest risk for developing various patterns of drug abuse; gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how those orientations are shifting over time; determining the immediate and more general aspects of the social environment 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 during this period of development; distinguishing such "age effects" from cohort and period effects in determining drug use; determining the effects of social legislation on various types of substance use; and determining the changing connotations of drug use and changing patterns of multiple drug use among youth. We believe that the differentiation of period, age, and cohort effects in substance use of various types has been a particularly important contribution of the project; its cohort-sequential research design is especially well-suited to allow such differentiation. Readers interested in publications dealing with any of these other areas, or

¹See Johnston, L.D., O'Malley, P.M., Bachman, J.G., and Schulenberg, J. (1992). *The aims, objectives, and rationale of the Monitoring the Future study*. Monitoring the Future Occasional Paper No. 34. Ann Arbor, MI: Institute for Social Research.

wishing to receive a copy of the brochure on "Selected Publications" available from the study, should write the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248.

Chapter 12

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 19–33 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 on substance use, we present detailed prevalence and trend results (since 1980) in this volume. 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 Volume I of this report discusses the likely impact of omitting dropouts from the sample coverage.

A number of important findings emerge from these three national populations—secondary school students, college students, and all young adults through age 33 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 secondary school students are presented in Volume I of this report.

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 nearly 80% 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 dropped 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 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.

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

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. In 1990, however, perceived availability dropped by about 4% for the first time among both seniors and young adults, and continued to decline significantly in 1991.

As with all the illicit drugs, lifetime cocaine prevalence climbs with age, actually exceeding 40% by age 29. 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* also fell among seniors (down 0.2% to 2.0%) and young adults (down 0.2% to 2.3%). It remained at 1990 levels among college students (1.8%). For seniors, this represents more than a four-fifths 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 then, 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 prior to 1986 are not 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 19 to 22 year olds, where annual prevalence is up by about one-third, to 21%.

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 0.2%.
- The annual prevalence of *heroin* use has been very steady since 1979 among seniors at 0.4% 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, 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 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, MDMA*** (3,4-methylenedioxymethamphetamine, or “ecstasy”), ***heroin, 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, barbiturates, and tranquilizers***. higher rate of use for ***MDMA***.

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 frequent users of illicit drugs than females occur for *stimulant* and *tranquilizer* use in high school, where females are at the same level. The sexes also attain near parity on *MDMA*, *other opiates*, *ice*, *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. 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 Volume I, 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 eighth grade 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, Volume I 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 of Volume I 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 racial/ethnic 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 marijuana*. Even for high school seniors these proportions still stand at 44% and 27%, respectively.

By age 29, 40% 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 4.8% 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 almost 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 13

STUDY DESIGN AND PROCEDURES

The research design, sampling plans, and field procedures used in both the in-school surveys of secondary school students, 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.

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 Volume I addresses the likely effects of the exclusion of dropouts on estimates of prevalence of drug use and trends in drug use among the entire age cohort; the reader is referred to it for a more detailed discussion of this issue.

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 of Volume I.

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 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 80% 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 63%.

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

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

For most follow-up cohorts, the numbers of cases on single-form questions are only one-fifth the size of the sample based on core questions. Beginning with the class of 1989, a sixth form was introduced in senior year, so data from the more recent classes will have N's one-sixth of the total sample size. In the follow-up studies, single form samples, from a cohort are too small to make reliable estimates; therefore, in those cases where they are reported, the data from several adjacent cohorts (and, therefore, age groups) are combined.

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.

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.

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, Volume I). 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.

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.

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.

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.⁵

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.⁶ 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 under-reporting 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

⁵Johnston, 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.

⁶O'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.

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 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.

YOUNG ADULTS POST-HIGH SCHOOL

Chapter 14

PREVALENCE OF DRUG USE AMONG YOUNG ADULTS POST-HIGH SCHOOL

As described in more detail in the preceding chapter, the Monitoring the Future study conducts ongoing panel studies on representative samples from each graduating class, beginning with the class of 1976. Two matched panels, of roughly 1200 seniors each, are selected from each graduating class—one panel is surveyed every even-numbered year after graduation, the other is surveyed every odd-numbered year. Thus, in a given year, the study encompasses one of the panels from each of the senior classes previously participating in the study. In 1991, this meant that representative samples of the classes of 1976 through 1990—or fifteen previous classes in all—were surveyed by mail.

In this section we present the results of that follow-up survey—results which should accurately characterize the approximately 85% of young adults in the class cohorts one to fifteen years beyond high school who are high school graduates. Their modal ages are between 19 and 33. The high school dropout segment missing from the senior year surveys is, of course, missing from all of the follow-up surveys, as well.

Figures 31 through 49 contain the 1991 *prevalence* data by age, through those who are fourteen years beyond high school (modal age of 32). Later figures contain the *trend* data for each age group, including seniors and graduates who are up to ten years past high school (modal age of 28). With the exception of the seniors, age groups have been paired into two-year intervals in both sets of figures in order to increase the number of cases, and thus the reliability, for each point estimate. The trends are based on a more delimited age band in order to cover more years. For obvious reasons, trends on the youngest age bands can be calculated for the longest period of time. As the years pass and the class cohorts get older, new age groups are added to the figures.

A NOTE ON LIFETIME PREVALENCE ESTIMATES

In Figures 31 through 49 two different estimates of lifetime prevalence are provided. One estimate is based on the respondent's most recent statement of whether he or she ever used the drug in question (second bar from the left). The other estimate takes into account the respondent's answers regarding lifetime use gathered in *all* of the previous data collections in which he or she participated (the left-most bar).⁷ The former type of estimate is most commonly presented in epidemiological studies, since it can be made based on the data from a single cross-sectional survey. The latter is pos-

⁷To be categorized as one who has used the drug based on all past answers regarding that drug, the respondent has either (a) to have reported past use in the most recent data collection and/or (b) to have reported some use in his or her lifetime on at least two earlier occasions. Because respondents in the age groups of 18 and 19-20 cannot have their responses adjusted on the basis of two earlier occasions, adjusted prevalences are reported only for ages 21 and older.

sible only when panel data have been gathered and a respondent can be classified as having used a drug at sometime in his or her life (based on earlier answers) even though he or she no longer indicates lifetime use in the most recent survey.

The divergence of these two estimates as a function of age shows that there is more inconsistency as time passes. (Obviously there is more opportunity for inconsistency as the number of data collections increases.) Our judgment is that "the truth" lies somewhere between the two estimates: The lower estimate may be depressed by tendencies to forget, "forgive," or conceal earlier use, and the upper estimate may include earlier response errors or incorrect definitions of drugs which respondents appropriately corrected in later surveys. (It should be noted that a high proportion of those giving inconsistent answers across time had earlier reported having used only once or twice in their lifetime.) As we have reported elsewhere, cross-time stability of self-reported usage measures, which take into account the number of occasions of self-reported use, is still very high.⁸

It also should be noted that the divergence between the two lifetime prevalence estimates is greatest for the psychotherapeutic drugs and the derivative index of "use of an illicit drug other than marijuana," which is heavily affected by the psychotherapeutic estimates. We believe this is due to the greater difficulty for respondents in categorizing such pills with a high degree of certainty—especially if they have used them only once or twice. One would expect higher inconsistency across time, when the event (and in many of these cases it is a single event) is reported at quite different points in time with a relatively low degree of certainty. Those who have gone beyond simple experimentation with one of these drugs would undoubtedly be able to categorize them with a higher degree of certainty. Also, those who have experimented more recently (say in the past month or year) should have a higher probability of recall as well as more fresh information for accurately categorizing the drug.

We provide both estimates to make clear that a full use of respondent information provides a possible range for lifetime prevalence estimates, not a single point. However, by far the most important use of the prevalence data is to track *trends* in *current* (as opposed to lifetime) use; thus we are much less concerned about the nature of the variability in the lifetime estimates than we might otherwise be. The lifetime prevalence estimates are primarily of importance in showing the degree to which a drug class has penetrated the general population.

PREVALENCE OF DRUG USE IN 1991 AS A FUNCTION OF AGE

- For virtually all drugs, available age comparisons show a much higher lifetime prevalence for the older age groups. In fact, the figures reach impressive levels among young adults in their early thirties. For example, in 1991 the *adjusted* lifetime prevalence figures among 31 to 32 year olds reach 84% for *any illicit drug*; 63% for *any illicit drug other than marijuana*; 79% for *marijuana*; and 40% for *cocaine*, specifically. *Put another way,*

⁸O'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.

among young Americans in the cohorts which graduated high school in 1977 and 1978 only about one-sixth (16%) have never tried an illegal drug.

The 1991 survey responses, *unadjusted* for previous answers, show somewhat lower lifetime prevalence: 76% for any illicit drug, 51% for any illicit drug other than marijuana, 73% for marijuana, and 35% for cocaine.

- Despite the higher levels of *lifetime* use among older age groups, the older age groups generally show levels of *annual* or *current* use which are no higher than among high school seniors; in fact, for a number of drugs the levels reported by older respondents are lower, suggesting that the incidence of quitting has more than offset the incidence of new use after high school. (See Tables 34 to 36, as well as Figures 31 through 49.)

In analyses published elsewhere, we have looked closely at patterns of change in drug use, and have identified some post-high school experiences which contribute to declining levels of annual or current use as respondents grow older. In particular, the likelihood of being married increases with age, and we have found that marriage is consistently associated with declines in alcohol use in general, heavy drinking in particular, marijuana use, and use of other illicit drugs.⁹

- For the use of *any illicit drug*, lifetime prevalence is 84% among 31 to 32 year olds vs. 44% among the 1991 seniors; however, annual prevalence is slightly lower among those in their late twenties than among those in their late teens and early twenties (see Figure 31). Current (30-day) prevalence is constant at 14% to 17% across the entire age-band 18 to 32, however.
- A similar pattern exists for *marijuana*; that is, higher lifetime prevalence as a function of age, but somewhat lower annual prevalence during the later twenties. Thirty-day prevalence is fairly constant across the age-band at 12% to 15% (see Figure 33), and current *daily marijuana use* is now between 2% and 3%.
- The statistics on the use of *any illicit drug other than marijuana* (Figure 32) behave in a somewhat different fashion. Like marijuana and the any-illicit-drug-use index, corrected lifetime rates on this index also show an appreciable rise with age, reaching 63% among the 31 to 32 year old age group. However, both the 30-day and annual usage statistics are fairly constant

⁹Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1984). Drug use among young adults: The impacts of role status and social environment. *Journal of Personality and Social Psychology*, 47, 629-645. See also, Bachman, J.G., O'Malley, P.M., Johnston, L.D., Rodgers, W.L., and Schulenberg, J. (1992) *Changes in Drug Use during the Post-High School Years*. Monitoring the Future Occasional Paper No. 35. Ann Arbor, MI: Institute for Social Research.

across the age band. As the next several paragraphs illustrate, most of the drugs which constitute this category show a decline with age in annual prevalence. Thus, the one which shows an appreciable increase with age—namely, cocaine—must account for this constancy across age in this general category.

- Several classes of drugs show rates of current use among the older age groups proportionately much lower than among seniors. For example, in recent years *hallucinogens* (including *LSD*) have shown lower annual and 30-day prevalence rates for the older ages than for seniors (Figures 37–39). However, all of these prevalence rates are fairly low, and thus the absolute differences are quite small.
- For *stimulants* lifetime prevalence is again much higher among the older age groups (Figure 34)—reflecting the addition of many new initiates in the early twenties. However, active use as reflected in the annual prevalence figure is now lower among the older age groups. This has not always been true; the present pattern is the result of a sharper decline in use in the older ages than has occurred among seniors. These trends are discussed in the next section.
- In 1991, questions on the use of *crystal methamphetamine* (“*ice*”), are contained in two forms. Among the 19 to 32 year old respondents 0.3% reported some use in the prior year—lower than the 1.4% reported by seniors. Among the 19–24 year olds, 0.4%–0.5% reported annual use, compared to 0.2% or less among the older respondents (Figure 45).
- Questions on *methaqualone* were dropped from the follow-up questionnaires beginning in 1990; only the 1989 survey results can be referenced here. They showed lifetime prevalence appreciably higher among older age groups, but little age-related difference in annual prevalence among the post-high school age groups. High school seniors showed a slightly higher annual prevalence than the older age groups; but all ages showed very low current prevalence rates, reflecting very high rates of noncontinuation for this drug.
- *Barbiturates* are similar to stimulants (and methaqualone) in that lifetime prevalence is appreciably higher in the older ages, but slightly different in that active nonmedical use after high school has always been lower than such use during high school (Figure 41). At present current usage rates are very low in all age groups.
- *Opiates other than heroin* show age differences very similar to those seen for barbiturates—somewhat higher lifetime prevalence as a function of age but active nonmedical use consistently lower among post-high school age groups (Figure 42).

- *Tranquilizer* use, on the other hand, remains fairly stable for 30-day and annual prevalence rates across the full age band (Figure 43).
- *Cocaine* presents a unique case among the illicit drugs in that lifetime, annual, and current use *all*) are substantially higher among the older age groups. Annual and current use appear to plateau in the mid-20's and then remain fairly constant through age 32 (Figure 35). In 1991, lifetime prevalence by age 31 to 32 was 40% vs. 8% among today's high school seniors (and 12% among the 31 to 32 year old cohorts when they were seniors in the late 1970's). Annual prevalence for 31 to 32 year olds today is 7% and 30-day prevalence is 2%—again, higher than for the 1991 seniors. Clearly, cocaine is used much more frequently among people in their twenties than among those in their late teens; this fact continues to distinguish it from all of the other illicit drugs.
- With regard to *crack* use, the standard set of three prevalence questions was introduced for the first time in 1987. In 1991, lifetime prevalence reached 6% to 7% among those in their late twenties and early thirties, vs. 3.1% among seniors. However, current prevalence for the follow-up respondents is at or below that for seniors (Figure 36). On average, the follow-up respondents one to fourteen years out of high school have an annual prevalence of 1.2% vs. 1.5% among seniors, and a 30-day prevalence of 0.4% vs. 0.7% among seniors. Taken together these facts suggest that follow-up respondents have a higher rate of noncontinuation than do seniors, as is true for most other drugs.

As with the senior data, we expect that the omission of high school dropouts is likely to have a greater than average impact on the prevalence estimates for this drug.

- In the case of *alcohol*, prevalence rates generally increase for the first four years after high school, through age 21 or 22 (Figure 48a). After that, age differences vary slightly for the different prevalence periods. Lifetime prevalence, due to a "ceiling effect," changes very little after age 21 to 22. Current use (in the past 30 days) is highest among the 21 to 22 year olds and gets progressively lower for each higher age group. Even among the oldest group, 31 to 32, the current usage rate is higher than among 1991 seniors. Current *daily drinking* shows no decline after age 21-22; it remains fairly constant at 5-6% through the twenties and early thirties.
- *Occasions of heavy drinking* in the two weeks prior to the survey shows the largest differences among the age groups (Figure 48b). Twenty-one to 22 year olds show the highest prevalence of such heavy drinking (40%) among all respondents, but among those eleven or more years beyond high school rates actually are lower than those observed in senior year (25% vs. 30% among seniors). We

have interpreted this curvilinear relationship as reflecting an age effect (not a cohort effect), because it seems to replicate across years and different graduating classes.¹⁰

- **Cigarette smoking** shows an unusual pattern of age-related differences (Figure 49). On the one hand, current smoking (30-day prevalence) is about the same among those in their twenties as among high school seniors, reflecting the fact that relatively few new people are recruited to smoking after high school. On the other hand, smoking at heavier levels—such as smoking daily or smoking half-a-pack daily—is considerably higher among the older age groups, reflecting the fact that many who were previously moderate smokers move into a pattern of heavier consumption during their twenties.¹¹ While slightly more than a third of the current smokers in high school smoke at the rate of half-pack a day or more, three-quarters of the current smokers in the 31 to 32 age group do so.
- **MDMA (“ecstasy”)** is a drug that recently has come to the fore. It was included for the first time in the 1989 follow-up surveys to assess how widespread its use had become among young adults. Questions about its use were not asked of high school students, primarily because we were concerned that its alluring name and relatively low prevalence might have the effect of stimulating interest in high school students.

Relatively few 1991 followup respondents report any use of **MDMA**: among 19 to 32 year olds 3.2% have ever tried it and only 1 in 1000 (0.1%) have used in the prior 30 days (Figure 44). Annual use is highest among 21 to 24 year olds (about 1.0%) vs. 25 to 30 year olds (0.6%) and those over 30 (0.2%). Even lifetime use is slightly higher in the early- to mid-20's than in the late 20's due to the recency of its introduction and its tendency to be taken up among those of college age.

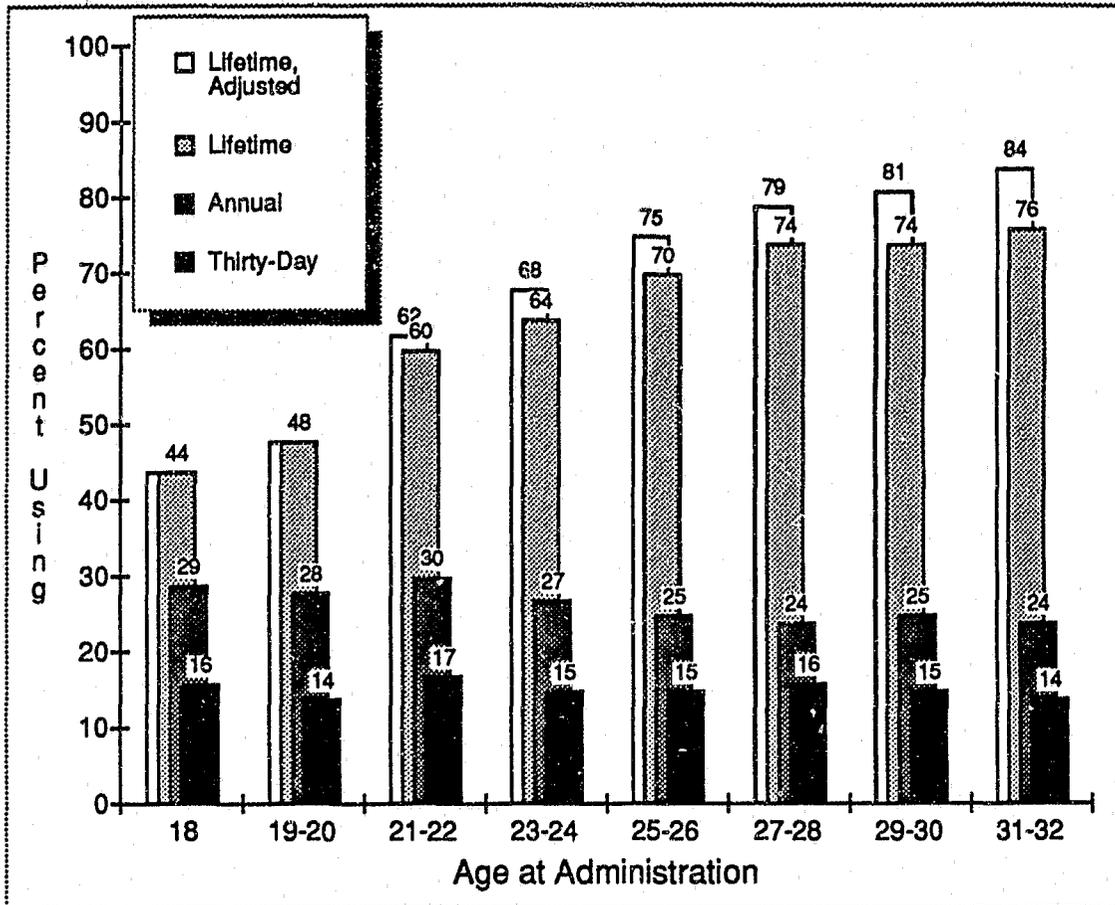
- Questions about use of **steroids** were added in 1989 to one form only, making it more difficult to determine age-related differences with much accuracy. Overall, 1.3% of 19 to 32 year olds in 1991 reported having used steroids in their lifetime. Annual and 30-day use levels were very low, at 0.4% and 0.2%, respectively. (See Tables 36 to 38).

¹⁰O'Malley, P.M., Bachman, J.G., & Johnston, L.D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976-1986. *American Journal of Public Health*, 78, 1315-1321.

¹¹Because age is confounded with class cohort, and because we have established that cigarette smoking shows strong cohort effects (enduring differences among cohorts), one must be careful in interpreting age-related differences in a cross-sectional sample as if they were due only to age effects (i.e. changes with age consistently observable across cohorts). However, multivariate analyses conducted on panel data from multiple cohorts do show a consistent age effect of the type mentioned here (O'Malley, Bachman, & Johnston, (1988), *op. cit.*).

FIGURE 31

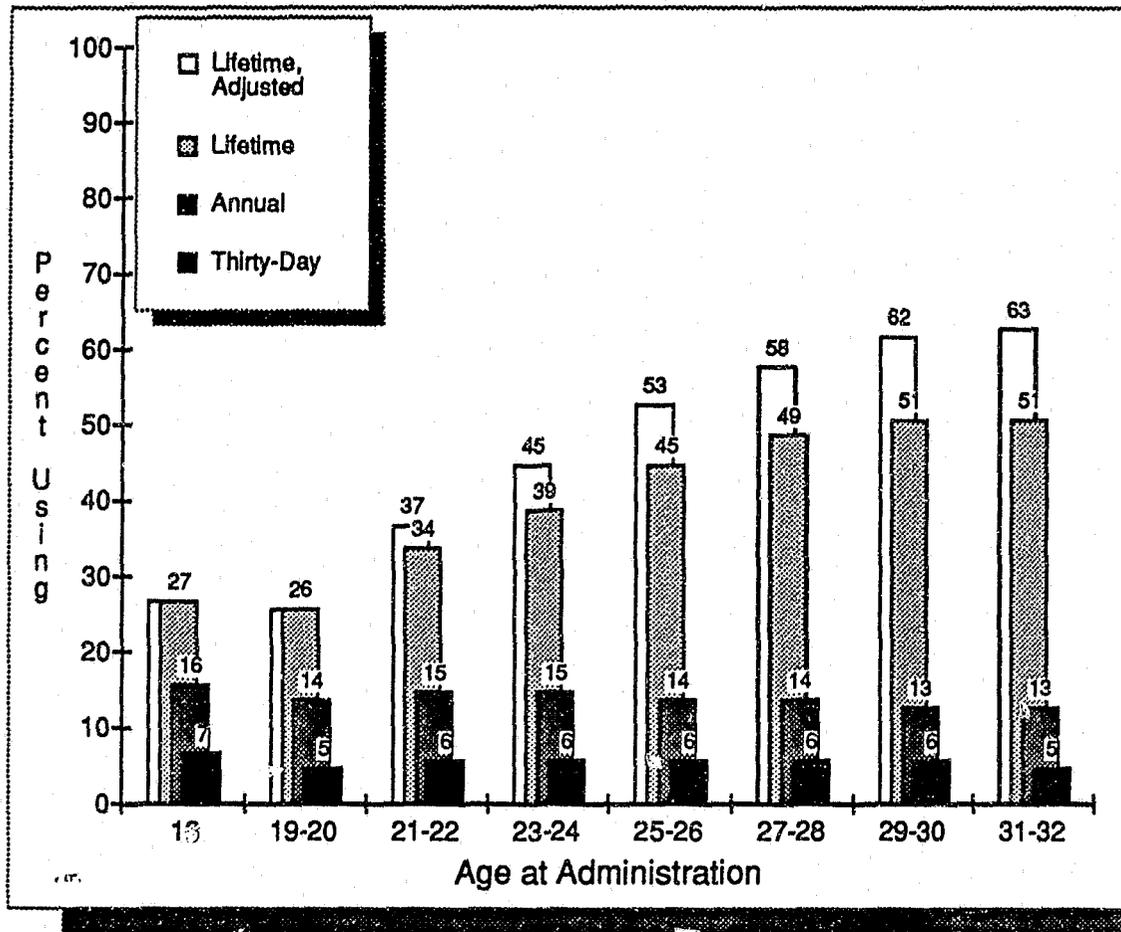
Any Illicit Drug: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 32

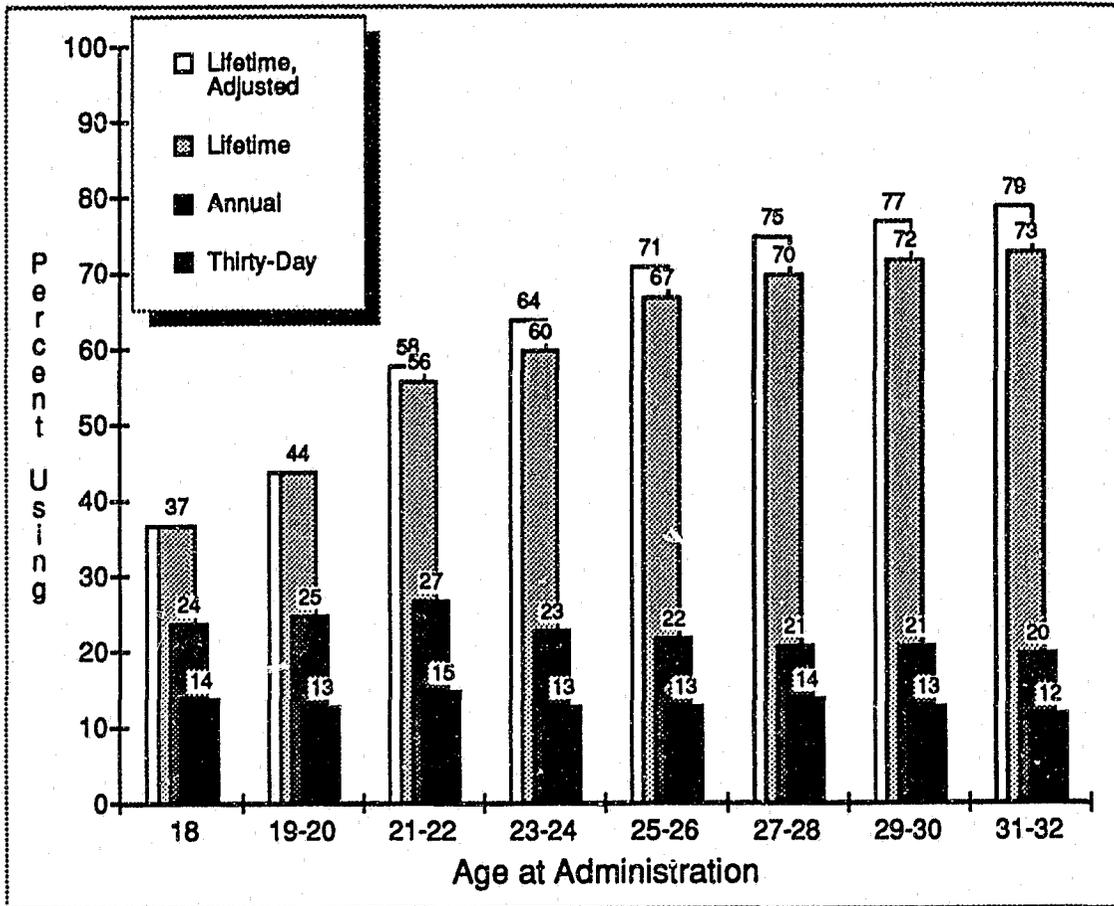
Any Illicit Drug Other than Marijuana: Lifetime, Annual, and
Thirty-Day Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 33

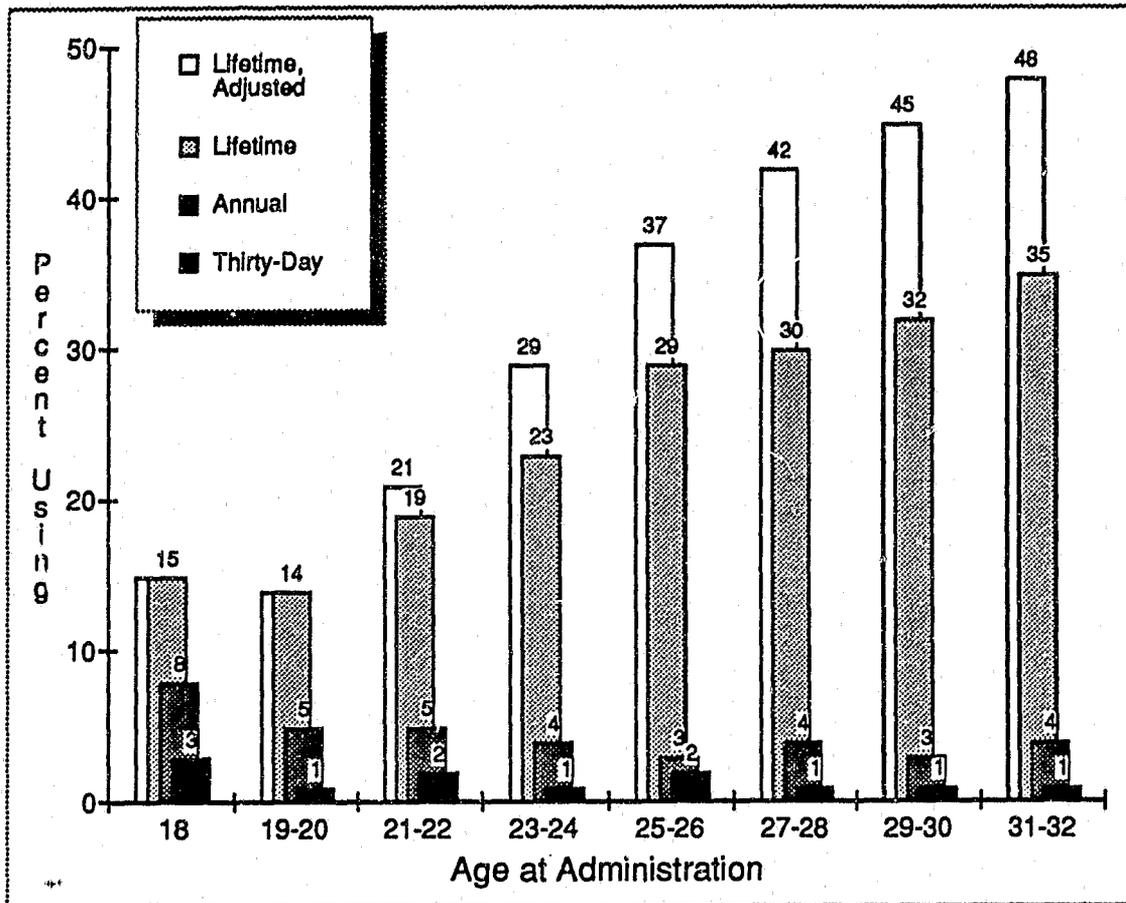
Marijuana: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 34

Stimulants: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group

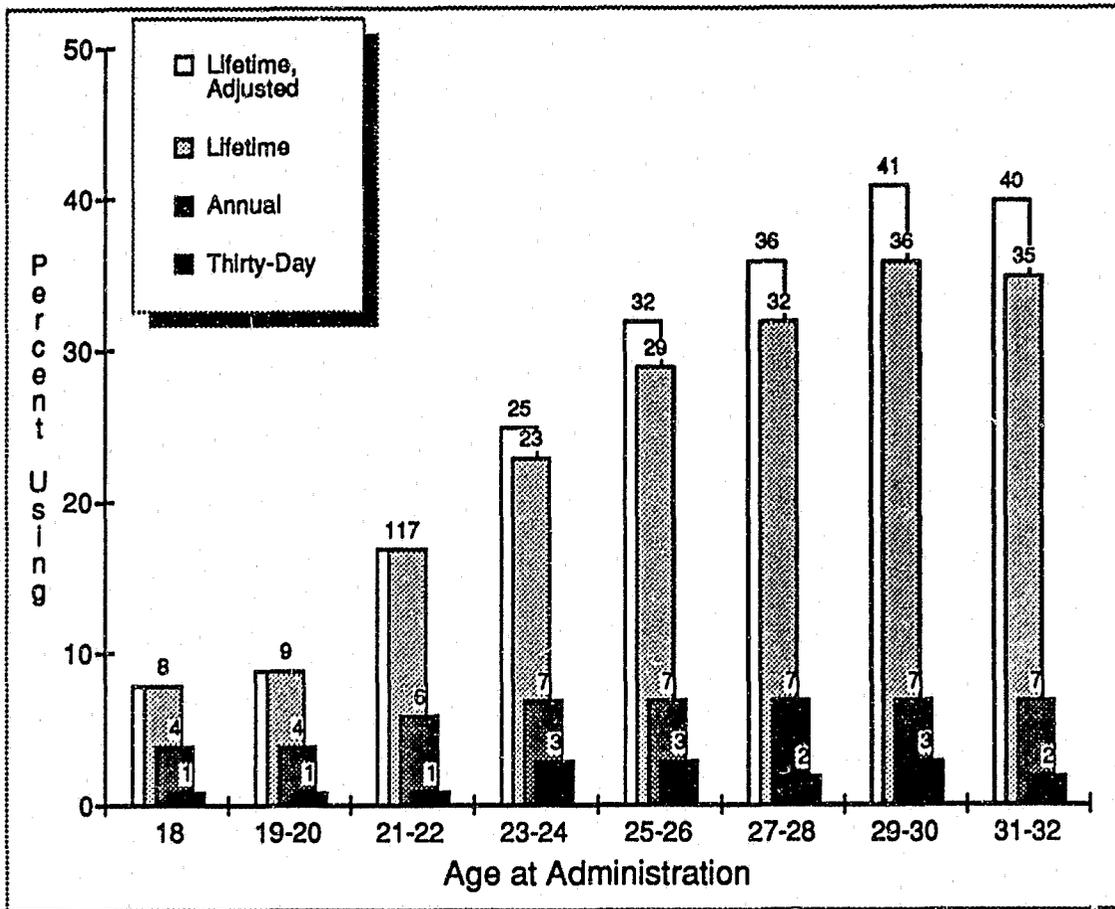


NOTE: Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

^aThe divergence between the two lifetime prevalence estimates is due in part to the change in question wording initiated in 1982/1983, which clarified the instruction to omit non-prescription stimulants.

FIGURE 35

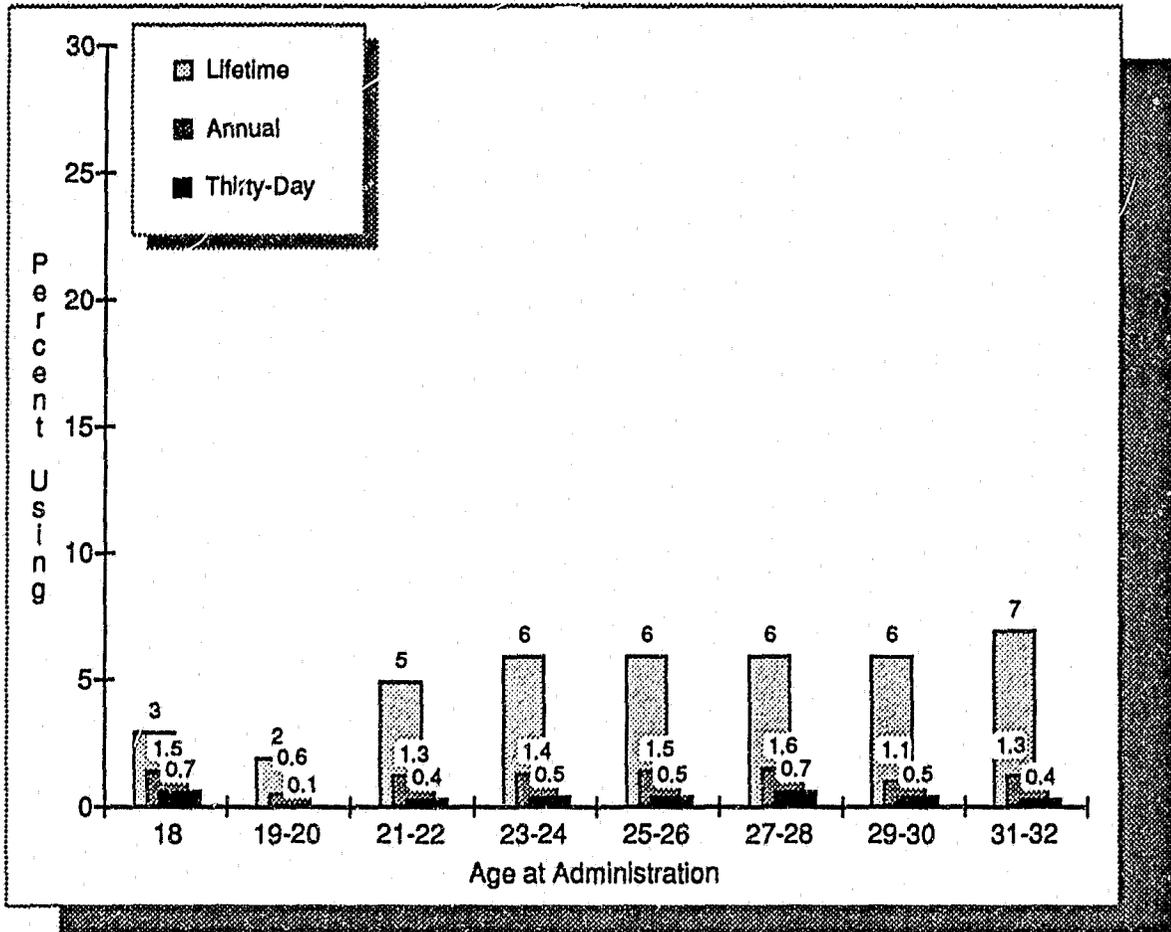
Cocaine: Lifetime, Annual, and Thirty-Day Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 36

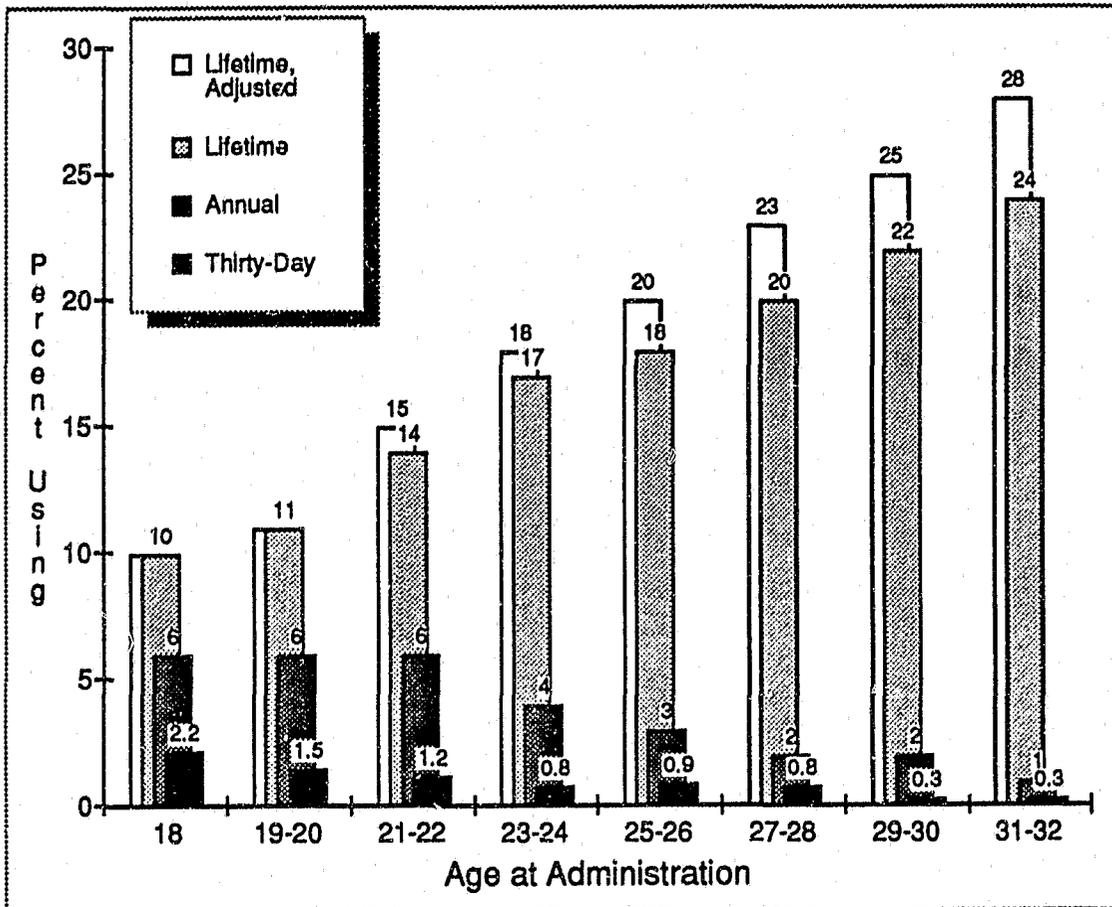
**Crack: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group**



NOTE: Adjusted lifetime prevalence estimates are not presented because the first complete measures of crack use were not introduced until 1987.

FIGURE 37

Hallucinogens*: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group

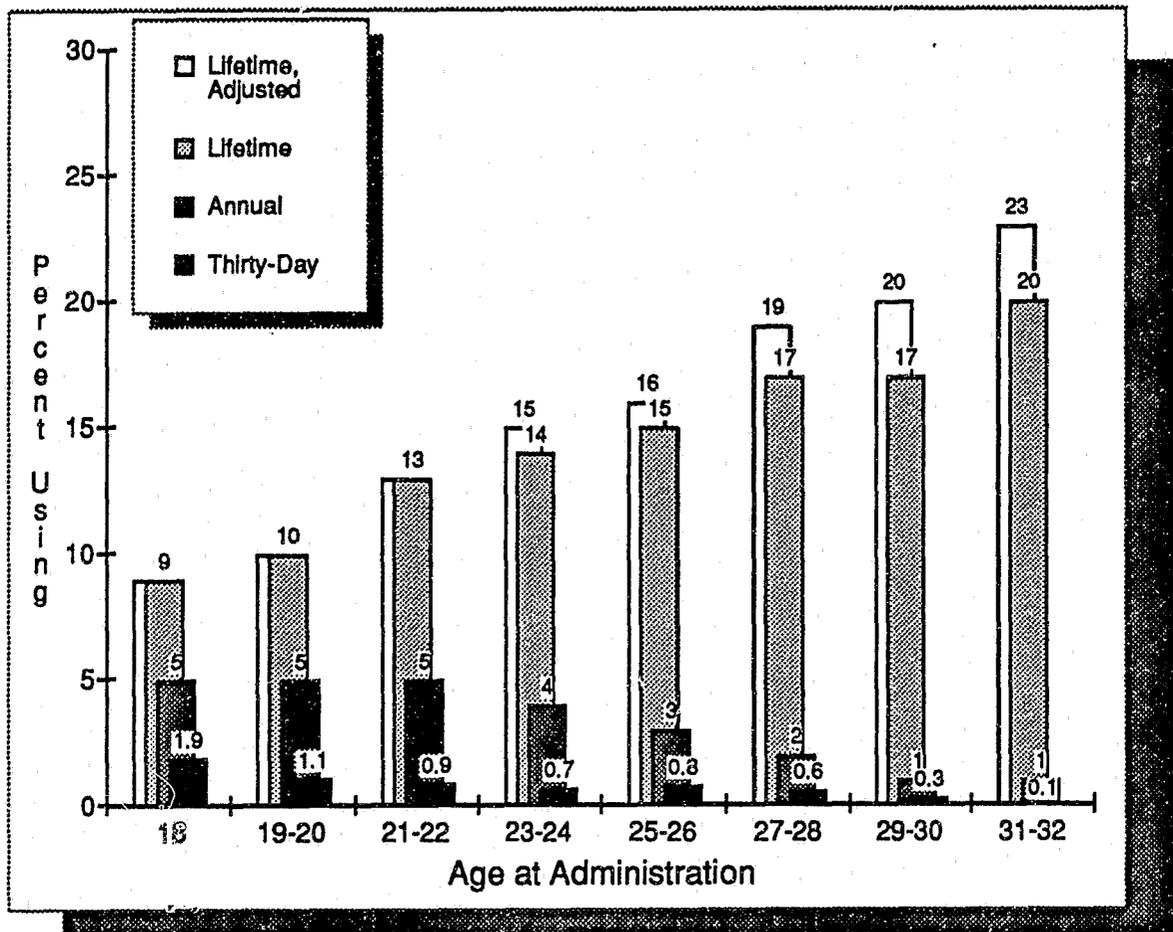


NOTE: Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

*Unadjusted for the possible underreporting of PCP.

FIGURE 38

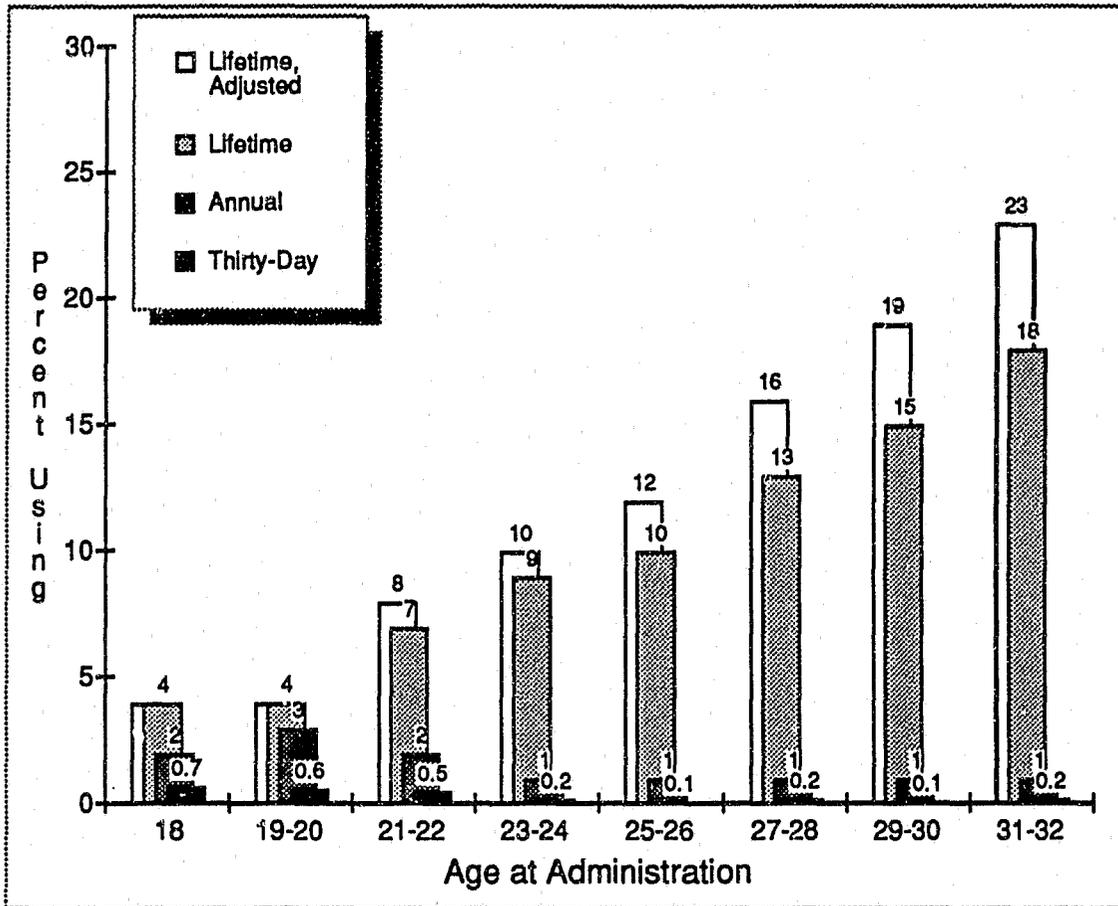
LSD: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 39

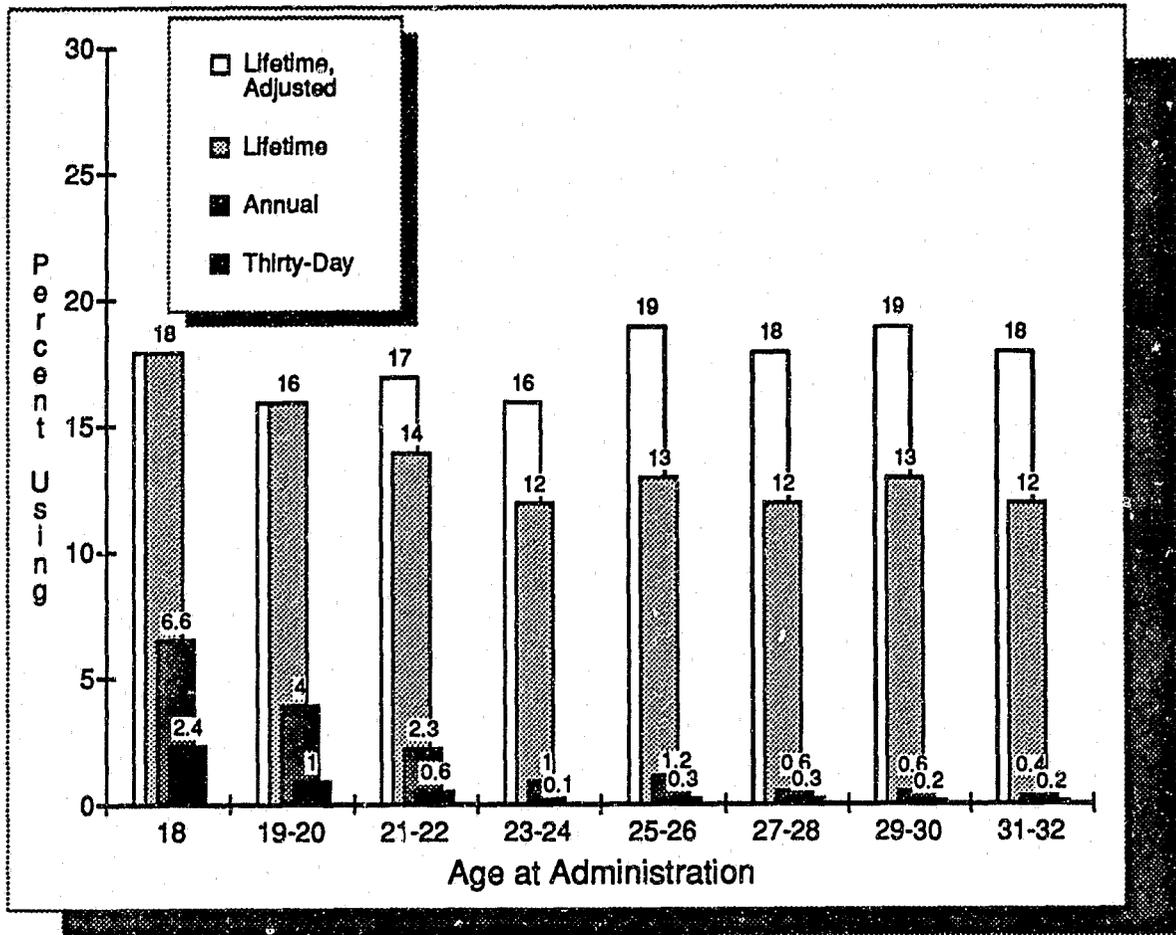
Hallucinogens Other than LSD: Lifetime, Annual, and
Thirty-Day Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 40

Inhalants*: Lifetime, Annual, and Thirty-Day Prevalence Among Young Adults, 1991 by Age Group

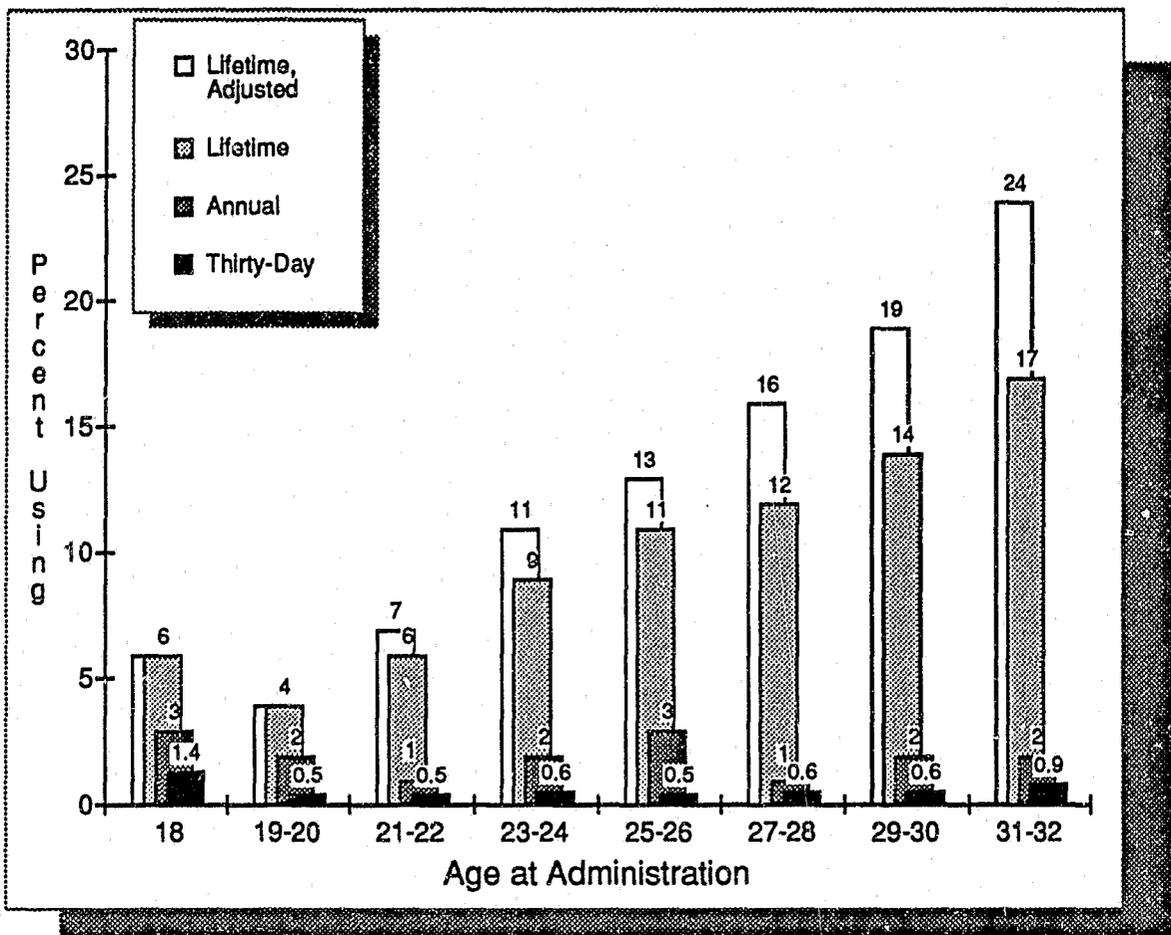


NOTE: Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

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

FIGURE 41

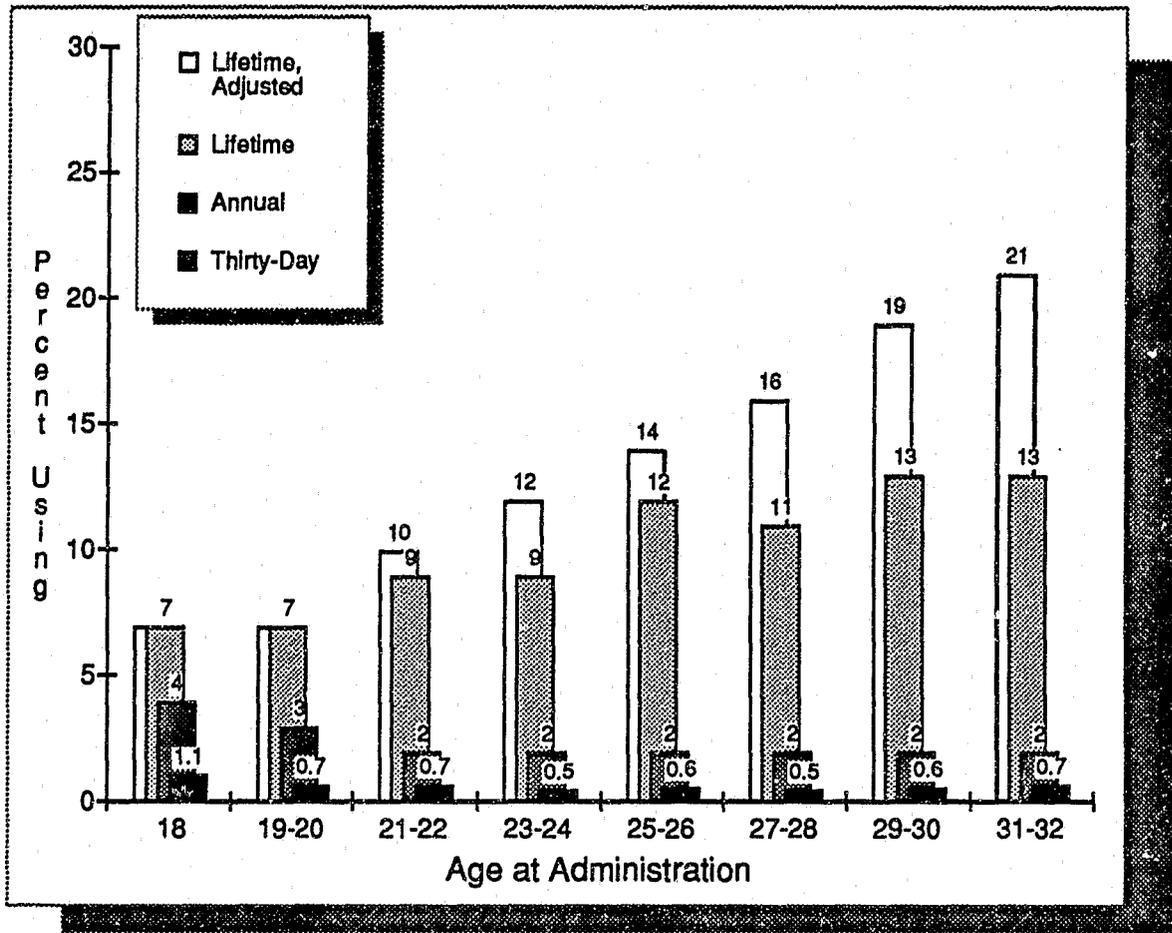
Barbiturates: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 42

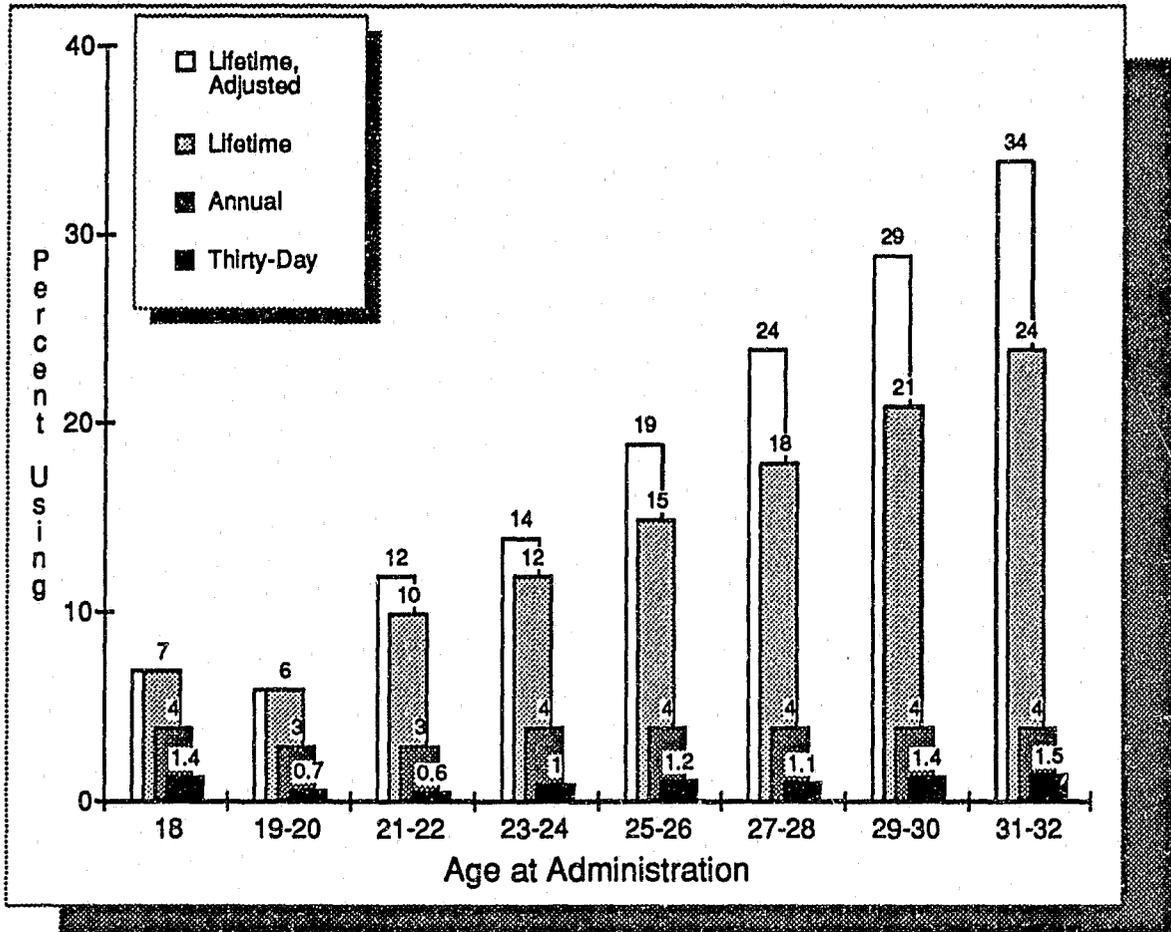
Other Opiates: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 43

Tranquilizers: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group



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

FIGURE 44

MDMA: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group

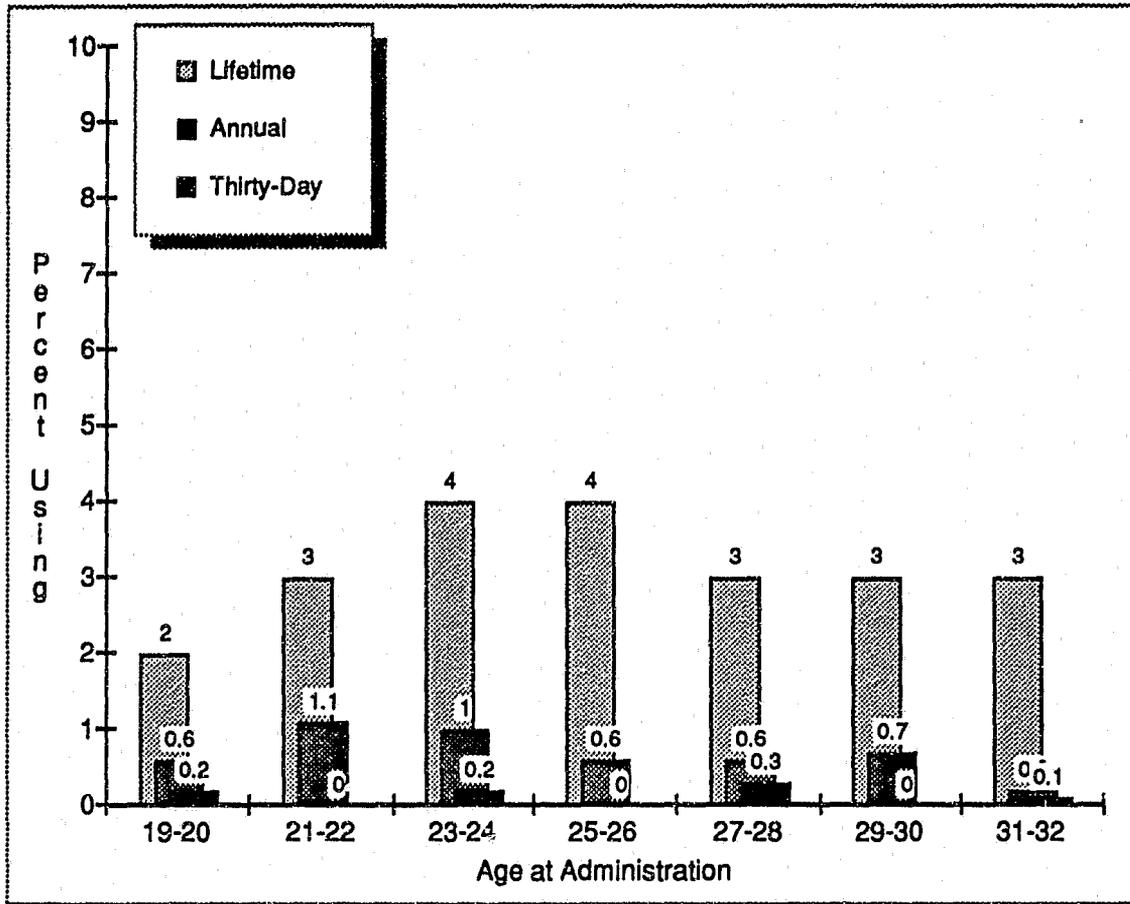


FIGURE 45

Crystal Methamphetamine: Lifetime, Annual, and
Thirty-Day Prevalence Among Young Adults, 1991
by Age Group

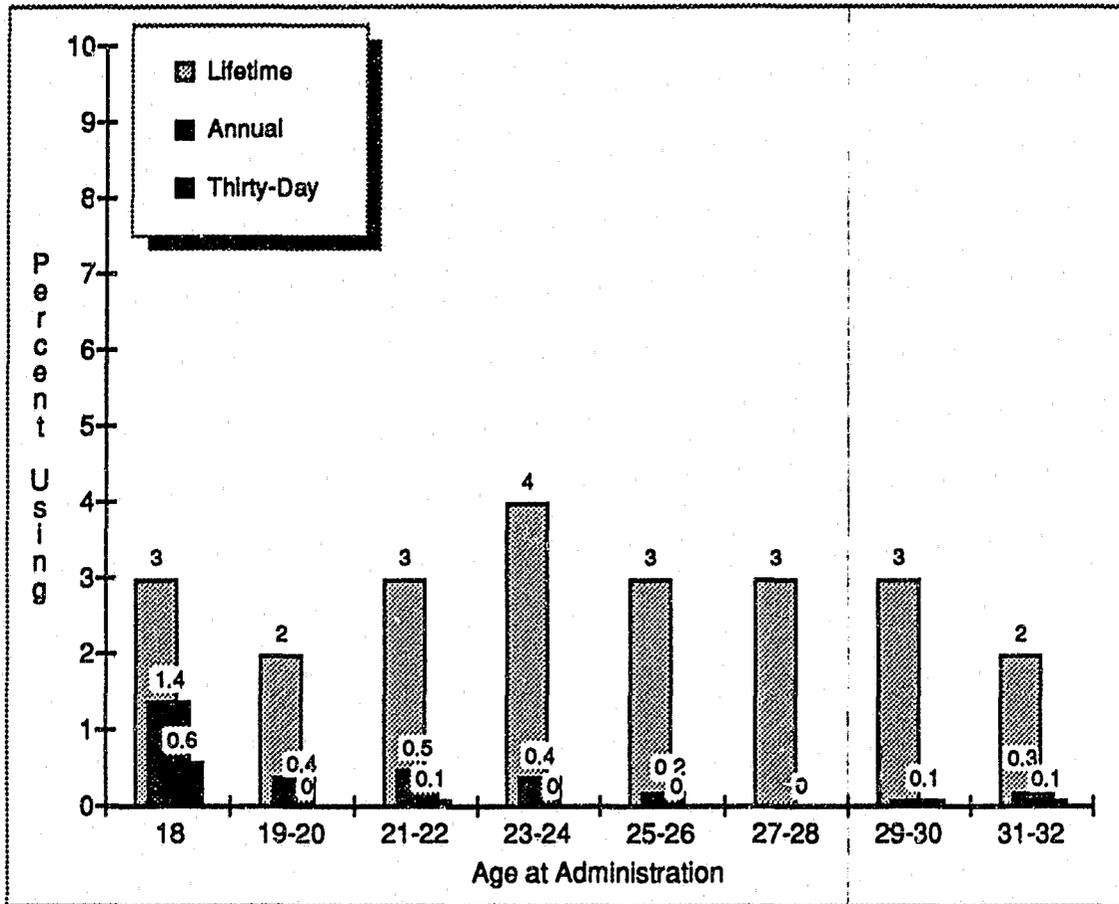


FIGURE 46

**Steroids: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group**

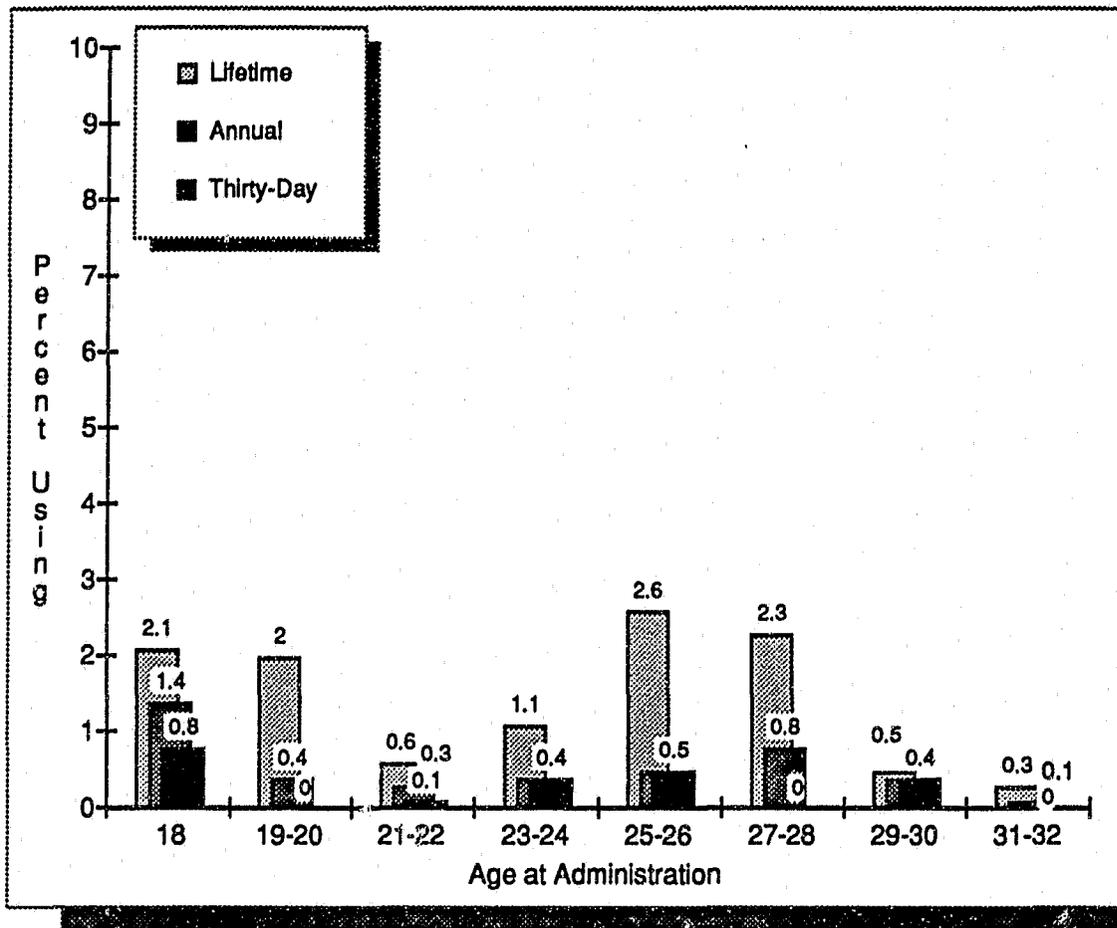


FIGURE 47

Heroin: Lifetime, Annual, and Thirty-Day
Prevalence Among Young Adults, 1991
by Age Group

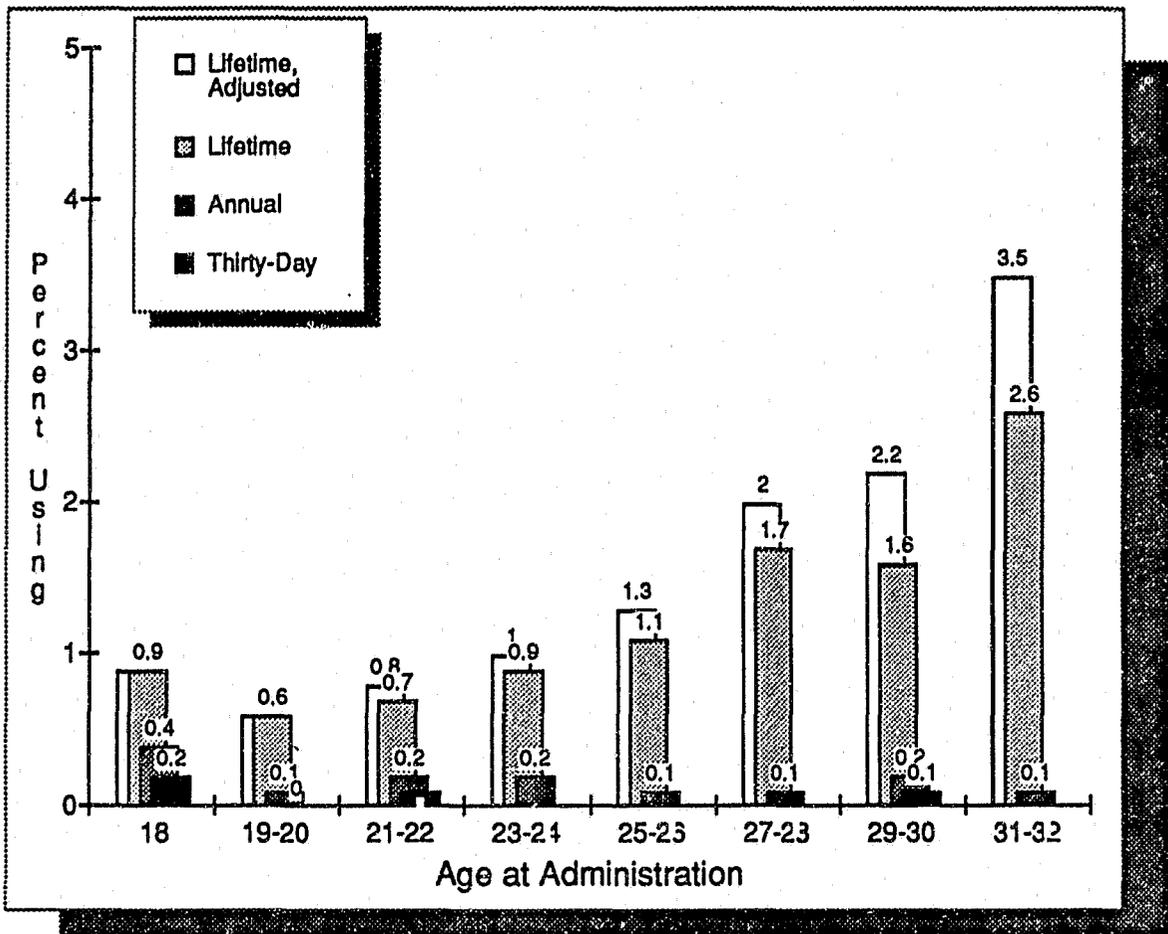
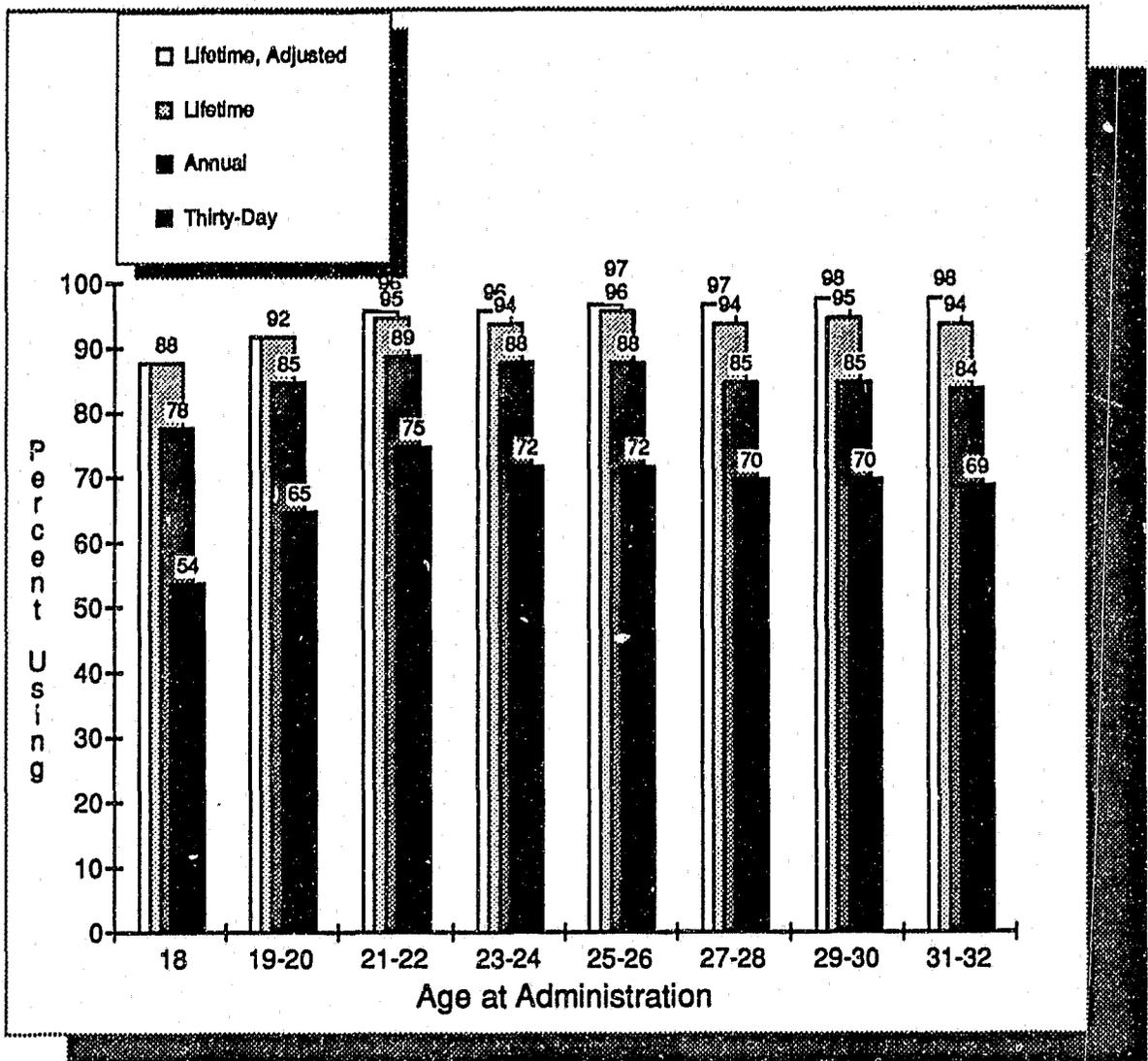


FIGURE 48a

Alcohol: Various Prevalence Rates Among Young Adults, 1991
by Age Group



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

FIGURE 48b

Two-Week Prevalence of Five or More Drinks in a Row,
and Thirty-Day Prevalence of Daily Use, Among Young Adults, 1991
by Age Group

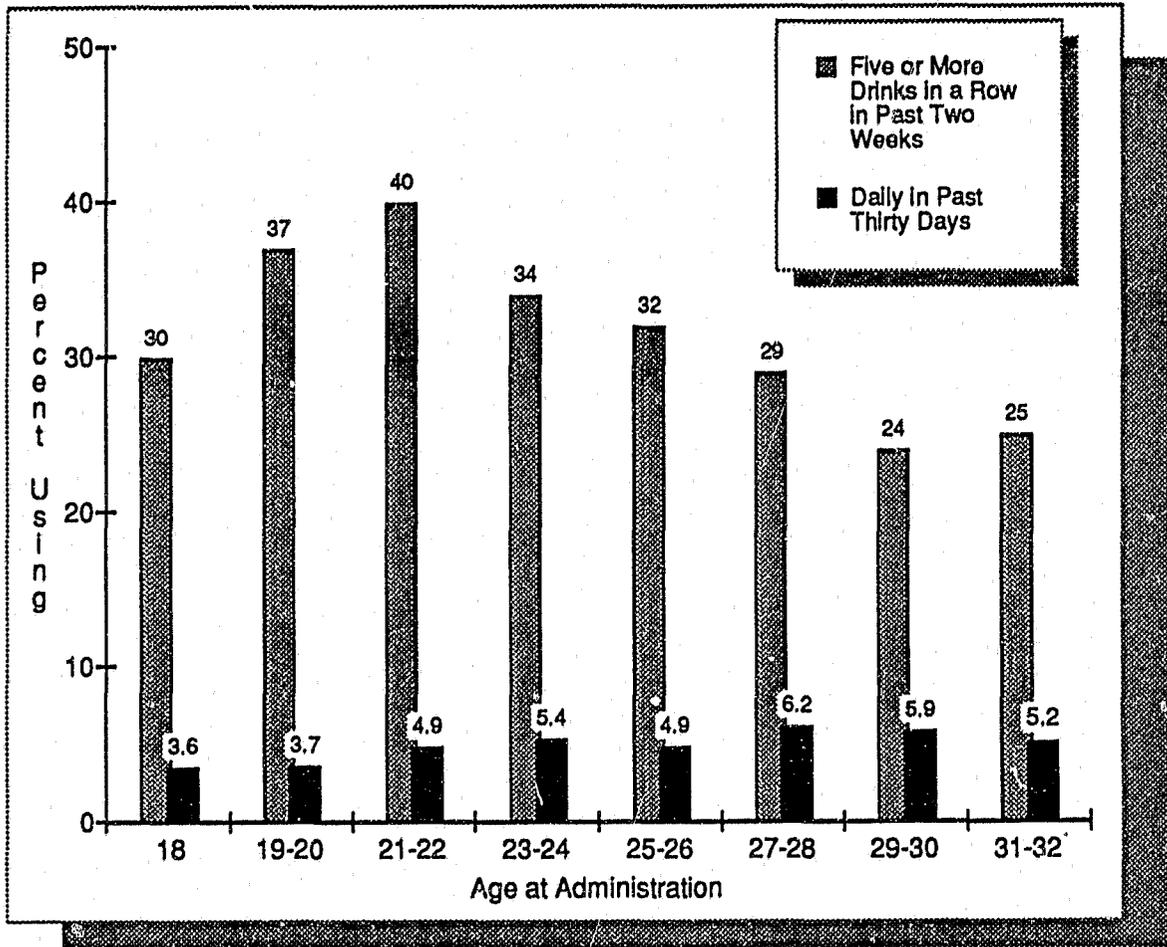
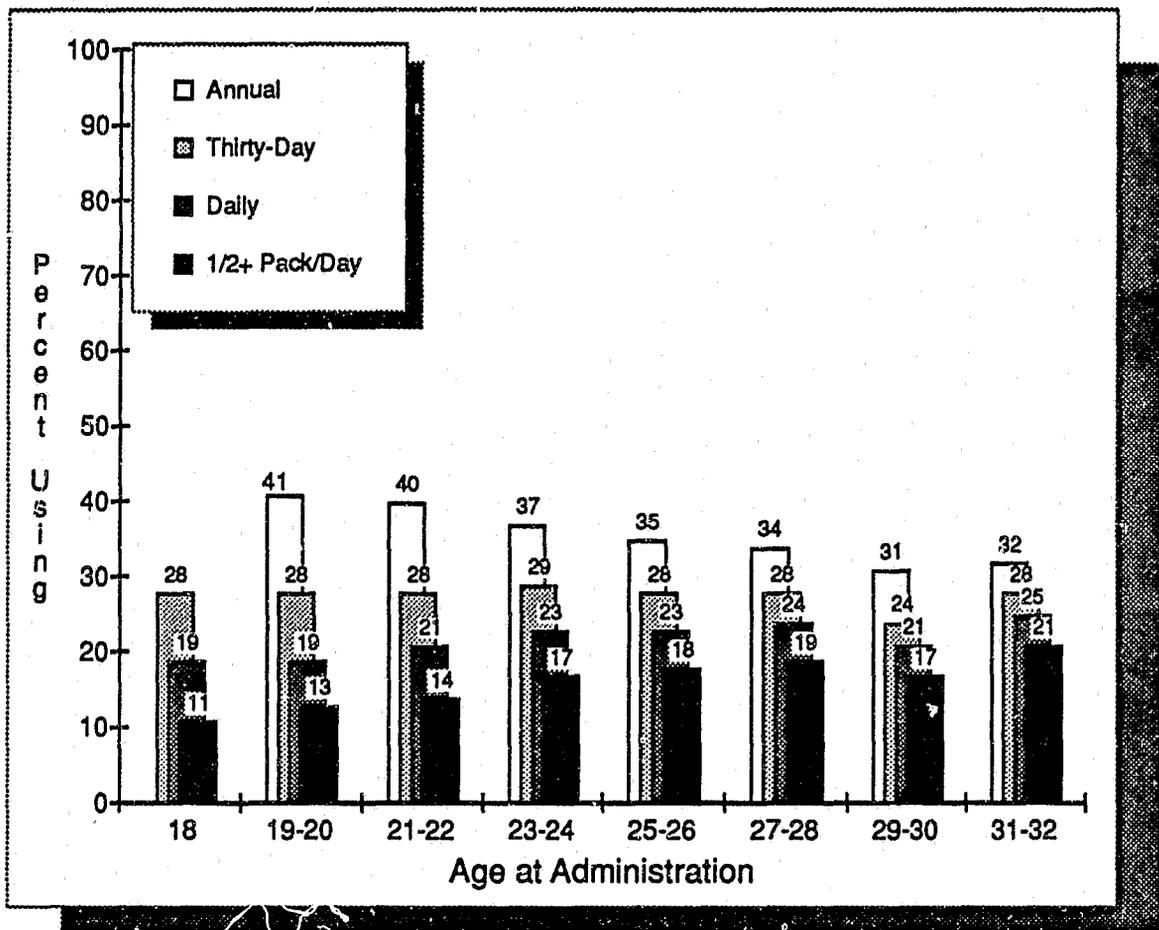


FIGURE 49

Cigarettes: Annual, Thirty-Day, Daily, and Half-Pack Prevalence Among Young Adults, 1991
by Age Group



NOTE: Lifetime prevalence is not asked in the follow-up surveys. Annual prevalence is not asked in the base-year surveys.

PREVALENCE COMPARISONS FOR SUBGROUPS OF YOUNG ADULTS

Sex Differences

- Statistics on usage rates for young adults one to fourteen years beyond high school (modal ages 19 to 32), combined, are given for the total sample and separately for males and females in Tables 35 to 39.
- In general, most of the sex differences in drug use which pertained in high school may be found in this young adult sample as well. For example, somewhat more males than females report using *any illicit drug* during the prior year (30% vs. 23%). Males have higher annual prevalence rates in most of the illicit drugs—with the highest ratios pertaining for *steroids, nitrites, heroin, PCP, LSD, hallucinogens* in general, *inhalants*, and *crack* cocaine. For example, among the 19 to 32 year olds *crack* was used by 1.8% of males vs. 0.7% of females during the prior twelve months.
- Other large sex differences are to be found in *daily marijuana use* (3.6% for males vs. 1.4% for females in 1991), *daily alcohol use* (8.6% vs. 2.2%), and occasions of drinking *five or more drinks in a row* in the prior two weeks (44% vs. 22%). The sex difference in occasions of heavy drinking is even greater among young adults than among high school seniors (where it is 38% for males vs. 21% for females).
- The use of *stimulants*, which is now about equivalent among males and females in high school, is also similar for both sexes in this post-high school period (annual prevalence 4.7% vs. 3.4%).
- *Crystal methamphetamine ("ice")* is used by equally small percentages of males (0.2% annual prevalence) and females (0.3%).
- Unlike most substances, there are few differences between males and females in rates of *cigarette* use.

Among high school seniors in 1991, males and females are about equally likely to have smoked *cigarettes* in the past month (28–29%), and to have smoked daily in the past month (18–19%). Males are slightly more likely than females to smoke at the half-pack level (12% vs. 10%). These sex differences are very similar among young adults aged 19 to 32: males are only slightly more likely than females to have smoked at all in the past month (28% vs. 27%), to smoke daily (23% vs. 22%), and slightly more likely to smoke at the half-pack a day level (18% vs. 16%).

TABLE 35

Prevalence of Use of Various Types of Drugs, by Sex, 1991
Among Respondents of Modal Age 19-32
 (Entries are percentages)

	<u>Males</u>	<u>Females</u>	<u>Total</u>
Approx. Wtd. N=	(4000)	(5000)	(9000)
Any Illicit Drug ^e			
Annual	29.6	23.4	26.2
Thirty-Day	18.4	12.0	14.9
Any Illicit Drug ^e Other than Marijuana			
Annual	16.2	12.2	14.0
Thirty-Day	6.5	4.5	5.4
Marijuana			
Annual	27.0	19.6	22.9
Thirty-Day	17.0	10.1	13.2
Daily	3.6	1.4	2.4
Inhalants ^b			
Annual	2.2	1.1	1.6
Thirty-Day	0.6	0.2	0.4
Nitrites ^g			
Annual	0.6	0.0	0.3
Thirty-Day	0.1	0.0	0.0
Hallucinogens			
Annual	5.6	2.1	3.7
Thirty-Day	1.4	0.5	0.9
LSD			
Annual	4.7	1.7	3.0
Thirty-Day	1.0	0.4	0.7
PCP ^g			
Annual	0.4	0.0	0.2
Thirty-Day	0.2	0.0	0.1
Cocaine			
Annual	8.1	4.9	6.3
Thirty-Day	3.0	1.5	2.1
Crack			
Annual	1.8	0.7	1.2
Thirty-Day	0.7	0.2	0.4
Other Cocaine ^f			
Annual	7.2	4.4	5.6
Thirty-Day	2.7	1.3	2.0
MDMA ("Ecstasy") ^c			
Annual	0.8	0.6	0.7
Thirty-Day	0.1	0.1	0.1
Heroin			
Annual	0.2	0.1	0.1
Thirty-Day	0.1	0.0	0.0
Other Opiates ^a			
Annual	2.4	2.2	2.3
Thirty-Day	0.5	0.7	0.6

(Table continued on next page)

TABLE 35 (Cont.)

Prevalence of Use of Various Types of Drugs, by Sex, 1991
 Among Respondents of Modal Age 19-32
 (Entries are percentages)

Approx. Wtd. N=	<u>Males</u> (4000)	<u>Females</u> (5000)	<u>Total</u> (9000)
Stimulants, Adjusted ^{a,d}			
Annual	4.7	3.4	4.0
Thirty-Day	1.4	1.3	1.3
Crystal Methamphetamine ("Ice") ^c			
Annual	0.2	0.3	0.3
Thirty-Day	0.0	0.0	0.0
Barbiturates ^a			
Annual	2.1	1.6	1.8
Thirty-Day	0.8	0.5	0.6
Tranquilizers ^a			
Annual	3.7	3.6	3.7
Thirty-Day	1.0	1.1	1.1
Steroids ^e			
Annual	0.9	0.0	0.4
Thirty-Day	0.4	0.0	0.2
Alcohol			
Annual	88.1	84.7	86.3
Thirty-Day	76.7	64.9	70.2
Daily	8.6	2.2	5.1
5+ drinks in a row in last 2 weeks	44.0	22.3	32.0
Cigarettes			
Annual	36.2	35.8	36.0
Thirty-Day	28.4	27.0	27.7
Daily (Any)	22.6	21.5	22.0
Half-pack or more per day	18.0	15.7	16.8

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

^bThis drug was asked about in five of the six questionnaire forms. Total N is approximately 7400.

^cThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

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

^eUse of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders.

^fThis drug was asked about in four of the six questionnaire forms. Total N is approximately 5600.

^gThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

- **Steroid** use among young adults is considerably more prevalent among males than females, as is true for seniors. Among seniors 2.4% of the males reported steroid use in the past year vs. 0.2% of the females. These statistics are much lower among the 19 to 32 year olds—0.9% vs. 0.0%.
- **MDMA (“ecstasy”)** is slightly higher among males than females in the young adult sample (annual prevalence 0.8% vs. 0.6%, respectively).

Regional Differences

The regional location of each follow-up respondent is determined by his or her answer to a question about state of current residence. States are then assigned to the same regions used in the analysis of the high school data (see Figure 5, in Volume I). Tables 36–39 present regional differences in lifetime prevalence, annual prevalence, 30-day prevalence, and current daily prevalence, for the 19 to 32 year olds combined.

- Regional differences use are not very large for **marijuana** use, except that the South is lower than the other regions, as is true among seniors. The South is also somewhat lower in the proportion using **any illicit drug**.
- Again consistent with the high school findings, the Northeast and the West show considerably higher rates of annual **cocaine** use than the North Central and the South; these regional differences are smaller on 30-day prevalence. **Crack** cocaine, however, shows no differences based on region in 1991 for either young adults or seniors.
- The annual use of **stimulants** is lowest in the Northeast, again consistent with the high school results.
- The use of **crystal methamphetamine (“ice”)** is primarily concentrated in the Western region of the country, 0.8% annual prevalence vs. 0.1% to 0.2% for all other regions.
- For the **remaining illicit drugs** the annual and 30-day prevalence rates tend to be very low (under 4% and 2% respectively), making regional differences small in absolute terms, even when there are any. The specifics may be gleaned from Tables 37 and 38.
- The annual and 30-day prevalence rates for **alcohol** are somewhat higher in the Northeast and North Central regions than in the Southern and Western parts of the country, as is true for seniors. **Occasional heavy drinking** shows the same pattern: 36%, 38%, 27% and 28% for the Northeast, North Central, South, and West respectively. (See Table 39.)

- Like the senior data, *cigarette smoking* in these older age groups is lowest in the West and highest in the Northeast and North Central.

Differences Related to Population Density

Population density was measured by asking the respondent to check which of a number of listed alternatives best described the size and nature of the community in which he or she resided during March of that year. The major answer alternatives are listed in Table 36 and the population size given to the respondent to help define each level is provided in the footnote. (Examinations of the 1987 and 1988 drug use data for the two most urban strata revealed that the modest differences in prevalence rates between the suburbs and the corresponding cities were not worth the complexity of reporting them separately; accordingly, these categories were merged.) See Tables 37 through 39 for the relevant results discussed below.

- For *most of the illicit drugs* there is no positive association between size of community and prevalence of use, which may be a counter-intuitive finding for many.
- Among the exceptions is *marijuana*, which shows a modest positive association with population density, due primarily to the lowest category (farm/country) having below-average rates of annual and 30-day prevalence. There are few differences otherwise.
- Annual use of *hallucinogens*, including *LSD* and *MDMA*, is also lower than average in the farm/country, and higher than average in the very large cities, as are usage rates for *inhalants* and *any illicit drug*.
- *Cocaine* use has only a modest positive association with population density—primarily due to the farm/country and small town strata having lower than average usage rates. *Crack* cocaine, however, shows no such relationship.
- Although the overall prevalence rates are very low, the use of *crystal methamphetamine* (“ice”) is mostly concentrated in the medium-sized cities and very large cities (0.6% and 0.5% respectively, vs. 0.1% to 0.2% for the other strata).
- Lifetime, annual, and 30-day *alcohol* use measures show a slight positive association with population density. *Occasions of heavy drinking*, however, are about the same across all strata except farm/country, which has a slightly lower rate. Not even that association exists for prevalence of *daily* use, which stands at between 5% and 6% for all community size strata.

- By way of contrast, *cigarette smoking* is highest in the farm/country stratum and lowest in the large cities (daily prevalences of 26% vs. 18%).

Table 36

Lifetime^e Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Any Illicit Drug	Any Illicit Drug Other than Marijuana	Marijuana	Inhalants ^{a,b}	Nitrites ^c	Hallu- cinogens ^a
Total	9000	65.8	41.4	62.3	13.1	3.1	17.5
Sex:							
Male	4000	67.1	43.5	64.1	17.5	5.6	22.4
Female	5000	64.7	39.6	60.9	9.5	1.1	13.5
Modal Age:							
19-20	1500	48.1	26.0	44.0	15.5	0.3	10.7
21-22	1400	59.5	34.4	56.1	14.1	0.7	14.4
23-24	1300	63.6	38.8	60.2	12.0	1.3	16.5
25-26	1200	70.1	45.0	66.7	13.1	1.5	18.0
27-28	1200	73.9	48.5	70.3	11.6	3.6	20.1
29-30	1200	74.2	51.1	71.7	13.0	6.5	21.6
31-32	1200	76.4	51.0	73.3	11.5	8.3	23.5
Region:							
Northeast	1900	70.7	44.1	68.5	13.7	3.8	19.5
North Central	2500	67.0	41.1	63.8	13.2	2.5	17.5
South	2900	60.8	37.0	56.4	11.6	3.1	14.0
West	1600	67.4	47.1	64.0	15.0	3.1	21.8
Population Density: ^d							
Farm/Country	1100	60.7	36.6	55.9	11.1	2.1	13.7
Small Town	2700	64.9	40.4	60.7	11.9	1.9	15.7
Medium City	1900	64.4	40.1	61.6	14.1	3.6	18.1
Large City	1800	68.3	42.2	64.9	13.7	2.9	19.3
Very Large City	1300	70.1	48.0	68.2	15.2	5.8	21.3

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

^bThis drug was asked about in five of the six questionnaire forms. Total N is approximately 7400.

^cThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

^dA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

^eLifetime prevalence is uncorrected for any cross-time inconsistencies in responding.

Table 36, cont.
Lifetime^d Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	LSD	PCP ^a	MDMA ^b	Cocaine	Crack	Heroin	Other Opiates
Total	14.8	4.6	3.2	24.8	5.3	1.3	10.3
Sex:							
Male	19.4	7.3	4.2	28.9	6.8	1.9	11.9
Female	11.0	2.4	2.4	21.5	4.0	0.7	8.9
Modal Age:							
19-20	9.8	1.5	1.8	8.5	2.0	0.6	6.9
21-22	12.7	2.3	2.7	16.6	4.6	0.7	8.9
23-24	14.3	2.8	4.1	23.1	6.0	0.9	9.3
25-26	15.0	2.7	4.3	28.6	6.3	1.1	11.5
27-28	16.6	6.6	3.1	31.8	6.0	1.7	10.7
29-30	17.0	7.0	3.2	36.0	6.0	1.6	12.6
31-32	19.5	9.7	3.0	34.7	7.1	2.6	13.2
Region:							
Northeast	15.1	5.5	2.0	29.7	5.7	1.1	9.9
North Central	14.9	4.2	1.1	22.2	4.2	1.3	11.1
South	12.6	4.5	4.6	19.9	4.9	1.2	8.7
West	18.5	4.4	5.2	32.7	7.3	1.4	12.7
Population Density: ^c							
Farm/Country	12.3	3.9	2.0	19.4	4.5	1.1	8.4
Small Town	13.8	4.0	2.1	22.4	5.1	1.0	9.7
Medium City	15.3	6.0	2.9	25.1	5.5	1.4	10.5
Large City	15.6	5.0	3.8	26.0	5.8	1.2	11.0
Very Large City	17.0	4.0	5.8	32.2	5.6	1.9	12.0

^aThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

^bThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

^cA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

^dLifetime prevalence is uncorrected for any cross-time inconsistencies in responding.

Table 36, cont.
Lifetime^e Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Stimulants ^a	Barbiturates	"Ice" ^b	Tranquilizers	Steroids ^c	Alcohol	Cigarettes
Total	25.3	10.1	2.8	14.7	1.3	94.3	NA
Sex:							
Male	26.5	12.2	3.5	15.2	3.0	94.7	NA
Female	24.4	8.4	2.1	14.2	0.0	94.0	NA
Modal Age:							
19-20	14.3	4.3	1.8	5.9	2.0	92.1	NA
21-22	18.7	5.7	2.6	10.3	0.6	94.6	NA
23-24	22.7	9.0	3.5	11.6	1.1	94.4	NA
25-26	28.6	11.2	3.4	15.1	2.6	95.6	NA
27-28	30.0	12.0	3.3	18.0	2.3	93.9	NA
29-30	31.8	13.6	2.6	21.1	0.5	95.3	NA
31-32	34.9	17.0	2.1	23.9	0.3	94.4	NA
Region:							
Northeast	23.9	10.2	2.4	15.7	0.8	96.6	NA
North Central	27.5	9.7	2.4	13.3	1.3	96.7	NA
South	22.9	10.3	2.2	15.3	1.4	91.8	NA
West	28.4	10.2	4.7	14.9	2.0	92.6	NA
Population Density: ^d							
Farm/Country	24.9	10.3	2.1	13.8	0.9	92.3	NA
Small Town	24.5	9.9	2.8	14.6	2.1	93.6	NA
Medium City	24.5	9.7	2.9	14.7	0.9	94.0	NA
Large City	25.4	9.7	3.0	14.5	1.0	95.8	NA
Very Large City	28.8	11.4	2.9	16.2	1.3	95.7	NA

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

^bThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

^cThis drug was asked of all age groups in one of the six questionnaire forms. Total N is approximately 1800.

^dA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-300,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

^eLifetime prevalence is uncorrected for any cross-time inconsistencies in responding.

Table 37
Annual Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Any Illicit Drug	Any Illicit Drug Other than Marijuana	Marijuana	Inhalants ^{a,b}	Nitrites ^c	Hallu- cinogens ^a
Total	9000	26.2	14.0	22.9	1.6	0.3	3.7
Sex:							
Male	4000	29.6	16.2	27.0	2.2	0.6	5.6
Female	5000	23.4	12.2	19.6	1.1	0.0	2.1
Modal Age:							
19-20	1500	28.1	13.8	25.4	4.0	0.0	6.2
21-22	1400	29.9	14.9	26.8	2.3	0.3	5.7
23-24	1300	27.0	14.6	23.2	1.0	0.4	4.4
25-26	1200	25.2	14.4	21.8	1.2	0.3	3.2
27-28	1200	23.9	13.6	20.9	0.6	0.0	2.4
29-30	1200	24.5	13.2	21.0	0.6	0.6	1.5
31-32	1200	23.8	13.1	19.9	0.4	0.4	1.3
Region:							
Northeast	1900	29.7	14.4	27.0	1.5	0.1	3.1
North Central	2500	26.7	13.4	23.5	1.3	0.2	4.0
South	2900	22.3	12.6	18.7	1.8	0.5	3.1
West	1600	29.6	17.6	25.8	1.9	0.3	5.3
Population Density: ^d							
Farm/Country	1100	21.2	11.7	18.1	1.0	0.0	2.2
Small Town	2700	25.7	13.4	22.2	1.3	0.1	3.4
Medium City	1900	28.4	15.4	24.7	1.6	0.2	4.1
Large City	1800	25.8	13.5	22.7	2.1	0.1	4.1
Very Large City	1300	29.1	16.2	26.0	2.0	1.2	4.5

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

^bThis drug was asked about in five of the six questionnaire forms. Total N is approximately 7400.

^cThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

^dA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Table 37, cont.
Annual Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	LSD	PCP ^a	MDMA ^b	Cocaine	Crack	Heroin	Other Opiates
Total	3.0	0.2	0.7	6.3	1.2	0.1	2.3
Sex:							
Male	4.7	0.4	0.8	8.1	1.8	0.2	2.4
Female	1.7	0.0	0.6	4.9	0.7	0.1	2.2
Modal Age:							
19-20	5.4	0.4	0.6	3.8	0.6	0.1	3.2
21-22	5.0	0.4	1.1	6.1	1.3	0.2	2.4
23-24	3.8	0.0	1.0	7.2	1.4	0.2	2.4
25-26	2.5	0.3	0.6	7.4	1.5	0.1	2.4
27-28	1.9	0.2	0.6	6.9	1.6	0.1	1.8
29-30	1.0	0.0	0.7	6.7	1.1	0.2	1.8
31-32	0.8	0.1	0.2	6.8	1.3	0.1	1.7
Region:							
Northeast	2.4	0.1	0.8	8.1	1.0	0.1	2.2
North Central	3.3	0.4	0.1	5.0	0.9	0.1	2.7
South	2.8	0.2	1.0	5.4	1.4	0.2	1.7
West	4.0	0.1	0.7	8.6	1.5	0.1	2.9
Population Density: ^c							
Farm/Country	2.0	0.2	0.4	4.6	1.0	0.1	1.8
Small Town	3.0	0.4	0.3	6.0	1.2	0.1	2.1
Medium City	3.3	0.2	0.9	7.2	1.6	0.2	2.9
Large City	3.2	0.1	0.4	6.2	1.1	0.2	2.3
Very Large City	3.6	0.0	1.6	7.8	1.1	0.1	2.4

^aThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

^bThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

^cA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Table 37, cont.
Annual Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Stimulants ^a	Barbiturates	"Ice" ^b	Tranquilizers	Steroids ^c	Alcohol	Cigarettes
Total	4.0	1.8	0.3	3.7	0.4	86.3	36.0
Sex:							
Male	4.7	2.1	0.2	3.7	0.9	88.1	36.2
Female	3.4	1.6	0.3	3.6	0.0	84.7	35.8
Modal Age:							
19-20	4.9	1.8	0.4	2.7	0.4	84.6	41.4
21-22	4.9	1.4	0.5	3.2	0.3	89.0	39.6
23-24	3.8	2.0	0.4	4.0	0.4	88.1	37.3
25-26	3.4	2.5	0.2	3.9	0.5	87.7	34.8
27-28	4.0	1.4	0.0	3.8	0.8	85.3	33.8
29-30	2.9	1.6	0.1	4.2	0.4	85.0	30.7
31-32	3.7	2.2	0.2	4.1	0.1	83.8	32.4
Region:							
Northeast	1.8	1.9	0.2	3.8	0.1	91.5	37.5
North Central	4.6	1.9	0.1	3.3	0.5	89.9	40.6
South	4.5	1.9	0.2	3.9	0.5	81.1	34.4
West	4.8	1.8	0.8	3.9	0.4	84.1	30.3
Population Density: ^d							
Farm/Country	4.5	2.0	0.2	3.4	0.5	79.9	38.0
Small Town	4.0	1.8	0.1	3.8	0.3	85.3	37.7
Medium City	4.6	2.1	0.6	4.2	0.4	86.1	35.9
Large City	3.5	1.7	0.1	3.4	0.3	89.3	35.5
Very Large City	3.4	1.9	0.5	3.6	0.8	89.8	31.9

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

^bThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

^cThis drug was asked of all age groups in one of the six questionnaire forms. Total N is approximately 1800.

^dA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Table 38
Thirty-Day Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Any Illicit Drug	Any Illicit Drug Other than Marijuana	Marijuana	Inhalants ^{a,b}	Nitrites ^c	Hallu- cinogens ^a
Total	9000	14.9	5.4	13.2	0.4	0.0	0.9
Sex:							
Male	4000	18.4	6.5	17.0	0.6	0.1	1.4
Female	5000	12.0	4.5	10.1	0.2	0.0	0.5
Modal Age:							
19-20	1500	14.2	4.8	13.2	1.0	0.0	1.5
21-22	1400	16.5	5.5	14.7	0.6	0.0	1.2
23-24	1300	14.6	5.5	13.0	0.1	0.0	0.8
25-26	1200	14.5	5.9	13.0	0.3	0.2	0.9
27-28	1200	15.6	5.6	13.5	0.3	0.0	0.8
29-30	1200	14.6	5.5	12.7	0.2	0.0	0.3
31-32	1200	13.9	5.3	12.1	0.2	0.0	0.3
Region:							
Northeast	1900	17.4	5.0	16.0	0.5	0.0	0.6
North Central	2500	15.2	5.1	13.6	0.2	0.0	1.0
South	2900	11.9	5.1	10.3	0.6	0.1	0.7
West	1600	17.4	7.1	15.1	0.4	0.0	1.2
Population Density: ^d							
Farm/Country	1100	12.5	4.6	11.1	0.5	0.0	0.5
Small Town	2700	14.5	5.0	12.7	0.2	0.1	0.7
Medium City	1900	15.7	6.3	13.8	0.3	0.0	0.9
Large City	1800	15.2	5.7	13.5	0.6	0.0	1.4
Very Large City	1300	15.8	5.4	14.2	0.6	0.0	0.6

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

^bThis drug was asked about in five of the six questionnaire forms. Total N is approximately 7400.

^cThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

^dA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Table 38, cont.
Thirty-Day Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	LSD	PCP ^a	MDMA ^b	Cocaine	Crack	Heroin	Other Opiates
Total	0.7	0.1	0.1	2.1	0.4	0.0	0.6
Sex:							
Male	1.0	0.2	0.1	3.0	0.7	0.1	0.5
Female	0.4	0.0	0.1	1.5	0.2	0.0	0.7
Modal Age:							
19-20	1.1	0.4	0.2	1.3	0.1	0.0	0.7
21-22	0.9	0.0	0.0	1.3	0.4	0.1	0.7
23-24	0.7	0.0	0.2	2.6	0.5	0.0	0.5
25-26	0.8	0.2	0.0	2.8	0.5	0.0	0.6
27-28	0.6	0.2	0.3	2.2	0.7	0.0	0.5
29-30	0.3	0.0	0.0	2.5	0.5	0.1	0.6
31-32	0.1	0.1	0.1	2.4	0.4	0.0	0.7
Region:							
Northeast	0.4	0.0	0.2	2.7	0.4	0.0	0.5
North Central	0.8	0.3	0.0	1.6	0.2	0.1	0.7
South	0.6	0.1	0.1	2.0	0.6	0.0	0.4
West	0.3	0.1	0.2	2.7	0.4	0.0	1.0
Population Density:^c							
Farm/Country	0.5	0.0	0.0	1.6	0.5	0.0	0.4
Small Town	0.6	0.3	0.1	1.9	0.4	0.0	0.6
Medium City	0.7	0.1	0.0	2.6	0.6	0.0	0.3
Large City	1.1	0.1	0.2	1.8	0.3	0.1	1.0
Very Large City	0.4	0.0	0.2	2.9	0.4	0.0	0.7

^aThis drug was asked about in one of the six questionnaire forms. Total N is approximately 1800.

^bThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

^cA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Table 38, cont.
Thirty-Day Prevalence of Use of Various Types of Drugs, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Stimulants ^a	Barbiturates	"Ice" ^b	Tranquilizers	Steroids ^c	Alcohol	Cigarettes
Total	1.3	0.6	0.0	1.1	0.2	70.2	27.7
Sex:							
Male	1.4	0.8	0.0	1.0	0.4	76.7	28.4
Female	1.3	0.5	0.0	1.1	0.0	64.9	27.0
Modal Age:							
19-20	1.4	0.5	0.0	0.7	0.0	64.5	27.6
21-22	2.0	0.5	0.1	0.6	0.1	75.3	28.3
23-24	0.9	0.6	0.0	1.0	0.4	72.4	28.5
25-26	1.7	0.5	0.0	1.2	0.5	71.6	28.3
27-28	1.3	0.6	0.0	1.1	0.0	69.8	28.2
29-30	1.2	0.6	0.1	1.4	0.4	69.6	24.4
31-32	0.9	0.9	0.1	1.5	0.0	68.5	28.1
Region:							
Northeast	0.4	0.5	0.0	1.1	0.0	77.6	29.1
North Central	1.7	0.6	0.0	1.1	0.0	74.1	32.4
South	1.3	0.8	0.0	1.1	0.4	63.3	26.3
West	2.0	0.4	0.1	1.0	0.4	67.4	21.2
Population Density: ^d							
Farm/Country	1.2	0.9	0.2	1.3	0.0	59.9	30.8
Small Town	1.2	0.4	0.0	0.9	0.1	68.4	28.8
Medium City	1.9	0.9	0.0	1.3	0.3	70.6	27.5
Large City	1.3	0.6	0.0	1.1	0.3	74.2	26.9
Very Large City	0.9	0.4	0.1	0.7	0.4	76.1	23.6

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

^bThis drug was asked about in two of the six questionnaire forms. Total N is approximately 3600.

^cThis drug was asked of all age groups in one of the six questionnaire forms. Total N is approximately 1800.

^dA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Table 39
Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes, by Subgroups, 1991
Among Respondents of Modal Age 19-32

(Entries are percentages)

	Approx. Weighted N	Marijuana Daily	Alcohol Daily	Alcohol: 5+ drinks in a row in past 2 weeks	Cigarettes Daily	Cigarettes: Half pack or more per day
Total	9000	2.4	5.1	32.0	22.0	16.8
Sex:						
Male	4000	3.6	8.6	44.0	22.6	18.0
Female	5000	1.4	2.2	22.3	21.5	15.7
Modal Age:						
19-20	1500	2.1	3.7	37.0	19.4	12.7
21-22	1400	2.4	4.9	40.3	20.6	14.1
23-24	1300	2.1	5.4	34.4	22.5	17.4
25-26	1200	2.5	4.9	31.5	22.8	18.2
27-28	1200	2.6	6.2	28.8	23.9	19.0
29-30	1200	2.6	5.9	24.3	21.0	16.7
31-32	1200	2.5	5.2	25.1	24.9	20.8
Region:						
Northeast	1900	3.0	5.9	35.7	23.6	18.2
North Central	2500	2.4	4.9	38.2	25.5	19.5
South	2900	1.8	4.7	26.7	21.4	16.5
West	1600	2.7	5.0	27.9	16.1	11.3
Population Density:^a						
Farm/Country	1100	2.5	5.2	28.9	25.7	21.0
Small Town	2700	2.1	4.8	32.6	23.3	18.3
Medium City	1900	2.2	4.5	32.0	21.5	16.1
Large City	1800	2.5	5.3	31.8	21.5	15.0
Very Large City	1300	2.7	5.8	33.8	17.7	13.3

^aA small town is defined as having less than 50,000 inhabitants; a medium city as 50,000-100,000; a large city as 100,000-500,000; and a very large city as having over 500,000 residents. Within each level of population density suburban and urban respondents are combined.

Chapter 15

TRENDS IN DRUG USE AMONG YOUNG ADULTS POST-HIGH SCHOOL

Trends in the use of the various licit and illicit drugs by all high school graduates from one to fourteen years beyond high school are presented in this chapter. Figures 50 through 64 plot separate trend lines for two-year age strata (that is, 1–2 years beyond high school, 3–4 years beyond high school, etc.) in order to damp down the random fluctuations which would be seen with one-year strata. (These two-year strata are not strictly speaking age-strata, because they are based on all respondents from adjacent high school classes, and they do not take account the minor differences in individual respondents' ages; but they are close approximations to age-strata, and we will characterize them by the modal age of the respondents, as age 19–20, 21–22, and so on.) Each data point in these figures is based on approximately 1200 weighted cases drawn from two adjacent high school classes; actual (unweighted) numbers of cases are somewhat higher. For the 1991 data, the 19–20 year old stratum is comprised of participating respondents from the classes of 1990 and 1989, respectively, the 21–22 year old stratum contains data from the classes of 1988 and 1987, and so on.

TRENDS IN PREVALENCE THROUGH 1991: YOUNG ADULTS

- Trends in use by young adults may be found in Tables 40 through 44, as well as in Figures 50 through 64.
- For most drugs, the trends in use among the older age groups have paralleled the changes among seniors discussed in Chapter 5, Volume I. This means that many of the changes have been secular trends—that is, they are observable in all the age groups under study. This has generally been true for the recent downward trends in the lifetime, annual, and 30-day prevalence measures for the use of *any illicit drug, marijuana, and tranquilizers*. (*LSD* and *opiates other than heroin* both began to level out in 1987, *barbiturates* and *methaqualone* in 1988.) All age groups also continued the important decline in *cocaine* first observed in 1987.
- Several of these drug classes have actually exhibited a faster decline in use during recent years among these older age groups than among the high school seniors. These include *any illicit drug, stimulants, hallucinogens, LSD, and methaqualone*.

- In fact there has been a crossover for some drugs when seniors are compared to graduates. Seniors used to have lower usage levels, but in recent years have higher ones, than those of post-high school age for use of *any illicit drug, any illicit drug other than marijuana, LSD, and stimulants*.
- It is worth noting that the long-term decline in *marijuana* use for all age groups shows evidence of leveling in terms of annual use among the oldest cohorts (Figure 52a) and in terms of 30-day use for most cohorts (Figure 52b).
- Figure 53 shows that *inhalant* use drops sharply with age. It also shows that the long-term gradual increase in annual inhalant use (unadjusted for underreporting of nitrite inhalants) shows up only among seniors and those 1-2 years past high school.
- The *alcohol* statistics for the older age groups (see Figure 63) also generally have tracked those reported for seniors (meaning a very gradual increase in the late 70's followed by a leveling and then a period of gradual decline), with one important exception. The downward shifts during the 80's in *30-day prevalence* and *occasions of heavy drinking* had been greater for the two youngest age strata (seniors and those 1-2 years past high school) than for the older age groups. These differential trends are due in part to the effects of changes in minimum drinking age laws in many states.¹² However, because similar (smaller) trends are evident among high school seniors in states that have maintained a constant minimum drinking age of 21, the changed laws cannot account for all the trends.

Those 3-4 years past high school stand out for showing no downward trend in binge drinking. As we will see, one important segment, comprised of college students, showed no downward trend.

- The prevalence statistics for *cigarette smoking* do not tend to show parallel trends across age groups (Figure 64). While the curves are of the same general shape for each age group, each curve tends to be displaced to the right of the one for the immediately preceding age group (which was two years younger). Note that this pattern is very similar to the one described earlier for lifetime smoking rates for various grade levels below senior year: it is the classic pattern exhibited when there is a "cohort effect" present, meaning that a class cohort tends to be different from other cohorts in a consistent way across much or all of the life span. This is how we interpret the cigarette data (O'Malley et al., 1988, referenced earlier), and we believe that the cohort differences tend to remain throughout the lifespan due to the highly addictive

¹²O'Malley, P.M., & Wagenaar, A.C. (1990). 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.

nature of nicotine. The declining levels of *cigarette smoking* observed in the classes of 1978, 1979, and 1980 when they were seniors are now observable for the same classes in their early thirties (see Figure 54b). However, the other age groups covered (which correspond to other graduating classes) show more modest declines in the same period. Note that the daily smoking rate for all of these age strata is beginning to level in the 20-25% range.

With one exception, none of the other drugs studied here shows the clear pattern of enduring cohort differences, despite wide variations in their use by different cohorts at a given age. (There is a modest cohort effect observed for daily marijuana use, and it may be in part attributable to the very strong association between that behavior and cigarette smoking.)

- To simplify the task of trend analysis, Tables 40 through 44 present the trends in prevalence since 1986 for all respondents one to ten years beyond high school combined, which corresponds to the modal age band 19 through 28. The tables show that in 1991 there were significant declines in this entire age-band of young adults in the proportion reporting the use in the past year of *any illicit drug* and *any illicit drug other than marijuana*. The annual prevalence rates for *marijuana*, *cocaine*, *crack*, and *stimulants* also declined significantly (Table 41). All of these changes parallel those observed among seniors. Much of the decrease in the illicit drug use indexes is due to the significant declines in cocaine use among all age groups, including high school seniors.
- *MDMA* or "ecstasy" use is not asked of seniors. The 19-28 year old young adults, however, showed the first significant decline in 1991.
- The important downturn in *cocaine*, observed for the first time among all age groups in 1987, continued almost as sharply through 1991 in the age groups encompassed here (see Figure 57). The proportion of 19 to 28 year olds reporting any *cocaine* use in the prior year dropped by one-fourth (to 6.2%) in 1991.
- *Crack* use continued to decline in this age group, as well as among seniors (see Figure 58). Among 19 to 28 year olds the annual prevalence rate went from 1.6% to 1.2%, which is down by nearly two-thirds from the peak levels in 1986 through 1988.
- There appear to be continuing, very gradual declines among young adults in their use of *stimulants* which fell from 5.2% to 4.3% in annual prevalence among 19 to 28 year olds.

- *LSD* was the only drug to show a statistically significant increase in 1990 among 19 to 28 year olds. Annual prevalence rose from 2.7% to 3.3%. It again rose slightly in 1991, to 3.8%. (Among seniors it also rose—from 4.9% in 1989 to 5.2% in 1991, which is not statistically significant.)
- The use of *heroin* remained stable for both seniors and young adults. *Opiates other than heroin* declined significantly for seniors only, although use also fell among young adults.
- In sum, except for cigarettes, high school seniors and young adults show longer-term trends in substance use, as well as near-term trends, which tend to be highly parallel. Although divergent trends would not necessarily demonstrate a lack of validity in either set of data (because such a divergence could occur as the result of cohort differences), we believe that the high degree of *convergence* provides an important source of validation of the trends reported earlier for the seniors. In fact, each of these sets of data helps to validate the "trend story" reported by the other.

TRENDS FOR IMPORTANT SUBGROUPS OF YOUNG ADULTS

Four-year age groupings have been used here to examine subgroup trends in order to have sufficiently large numbers of cases to make reliable estimates for the subgroups. Subgroup data for respondents of each sex, and for respondents from communities of different size, are available for 19 to 22 year olds since 1980, 23 to 26 year olds since 1984, and 27 to 30 year olds since 1988. Information on region of the country was included in the follow-up surveys beginning in 1987, so trend data are available for the four regions since then. These subgroup trend data are not presented here in tabular form because of the amount of space they would require.

Sex Differences in Trends

- In general, sex differences have been narrowing as males have tended to show faster declines than females in use of a number of drugs. For example, since 1980 annual prevalence of use of *any illicit drug* among 19 to 22 year olds (data not shown) fell by 25% among males (to 31%) compared to 24% among females (to 27%).
- The downward trend in *marijuana* use since 1980 among 19 to 22 year olds also has been sharper among males than females, thus narrowing the sex difference. Annual prevalence fell by 27% (to 29%) among males between 1980 and 1991, while it fell by only 21% among females (to 24%). During the same interval *daily marijuana use* for this age group fell from 13% to 3% among males vs. from 6% to 2% among females—again narrowing the sex difference.

TABLE 40

Trends in Lifetime^k Prevalence of Various Types of Drugs
Among Respondents of Modal Age 19-28
 (Entries are percentages)

	Percent who used in lifetime						'90-'91 change
	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(6900)	(6800)	(6700)	(6600)	(6700)	(6600)	
Any Illicit Drug ^h	70.5	69.9	67.9	66.4	64.5	62.2	-2.3ss
Any Illicit Drug ^h Other than Marijuana	48.4	47.0	44.6	42.7	40.8	37.8	-3.0sss
Marijuana	66.5	66.0	63.8	62.8	60.2	58.6	-1.6
Inhalants ^b	12.3	12.7	12.6	13.2	12.5	13.4	+0.9
Inhalants, Adjusted ^{b,e}	18.6	15.7	15.0	NA	13.5	14.1	+0.6
Nitrites ^f	12.6	6.9	6.2	NA	1.9	1.4	-0.5
Hallucinogens	18.5	17.1	17.0	15.9	16.1	15.7	-0.4
Hallucinogens, Adjusted ^g	20.1	17.2	17.2	NA	16.5	16.0	-0.5
LSD ^f	14.6	13.7	13.8	12.7	13.5	13.5	0.0
PCP ^f	8.4	4.8	5.0	NA	2.5	3.1	+0.6
Cocaine	32.0	29.3	28.2	25.8	23.7	21.0	-2.7sss
Crack ^c	NA	6.3	6.9	6.1	5.1	4.8	-0.3
Other Cocaine ^j	NA	28.2	25.2	25.4	22.1	19.8	-2.3ss
MDMA ("Ecstasy") ⁱ	NA	NA	NA	3.3	3.7	3.2	-0.5
Heroin	1.3	1.3	1.1	1.0	0.9	0.9	0.0
Other Opiates ^a	10.7	10.6	9.8	9.6	9.4	9.3	-0.1
Stimulants, Adjusted ^{a,d}	32.3	30.8	28.8	25.3	24.4	22.4	-2.0ss
Crystal Methamphetamine ("Ice") ⁱ	NA	NA	NA	NA	2.5	2.9	+0.4
Sedatives ^a	16.7	15.0	13.2	12.1	NA	NA	NA
Barbiturates ^a	11.1	9.7	8.9	7.9	8.7	8.2	-0.5
Methaqualone ^a	13.1	11.6	9.7	8.7	NA	NA	NA
Tranquilizers ^a	17.6	16.5	15.1	13.5	12.9	11.8	-1.1s
Alcohol	94.8	94.9	94.8	94.5	94.3	94.1	-0.2
Cigarettes	NA	NA	NA	NA	NA	NA	NA
Steroids ^f	NA	NA	NA	1.1	1.2	1.7	+0.5

NOTES: Level of significance of difference between the two most recent years:

s = .05, ss = .01, sss = .001.

NA indicates data not available.

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

^bThis drug was asked about in four of the five questionnaire forms in 1986-89, and five of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 5400.

^cThis drug was asked about in two of the five questionnaire forms in 1987-89, and in all six questionnaire forms in 1990-1991.

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

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

^fThis drug was asked about in one questionnaire form. Total N in 1991 is approximately 1300.

^gAdjusted for underreporting of PCP. See text.

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

ⁱThis drug was asked about in two questionnaire forms. Total N in 1991 is approximately 2600.

^jThis drug was asked about in one of the five questionnaire forms in 1987-89, and in four of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 4100.

^kLifetime prevalence is uncorrected for any cross-time inconsistencies in responding. See text.

TABLE 41

**Trends in Annual Prevalence of Various Types of Drugs
Among Respondents of Modal Age 19-28
(Entries are percentages)**

	Percent who used in last twelve months						'90-'91 change
	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(6900)	(6800)	(6700)	(6600)	(6700)	(6600)	
Any Illicit Drug ^h	41.9	39.3	36.3	32.8	30.7	27.0	-3.7 ^{sss}
Any Illicit Drug ^h Other than Marijuana	27.0	23.9	21.3	18.3	16.7	14.3	-2.4 ^{sss}
Marijuana	36.5	34.8	31.8	29.0	26.1	23.8	-2.3 ^{ss}
Inhalants ^b	1.9	2.1	1.8	1.9	1.9	2.0	+0.1
Inhalants, Adjusted ^{b,e}	3.0	2.8	2.4	NA	2.1	2.2	+0.1
Nitrites ^f	2.0	1.3	1.0	NA	0.4	0.2	-0.2
Hallucinogens	4.5	4.0	3.9	3.6	4.1	4.5	+0.4
Hallucinogens, Adjusted ^g	4.9	4.1	3.9	NA	4.2	4.6	+0.4
LSD ^g	3.0	2.9	2.9	2.7	3.3	3.8	+0.5
PCP ^f	0.8	0.4	0.4	NA	0.2	0.3	+0.1
Cocaine	19.7	15.7	13.8	10.8	8.6	6.2	-2.4 ^{sss}
Crack ^c	3.2	3.1	3.1	2.5	1.6	1.2	-0.4 ^s
Other Cocaine ^j	NA	13.6	11.9	10.3	8.1	5.4	-2.7 ^{sss}
MDMA ("Ecstasy") ⁱ	NA	NA	NA	1.4	1.5	0.8	-0.7 ^s
Heroin	0.2	0.2	0.2	0.2	0.1	0.1	0.0
Other Opiates ^a	3.1	3.1	2.7	2.8	2.7	2.5	-0.2
Stimulants, Adjusted ^{a,d}	10.6	8.7	7.3	5.8	5.2	4.3	-0.9 ^s
Crystal Methamphetamine ("Ice") ⁱ	NA	NA	NA	NA	0.4	0.3	-0.1
Sedatives ^a	3.0	2.5	2.1	1.8	NA	NA	NA
Barbiturates ^a	2.3	2.1	1.8	1.7	1.9	1.8	-0.1
Methaqualone ^a	1.3	0.9	0.5	0.3	NA	NA	NA
Tranquilizers ^a	5.4	5.1	4.2	3.7	3.7	3.5	-0.2
Alcohol	88.6	89.4	88.6	88.1	87.4	86.9	-0.5
Cigarettes	40.1	40.3	37.7	38.0	37.1	37.7	+0.6
Steroids ^f	NA	NA	NA	0.5	0.3	0.5	+0.2

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

NA indicates data not available.

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

^b This drug was asked about in four of the five questionnaire forms in 1986-89 (N was four-fifths of N indicated), and five of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 5400.

^c This drug was asked about in one of the five questionnaire forms in 1986, in two of the five questionnaire forms in 1987-89, and in all six questionnaire forms in 1990-1991.

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

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

^f This drug was asked about in one questionnaire form. Total N in 1990 is approximately 1300.

^g Adjusted for underreporting of PCP. See text.

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

ⁱ This drug was asked about in two questionnaire forms. Total N in 1991 is approximately 2600.

^j This drug was asked about in one of the five questionnaire forms in 1987-89, and in four of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 4100.

TABLE 42

Trends in Thirty-Day Prevalence of Various Types of Drugs
Among Respondents of Modal Age 19-28
 (Entries are percentages)

	Percent who used in last thirty days						'90-'91 change
	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(6900)	(6800)	(6700)	(6600)	(6700)	(6600)	
Any Illicit Drug ^h	25.8	23.4	20.5	17.7	15.9	15.1	-0.8
Any Illicit Drug Other than Marijuana	13.0	10.7	9.5	7.5	6.0	5.4	-0.6
Marijuana	22.0	20.7	17.9	15.5	13.9	13.5	-0.4
Inhalants ^b	0.4	0.6	0.6	0.5	0.6	0.5	-0.1
Inhalants, Adjusted ^{b,e}	0.7	0.9	0.9	NA	0.7	0.6	-0.1
Nitrites ^f	0.5	0.5	0.4	NA	0.1	0.0	-0.1
Hallucinogens	1.3	1.2	1.1	1.1	0.9	1.1	+0.2
Hallucinogens, Adjusted ^g	1.4	1.2	1.1	NA	1.0	1.2	+0.2
LSD ^f	0.9	0.8	0.8	0.8	0.6	0.8	+0.2
PCP ^f	0.2	0.1	0.3	NA	0.2	0.1	-0.1
Cocaine	8.2	6.0	5.7	3.8	2.4	2.0	-0.4
Crack ^c	NA	1.0	1.2	0.7	0.4	0.4	0.0
Other Cocaine ^j	NA	4.8	4.8	3.4	2.1	1.8	-0.3
MDMA ⁱ	NA	NA	NA	0.4	0.2	0.1	-0.1
Heroin	0.1	0.1	0.1	0.1	0.1	0.0	-0.1
Other Opiates ^a	0.9	0.9	0.7	0.7	0.7	0.6	-0.1
Stimulants, Adjusted ^{a,d}	4.0	3.2	2.7	2.1	1.9	1.5	-0.4
Crystal Methamphetamine("Ice") ⁱ	NA	NA	NA	NA	0.1	0.0	-0.1
Sedatives ^a	0.9	0.8	0.7	0.5	NA	NA	NA
Barbiturates ^a	0.7	0.7	0.7	0.5	0.6	0.5	-0.1
Methaqualone ^a	0.3	0.2	0.1	0.0	NA	NA	NA
Tranquilizers ^a	1.8	1.6	1.4	1.2	1.1	0.9	-0.2
Alcohol	75.1	75.4	74.0	72.4	71.2	70.6	-0.6
Cigarettes	31.1	30.9	28.9	28.6	27.7	28.2	+0.5
Steroids ^f	NA	NA	NA	0.2	0.1	0.2	+0.1

NOTES: Level of significance of difference between the two most recent years:

s = .05, ss = .01, sss = .001.

NA indicates data not available.

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

^b This drug was asked about in four of the five questionnaire forms in 1986-89 (N was four-fifths of N indicated), and five of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 5400.

^c This drug was asked about in two of the five questionnaire forms in 1987-89, and in all six questionnaire forms in 1990-1991.

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

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

^f This drug was asked about in one questionnaire form. Total N in 1991 is approximately 1300.

^g Adjusted for underreporting of PCP. See text.

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

ⁱ This drug was asked about in two questionnaire forms. Total N in 1991 is approximately 2600.

^j This drug was asked about in one of the five questionnaire forms in 1987-89, and in four of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 4100.

TABLE 43

Trends in Thirty-Day Prevalence of Daily Use of Various Types of Drugs
Among Respondents of Modal Age 19-28
(Entries are percentages)

	Percent using daily in last thirty days						'90-'91 change ^h
	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(6900)	(6800)	(6700)	(6600)	(6700)	(6600)	
Marijuana	4.1	4.2	3.3	3.2	2.5	2.3	-0.2
Inhalants ^b	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Inhalants, Adjusted ^{b,e}	0.0	0.0	0.0	NA	0.1	0.0	-0.1
Nitrites ^f	0.0	0.0	0.1	NA	0.1	0.0	-0.1
Hallucinogens	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hallucinogens, Adjusted ^g	0.0	0.0	0.0	NA	0.0	0.0	0.0
LSD ^f	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PCP ^f	0.0	0.0	0.1	NA	0.1	0.0	-0.1
Cocaine	0.2	0.1	0.2	0.1	0.0	0.1	+0.1
Crack ^c	NA	0.0	0.1	0.0	0.0	0.0	0.0
Other Cocaine ^j	NA	0.1	0.1	0.0	0.0	0.1	+0.1
MDMA ("Ecstasy") ⁱ	NA	NA	NA	0.0	0.0	0.0	0.0
Heroin	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Opiates ^a	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stimulants, Adjusted ^{a,d}	0.2	0.2	0.1	0.1	0.1	0.1	0.0
Crystal Methamphetamine ("Ice") ⁱ	NA	NA	NA	NA	0.0	0.0	0.0
Sedatives ^a	0.0	0.0	0.1	0.0	NA	NA	NA
Barbiturates ^a	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Methaqualone ^a	0.0	0.0	0.0	0.0	NA	NA	NA
Tranquilizers ^a	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alcohol							
Daily	6.1	6.6	6.1	5.5	4.7	4.9	+0.2
5+ drinks in a row in last 2 weeks	36.1	36.2	35.2	34.8	34.3	34.7	+0.4
Cigarettes							
Daily	25.2	24.8	22.7	22.4	21.3	21.7	+0.4
Half-pack or more per day	20.2	19.8	17.7	17.3	16.7	16.0	-0.7
Steroids ^f	NA	NA	NA	0.0	0.0	0.0	0.0

NOTES: Level of significance of difference between the two most recent years:

$s = .05$, $ss = .01$, $sss = .001$.

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

^bThis drug was asked about in four of the five questionnaire forms in 1986-89, and five of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 5400.

^cThis drug was asked about in two of the five questionnaire forms in 1987-89, and in all six questionnaire forms in 1990-1991.

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

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

^fThis drug was asked about in one questionnaire form. Total N in 1991 is approximately 1300.

^gAdjusted for underreporting of PCP. See text.

^hAny apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding.

ⁱThis drug was asked about in two questionnaire forms. Total N in 1991 is approximately 2600.

^jThis drug was asked about in one of the five questionnaire forms in 1987-89, and in four of the six questionnaire forms in 1990-1991. Total N in 1991 is approximately 4100.

TABLE 44

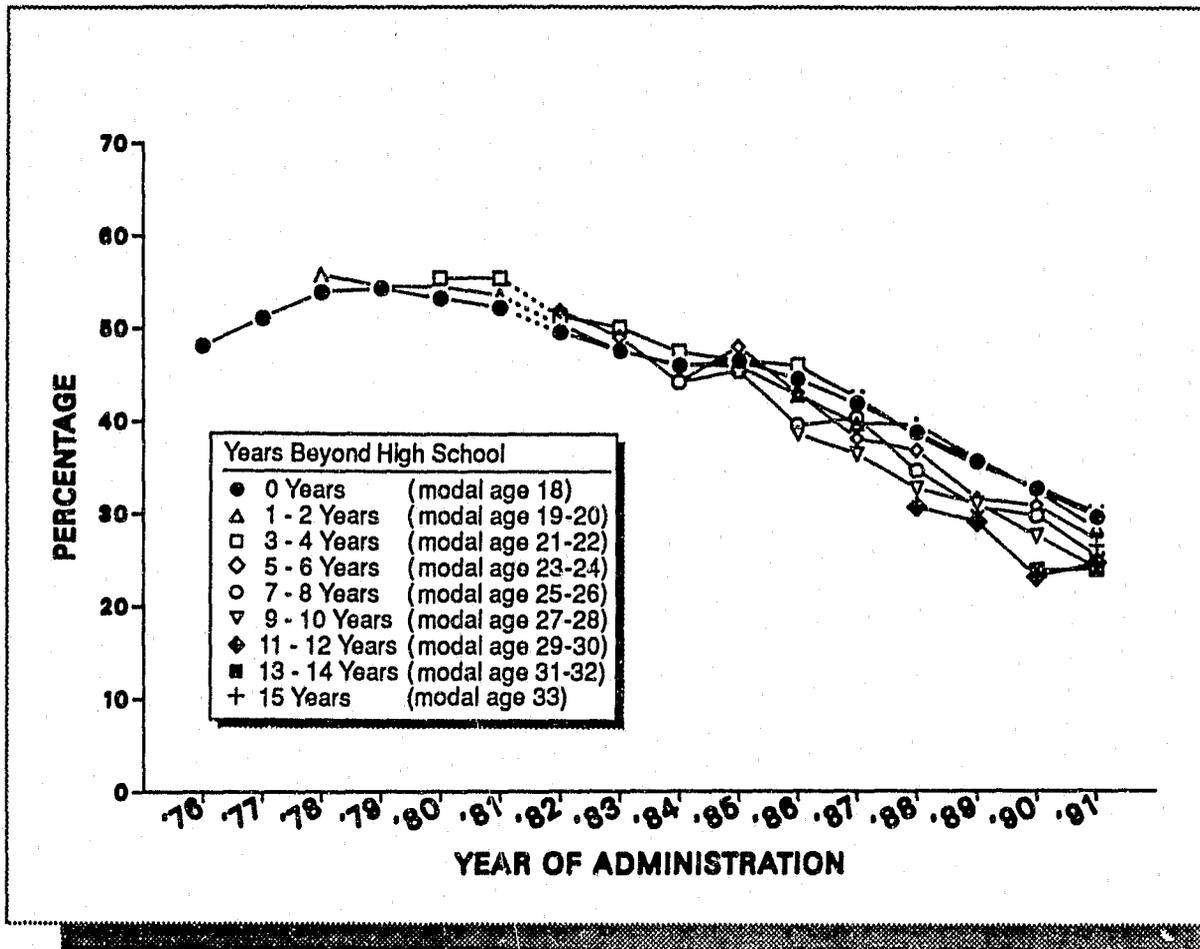
Trends in Annual and Thirty-Day Prevalence of An Illicit Drug Use Index
Among Respondents of Modal Age 19-28, by Sex
(Entries are percentages)

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>'89-'90</u> <u>change</u>
Percent reporting use in last twelve months							
Any Illicit Drug	41.9	39.3	36.3	32.8	30.7	27.0	-3.7 ^{sss}
Males	45.3	42.6	39.5	35.7	33.6	30.0	-3.6 ^{ss}
Females	39.0	36.5	33.6	30.5	28.3	24.5	-3.8 ^{sss}
Any Illicit Other Drug than Marijuana	27.0	23.9	21.3	18.3	16.7	14.3	-2.4 ^{sss}
Males	30.4	26.5	23.8	21.0	19.1	16.4	-2.7 ^{ss}
Females	24.0	21.6	19.4	16.2	14.7	12.5	-2.2 ^{ss}
Percent reporting use in last thirty days							
Any Illicit Drug	25.8	23.4	20.5	17.7	15.9	15.1	-0.8
Males	29.9	27.1	23.7	21.1	18.8	18.3	-0.5
Females	22.2	20.2	17.8	15.0	13.5	12.5	-1.0
Any Illicit Drug Other than Marijuana	13.0	10.7	9.5	7.5	6.0	5.4	-0.6
Males	15.2	12.3	10.6	9.1	6.8	6.6	-0.2
Females	11.0	9.4	8.7	6.2	5.3	4.4	-0.9
Approx. Wtd. N							
All Respondents	(6900)	(6800)	(6700)	(6600)	(6700)	(6600)	
Males	(3200)	(3100)	(3000)	(2900)	(3000)	(3000)	
Females	(3700)	(3800)	(3700)	(3700)	(3700)	(3600)	

NOTES: Level of significance of difference between the two most recent years;
s = .05, ss = .01, sss = .001.

FIGURE 50

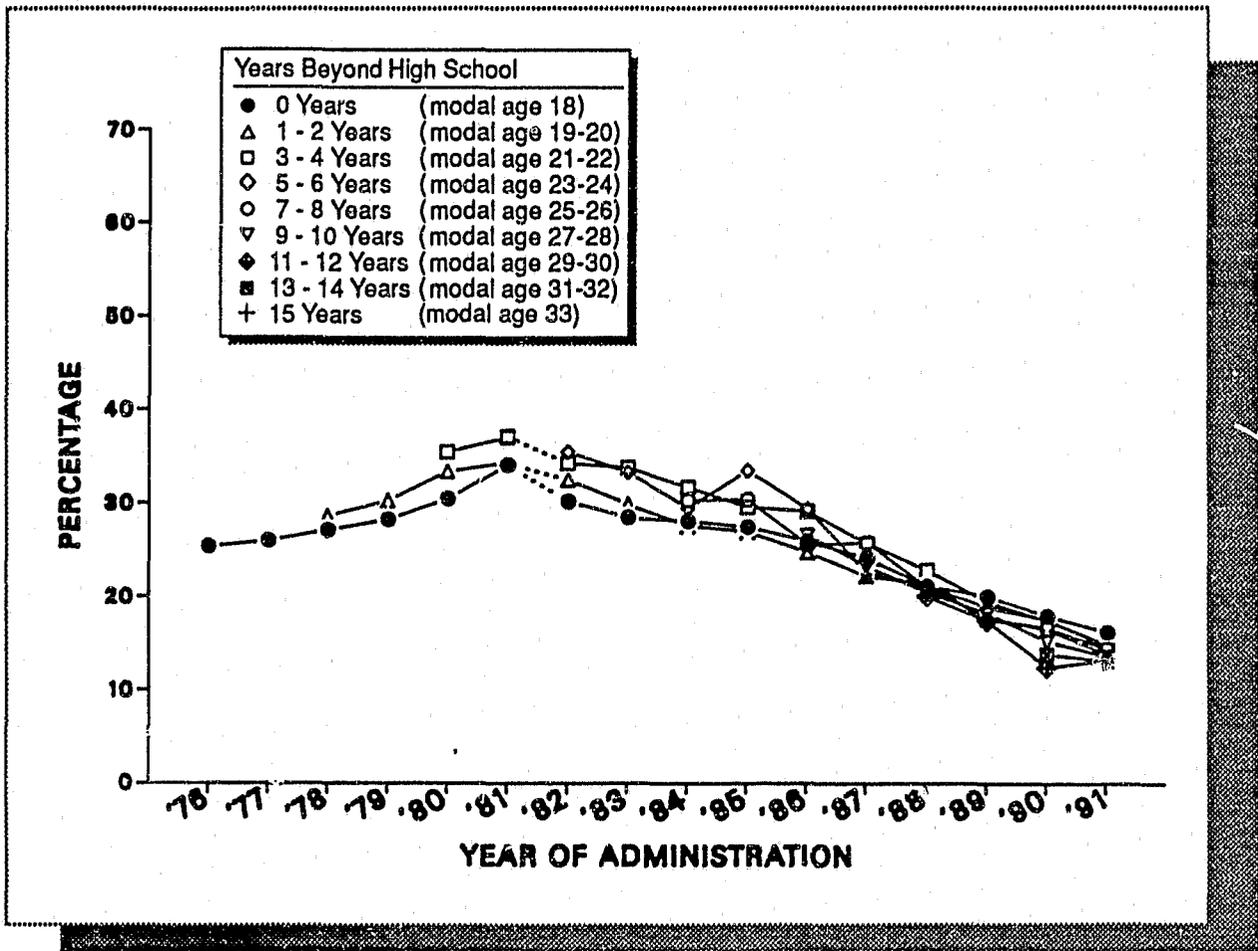
Any Illicit Drug: Trends in Annual Prevalence Among Young Adults by Age Group



NOTE: The dotted lines between 1981 and 1982 denote the change in the amphetamine question.

FIGURE 51

Any Illicit Drug Other than Marijuana: Trends in Annual Prevalence Among Young Adults By Age Group



NOTE: The dotted lines between 1981 and 1982 denote the change in the amphetamine question.

FIGURE 52a

Marijuana: Trends in Annual Prevalence Among Young Adults by Age Group

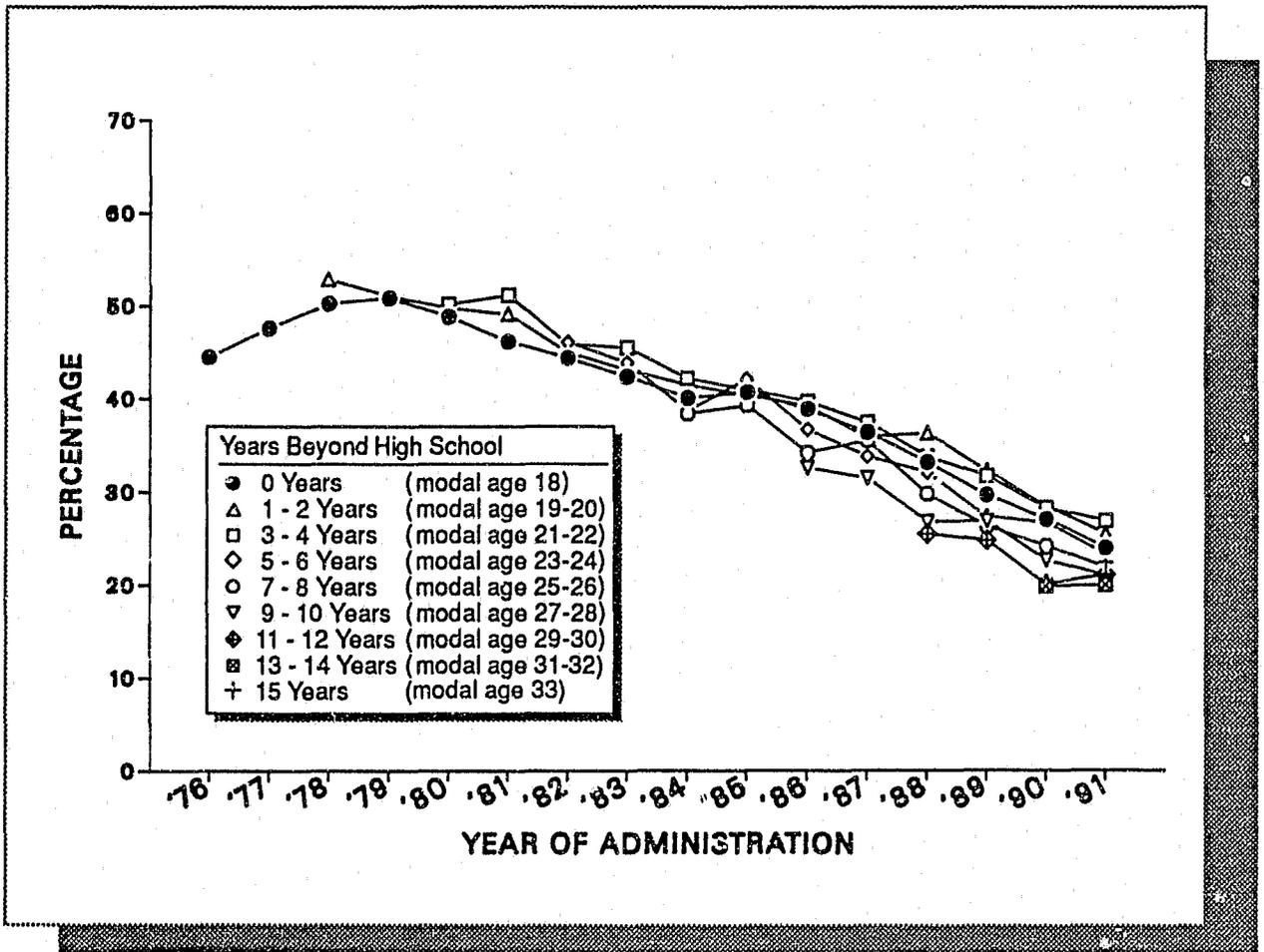
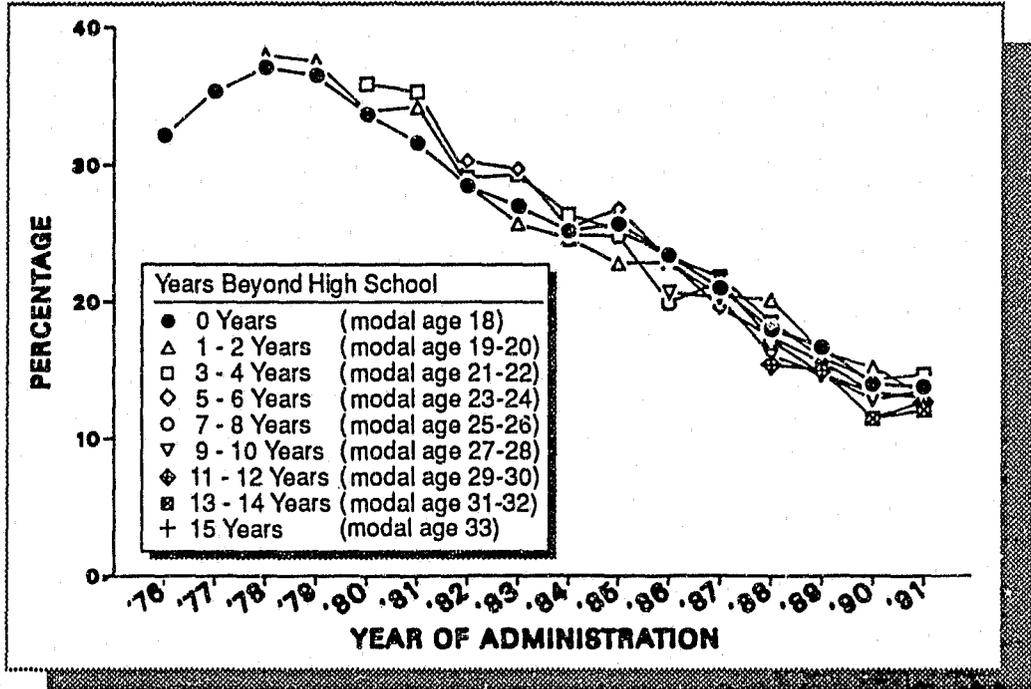


FIGURE 52b

Marijuana: Trends in Thirty-Day Prevalence Among Young Adults by Age Group



Marijuana: Trends in Thirty-Day Prevalence of Daily Use Among Young Adults

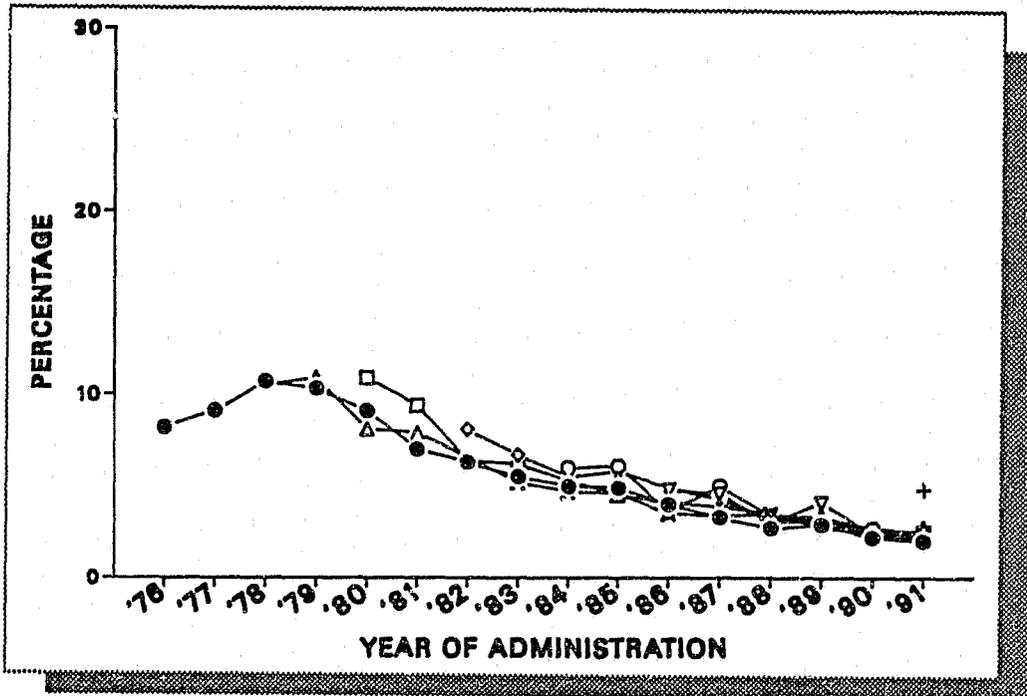
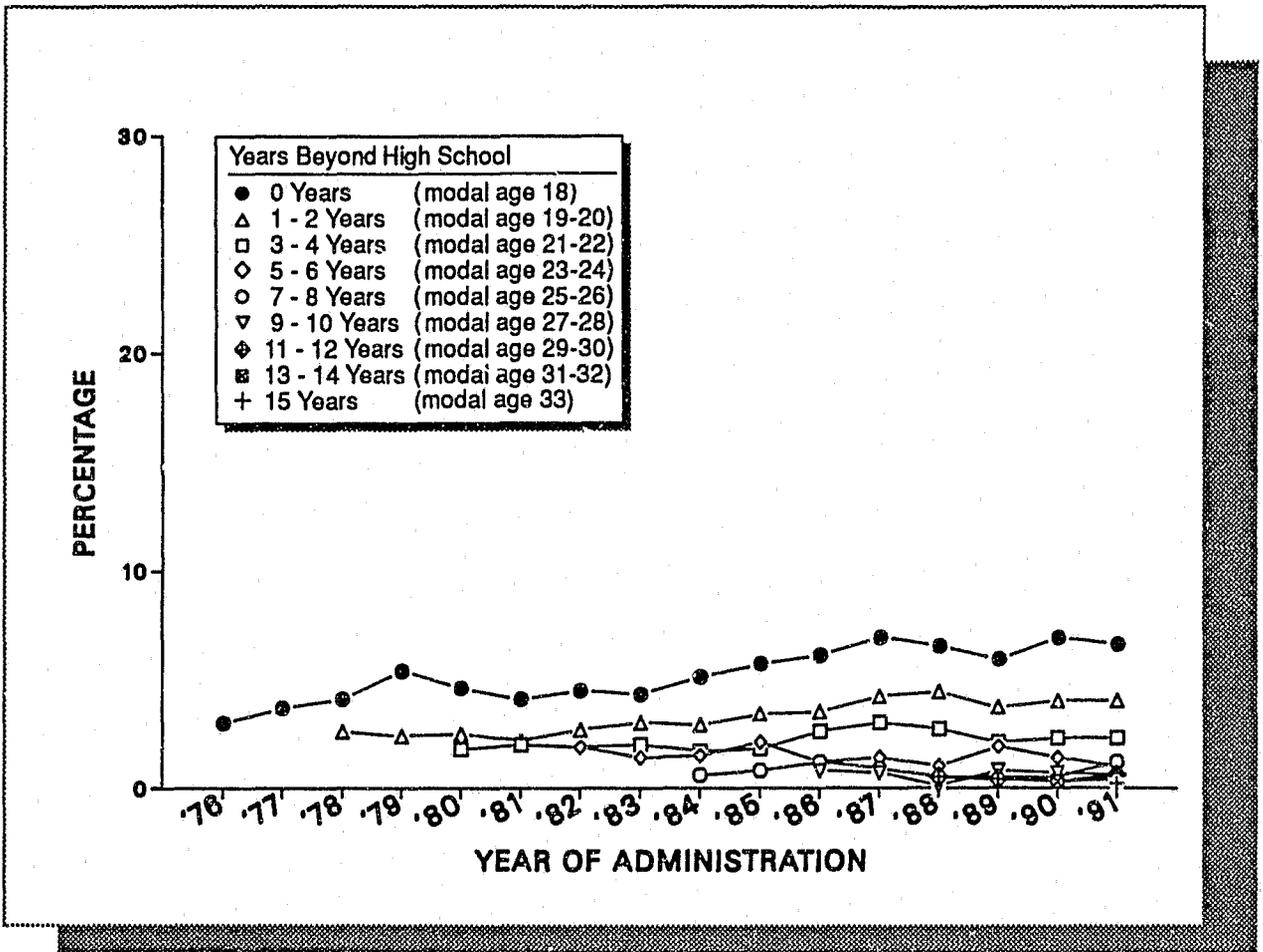


FIGURE 53

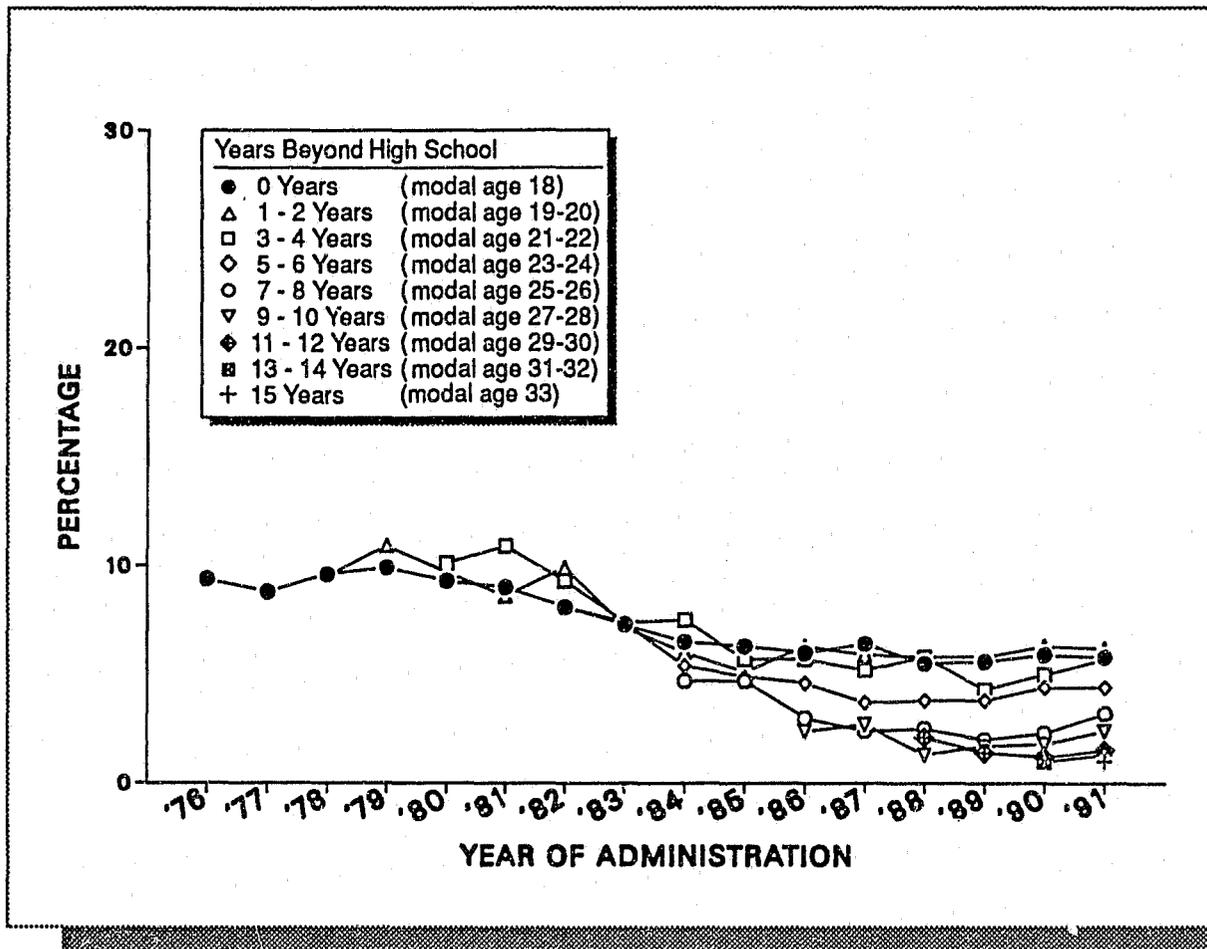
Inhalants* : Trends in Annual Prevalence Among Young Adults by Age Group



*Unadjusted for the possible underreporting of amyl and butyl nitrites. Chapter 5, Volume I, shows that such an adjustment would flatten the trend line for seniors considerably, because the line was adjusted up more in the earlier years, when nitrite use was more prevalent.

FIGURE 54

Hallucinogens*: Trends in Annual Prevalence Among Young Adults
by Age Group



*Unadjusted for the possible underreporting of PCP.

FIGURE 55

LSD: Trends in Annual Prevalence Among Young Adults
by Age Group

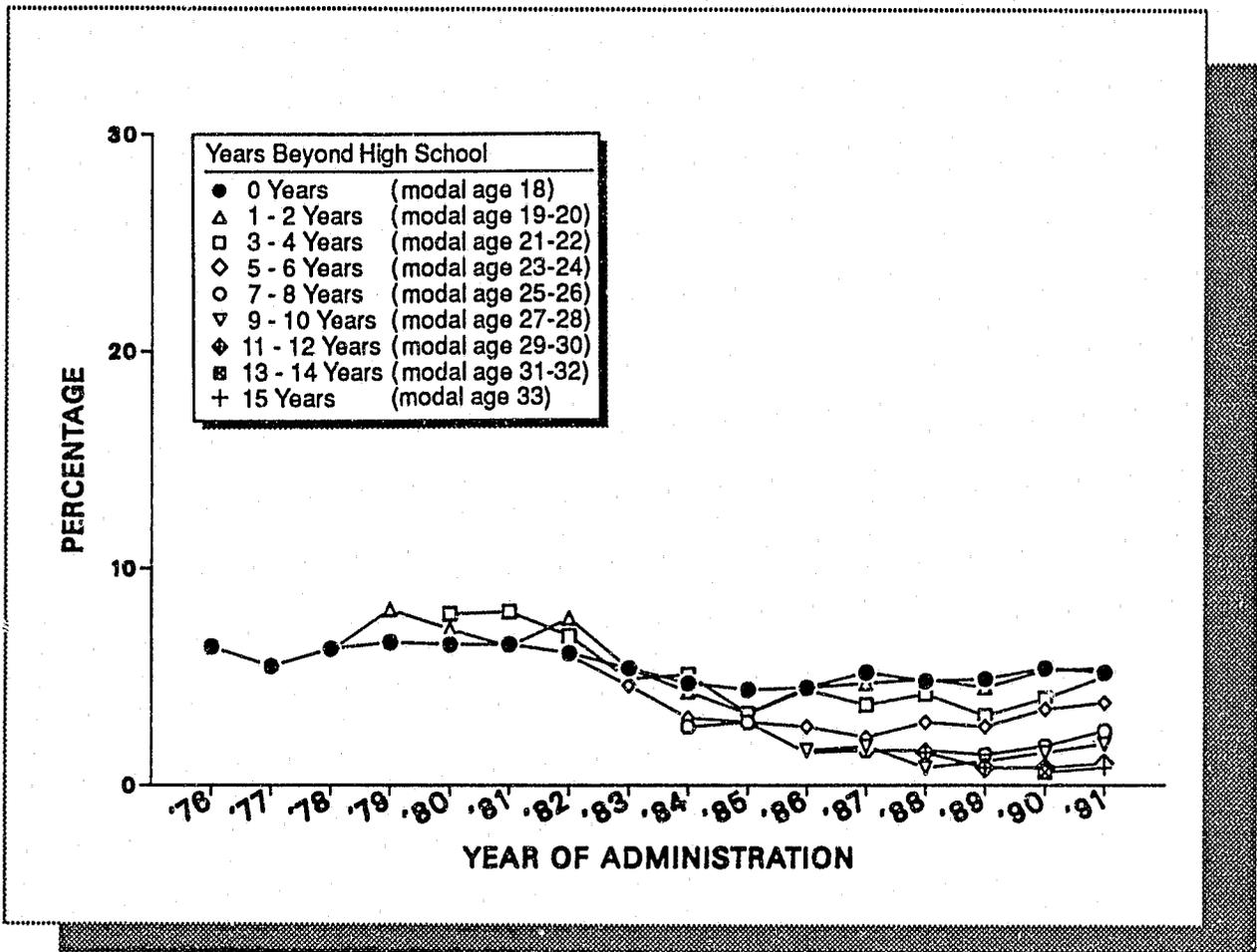


FIGURE 56

Hallucinogens Other than LSD: Trends in Annual Prevalence Among Young Adults by Age Group

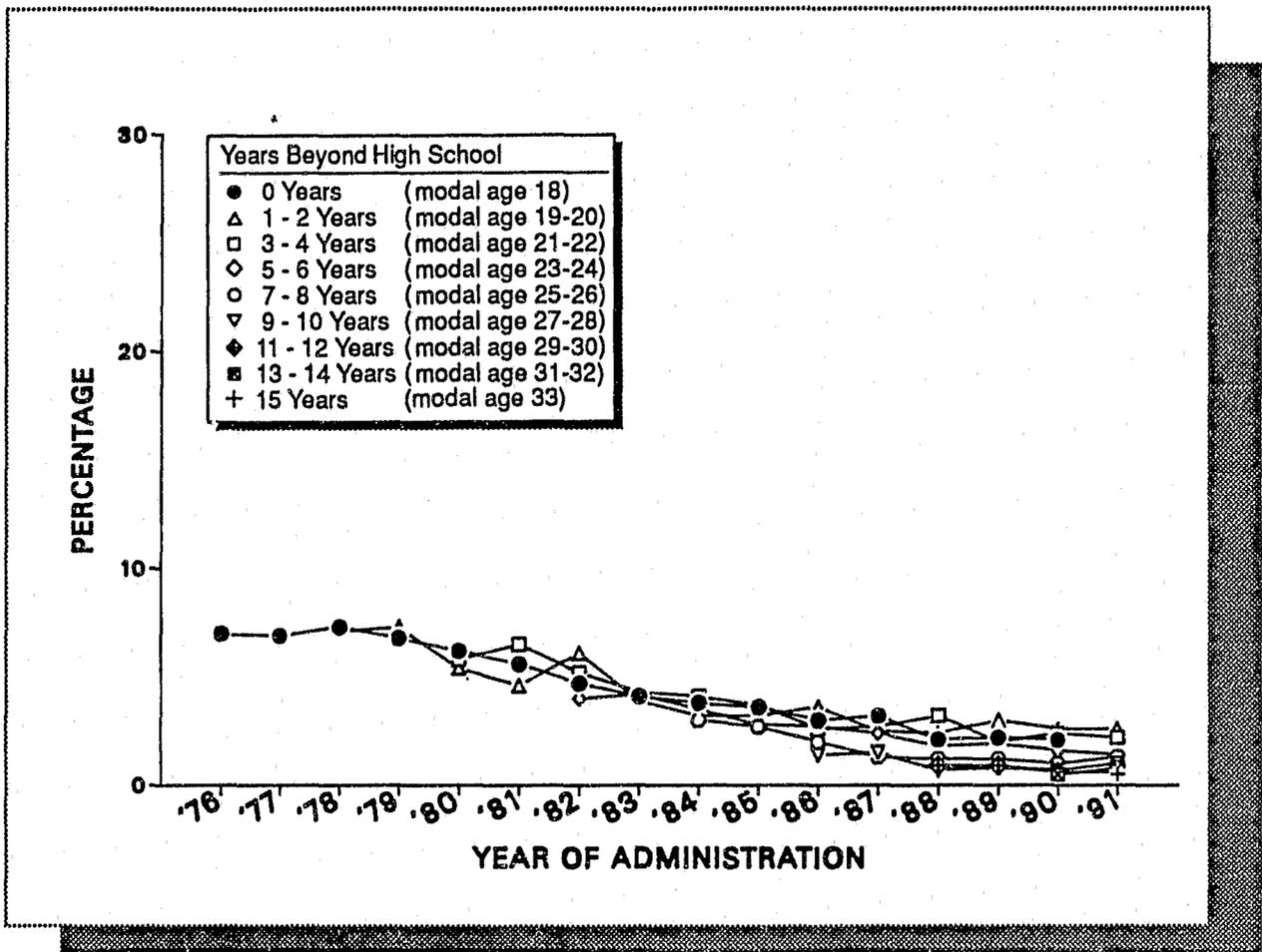


FIGURE 57

Cocaine: Trends in Annual Prevalence Among Young Adults
by Age Group

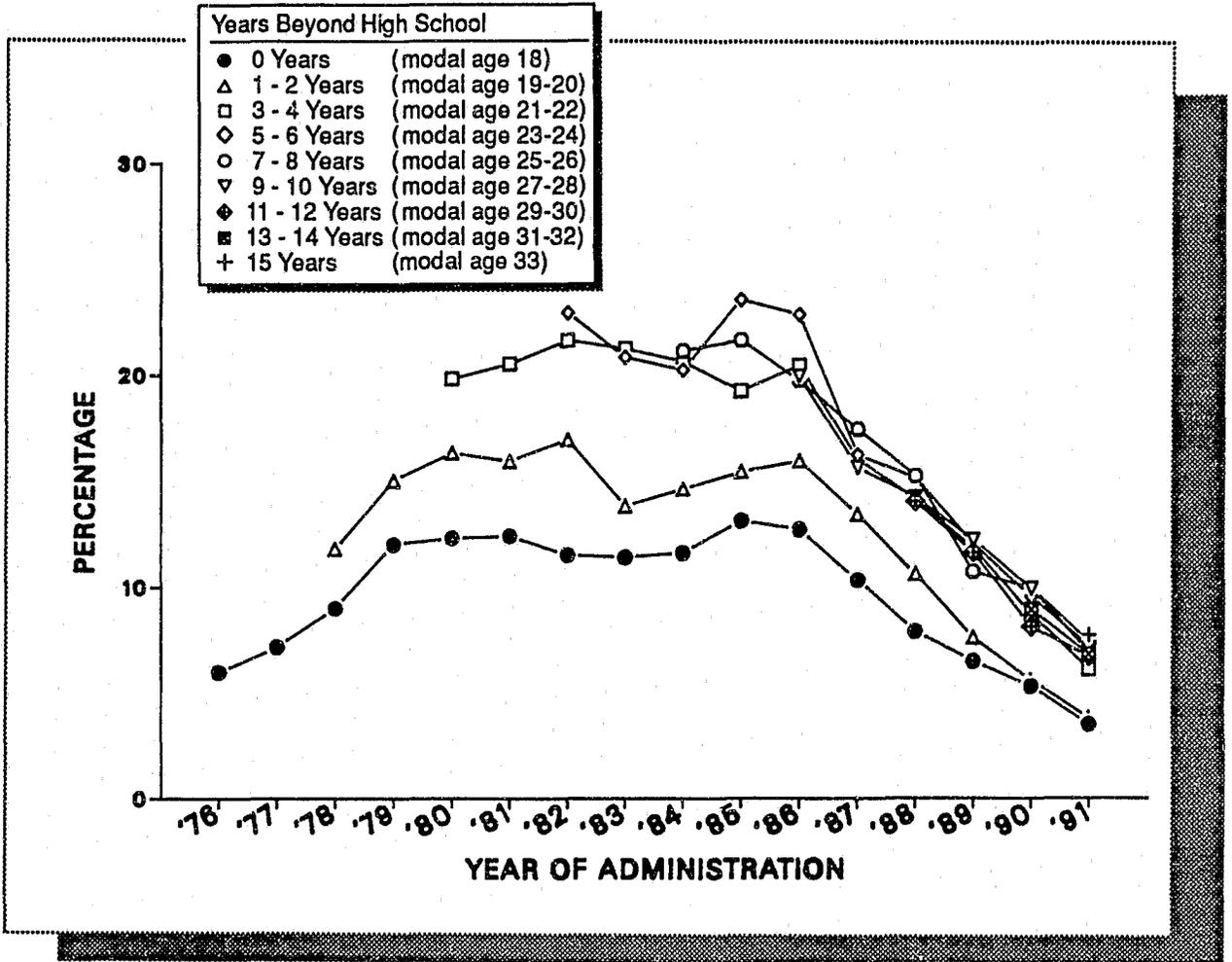


FIGURE 58

Crack: Trends in Annual Prevalence Among Young Adults
by Age Group

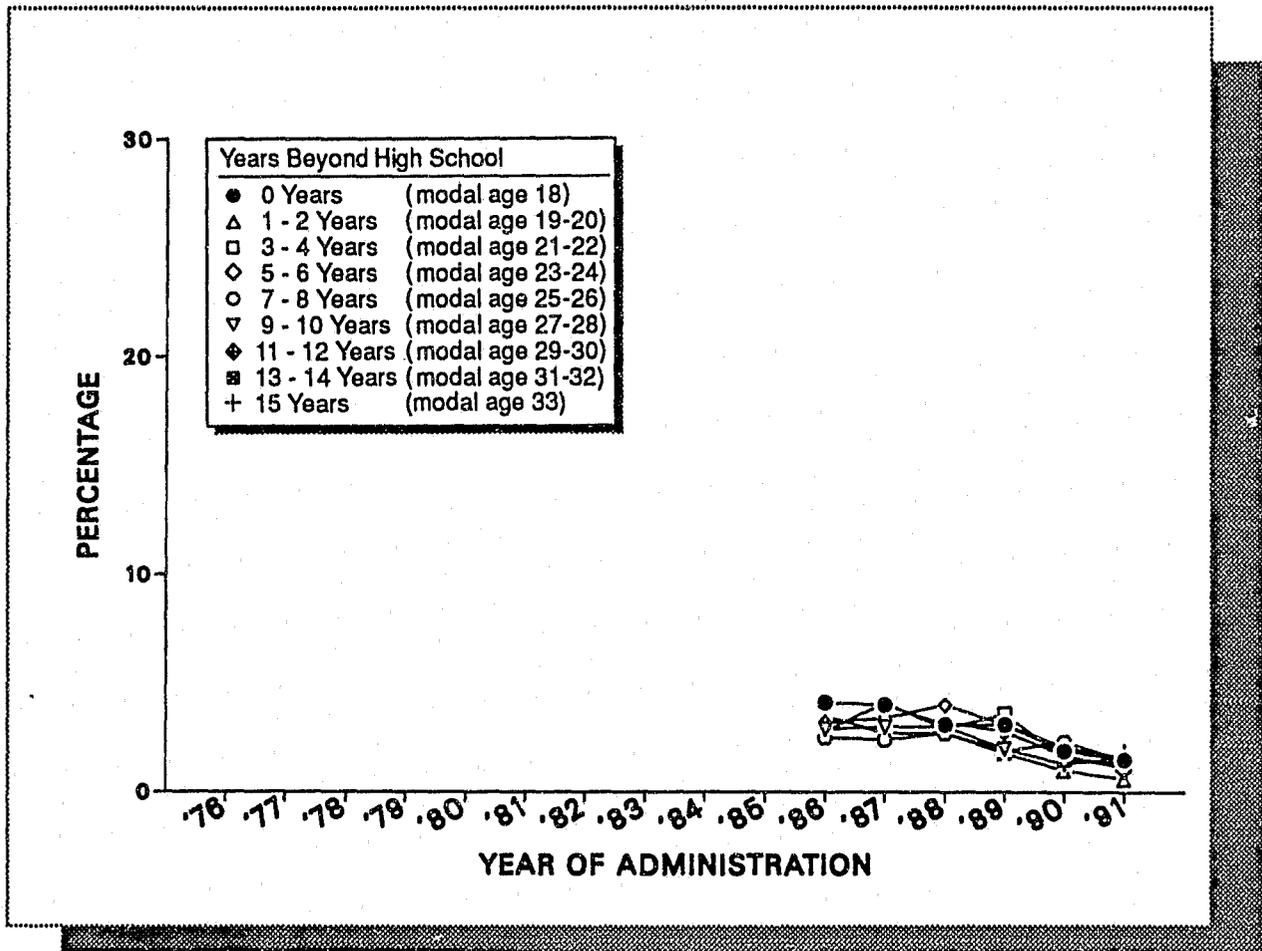


FIGURE 59

Other Opiates: Trends in Annual Prevalence Among Young Adults
by Age Group

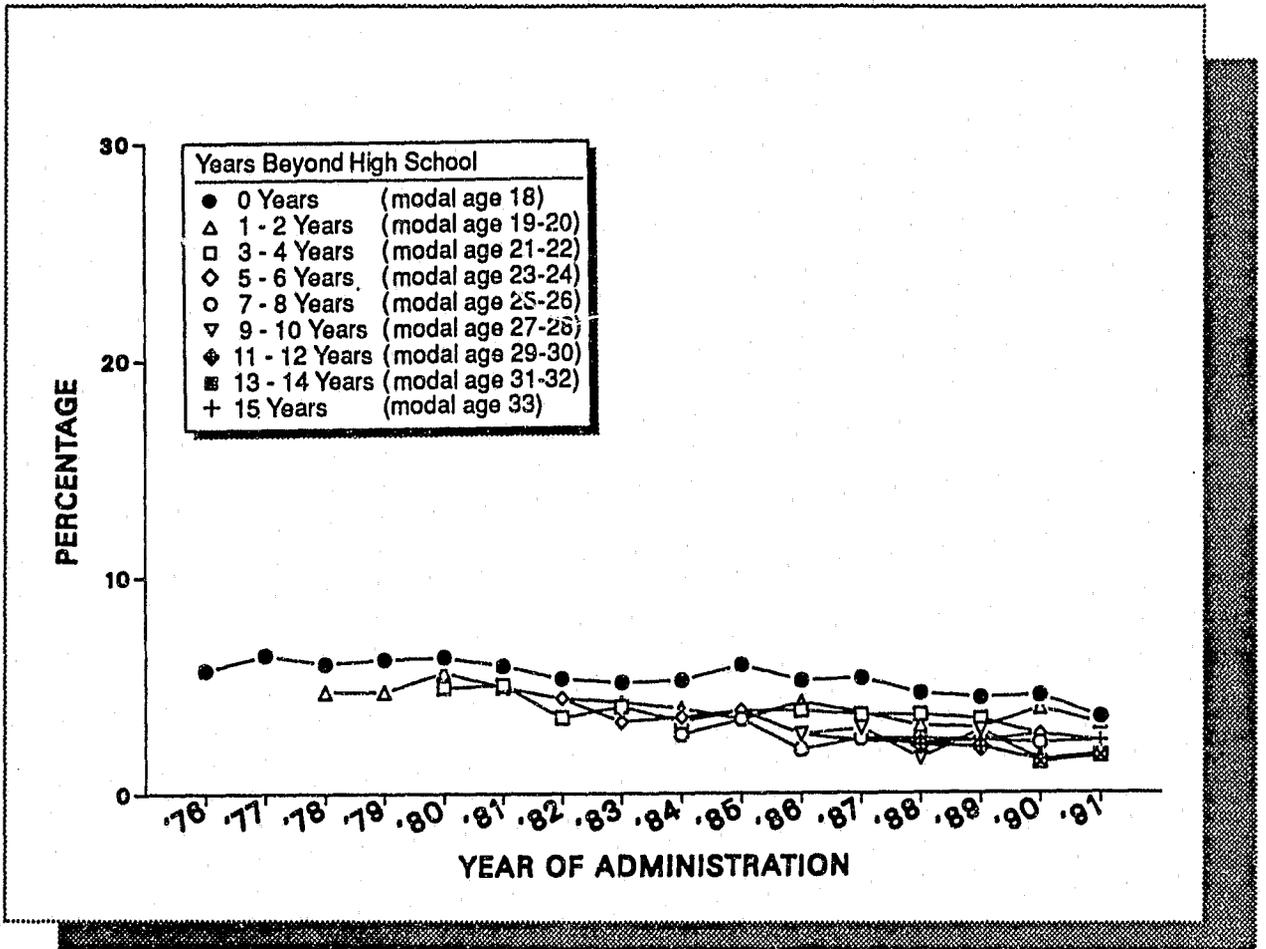
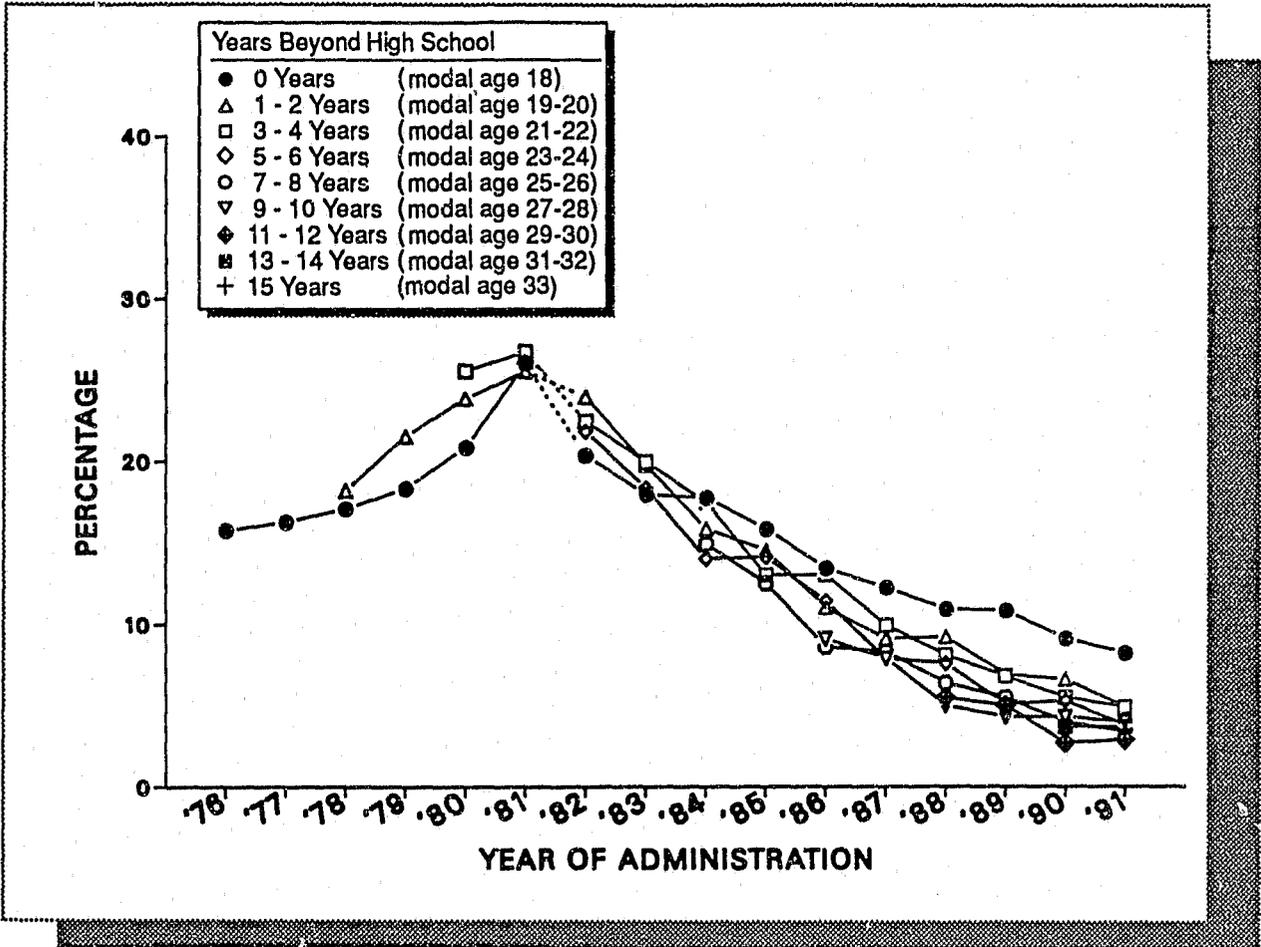


FIGURE 60

Stimulants: Trends in Annual Prevalence Among Young Adults by Age Group



NOTE: The dotted lines between 1981 and 1982 denote the change in the amphetamine question.

FIGURE 61

Barbiturates: Trends in Annual Prevalence Among Young Adults
by Age Group

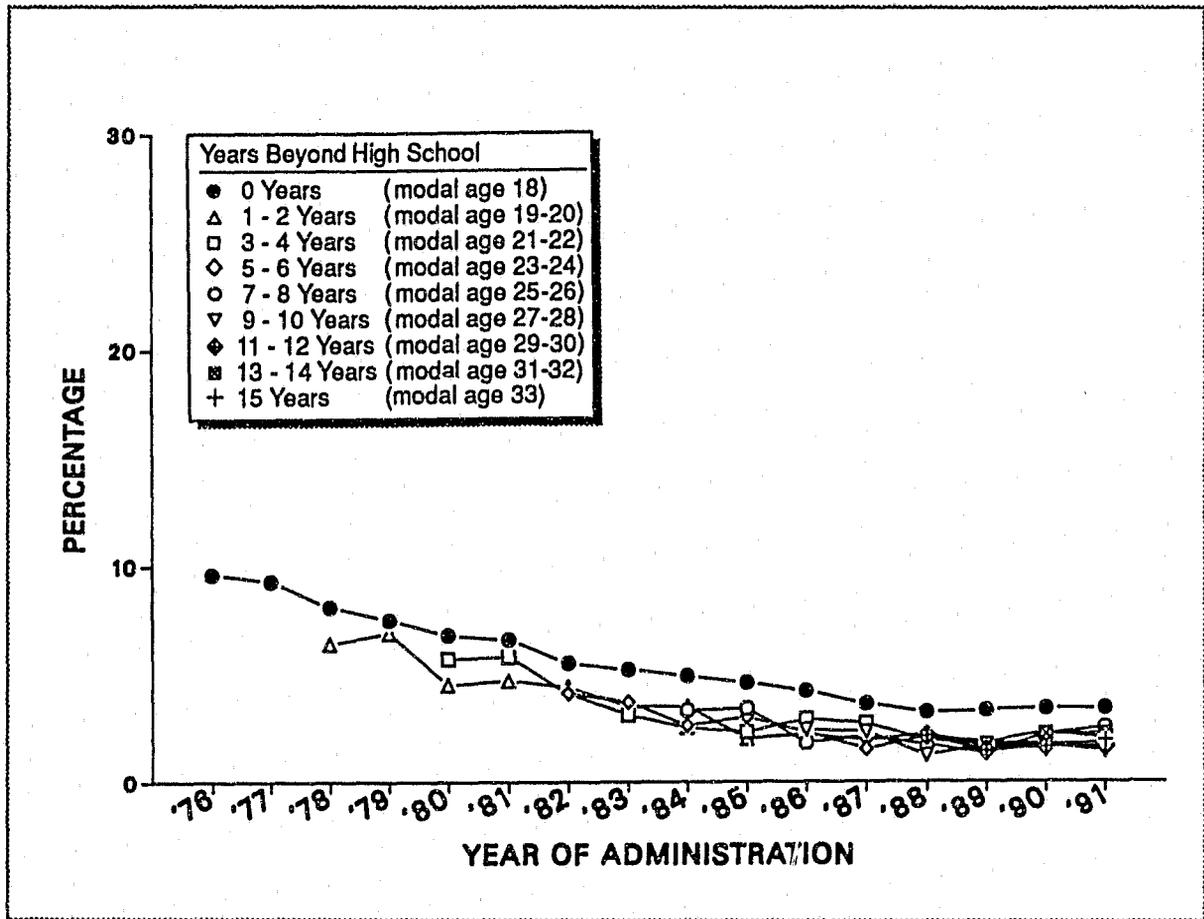


FIGURE 62

Tranquilizers: Trends in Annual Prevalence Among Young Adults by Age Group

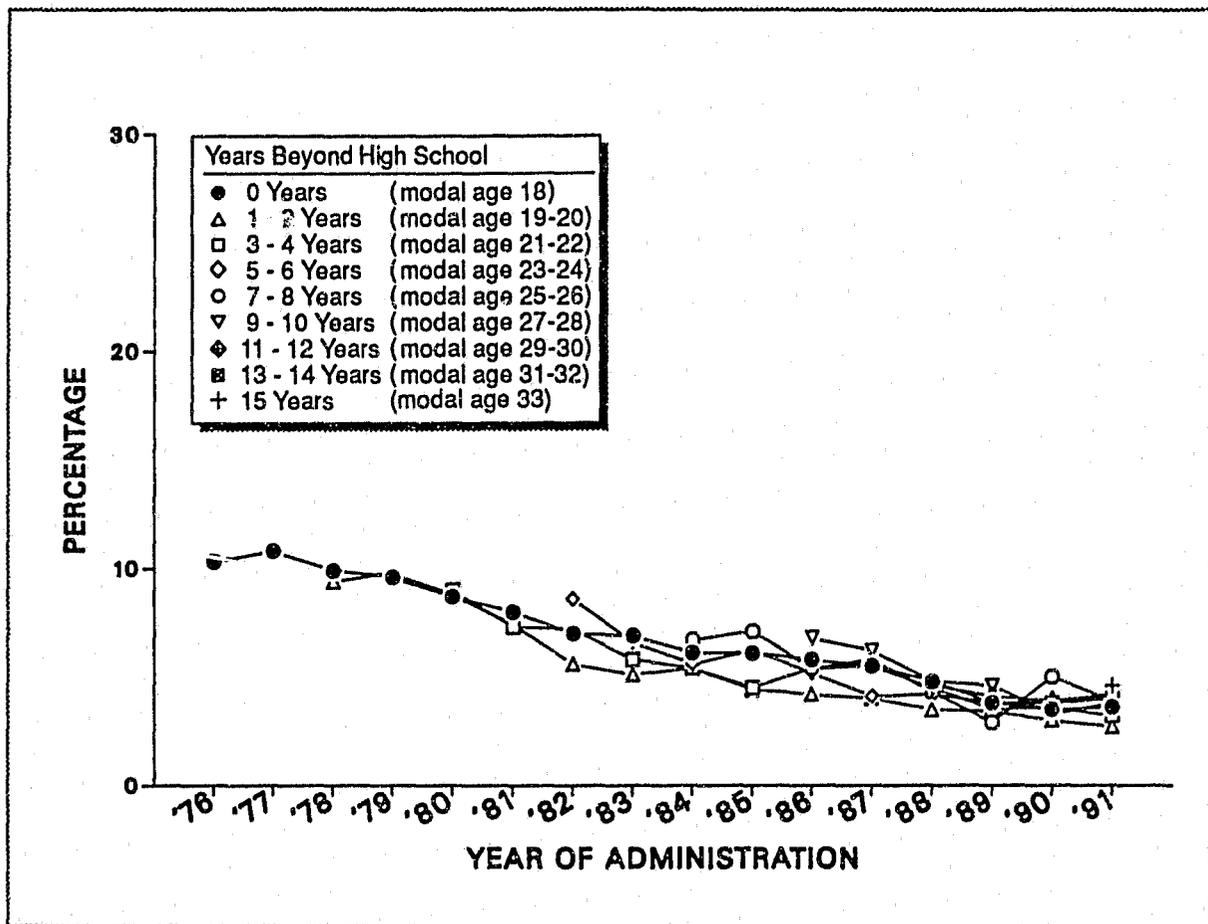


FIGURE 63a

Alcohol: Trends in Annual Prevalence Among Young Adults
by Age Group

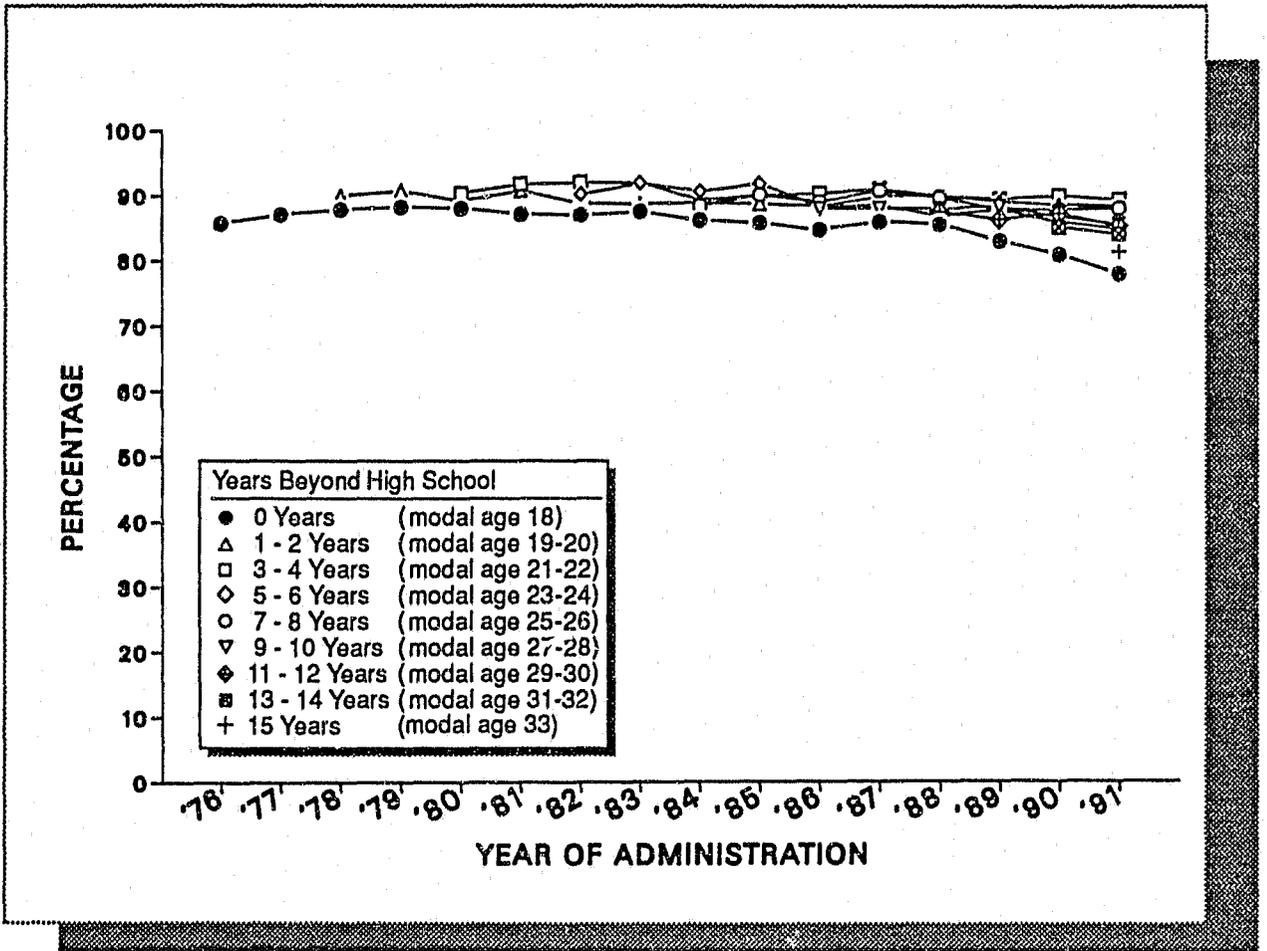
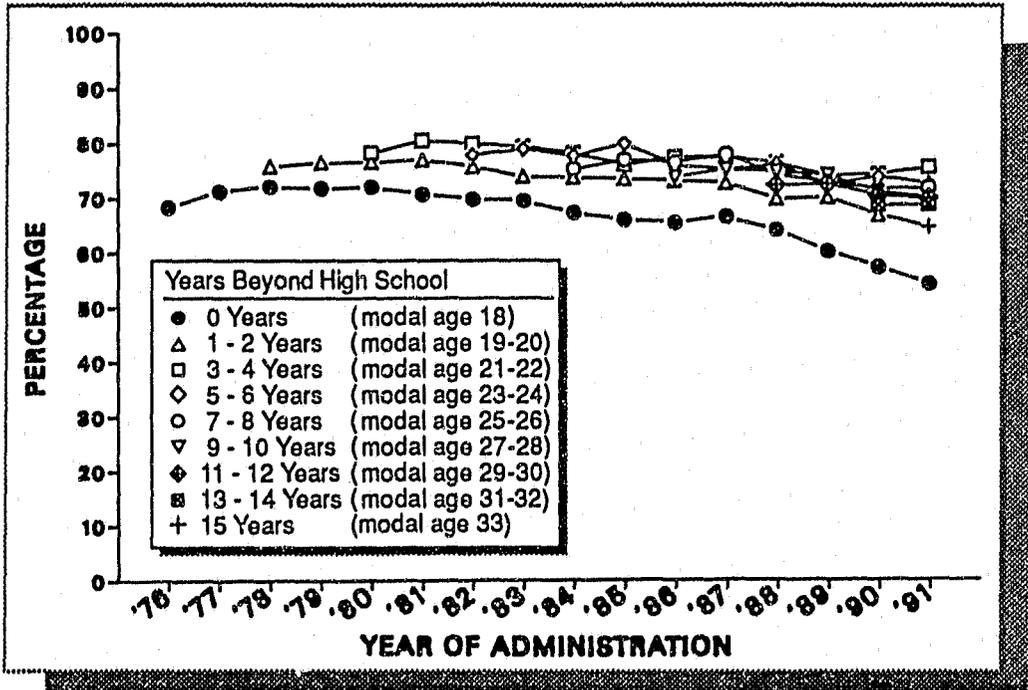


FIGURE 63b

Alcohol: Trends in Thirty-Day Prevalence Among Young Adults
by Age Group



Alcohol: Trends in Thirty-Day Prevalence of Daily Use Among Young Adults

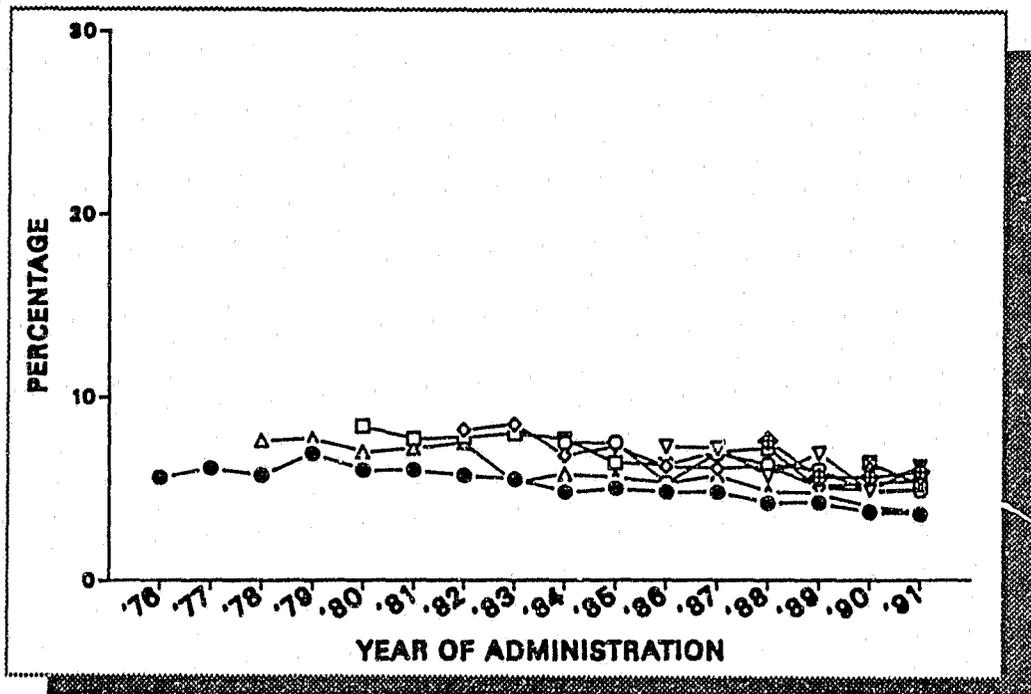


FIGURE 63c

Alcohol: Trends in Two-Week Prevalence of Five or More Drinks in a Row Among Young Adults by Age Group

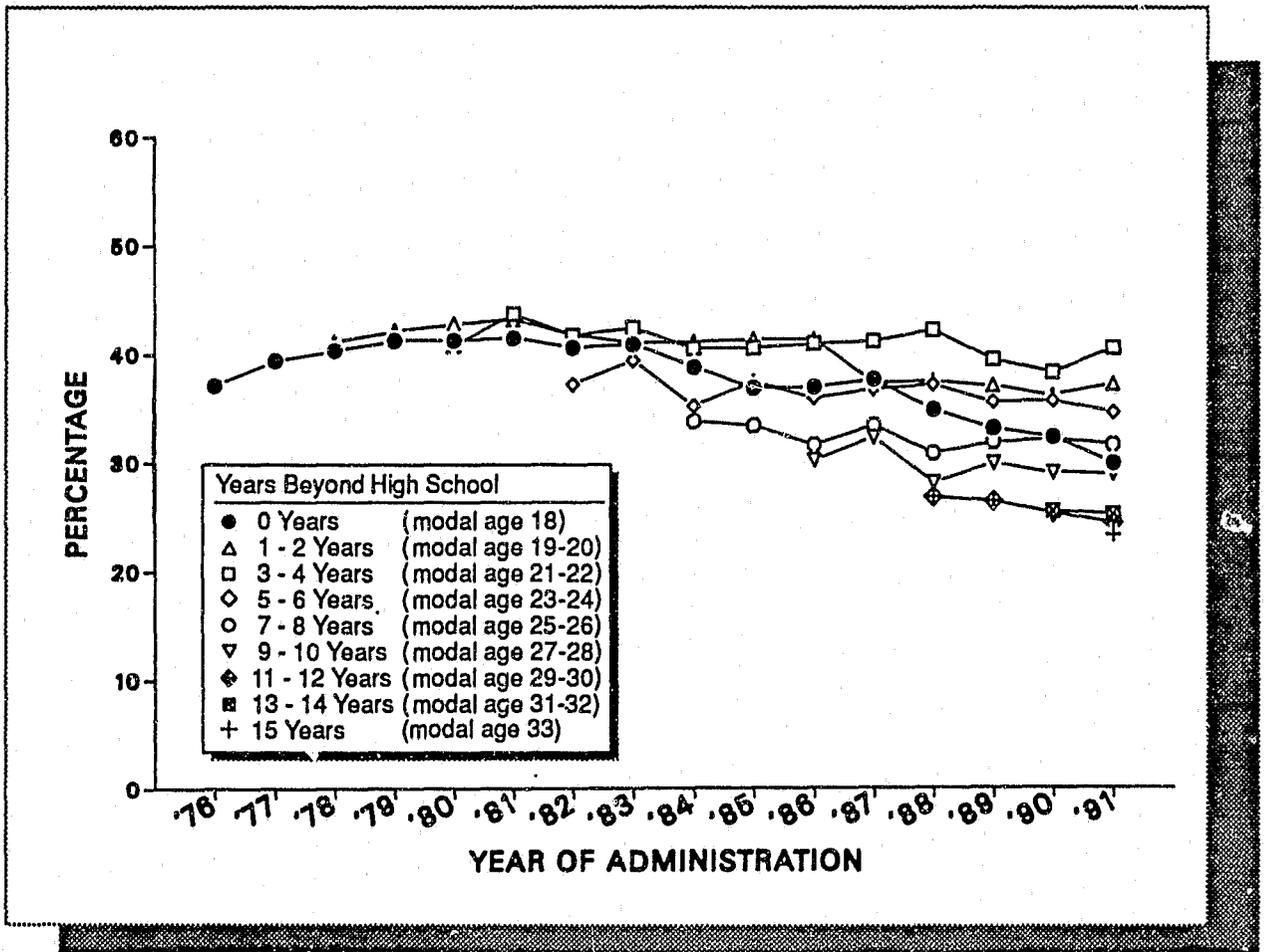
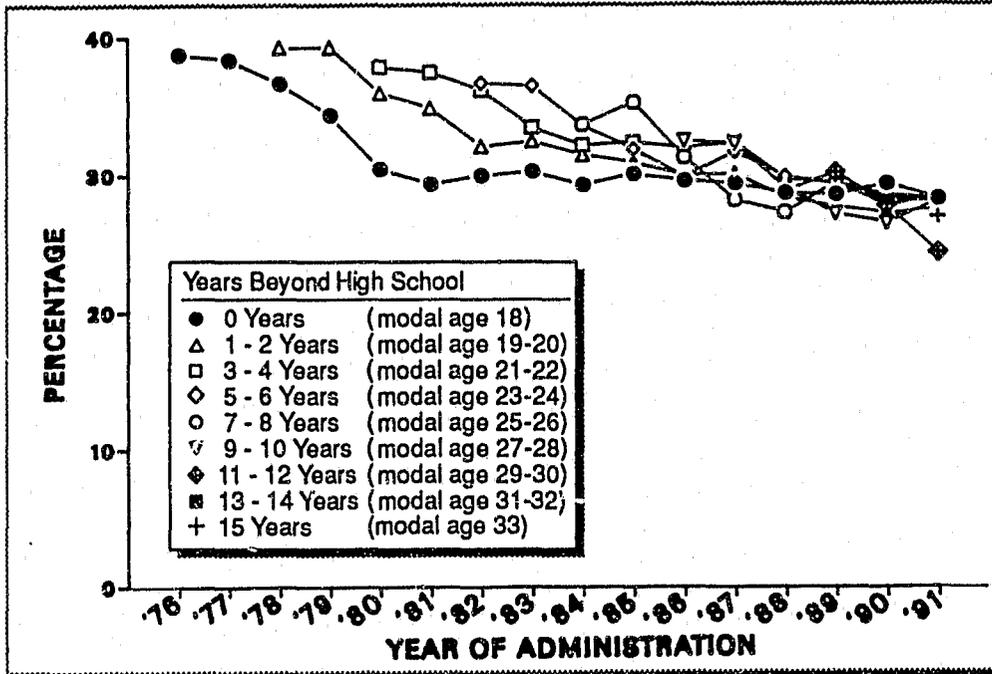


FIGURE 64a

Cigarettes: Trends in Thirty-Day Prevalence Among Young Adults by Age Group



Cigarettes: Trends in Thirty-Day Prevalence of Daily Use Among Young Adults

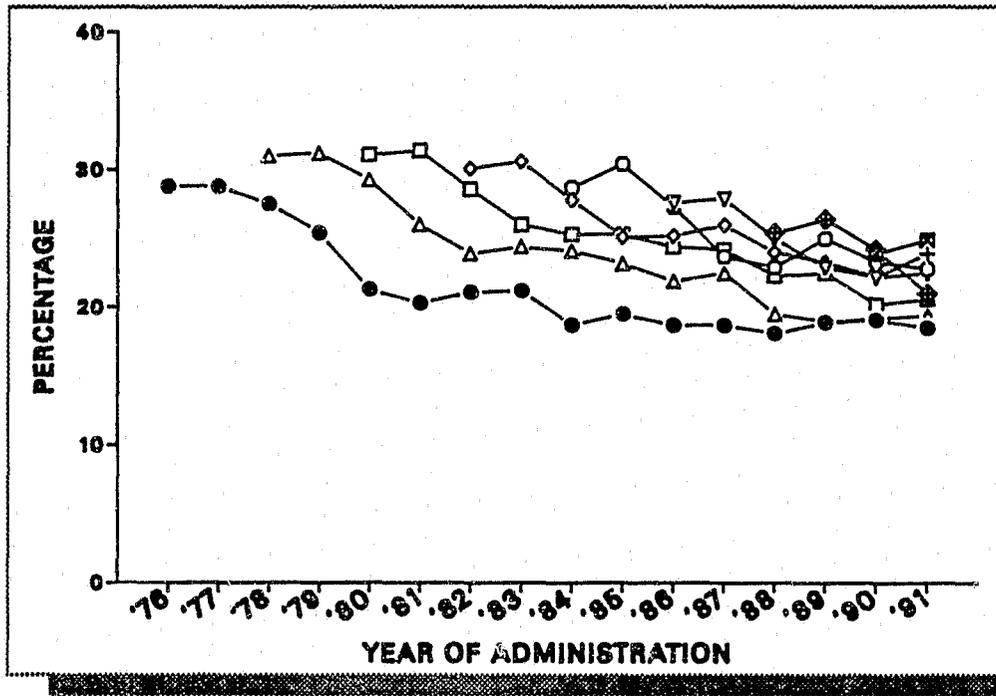
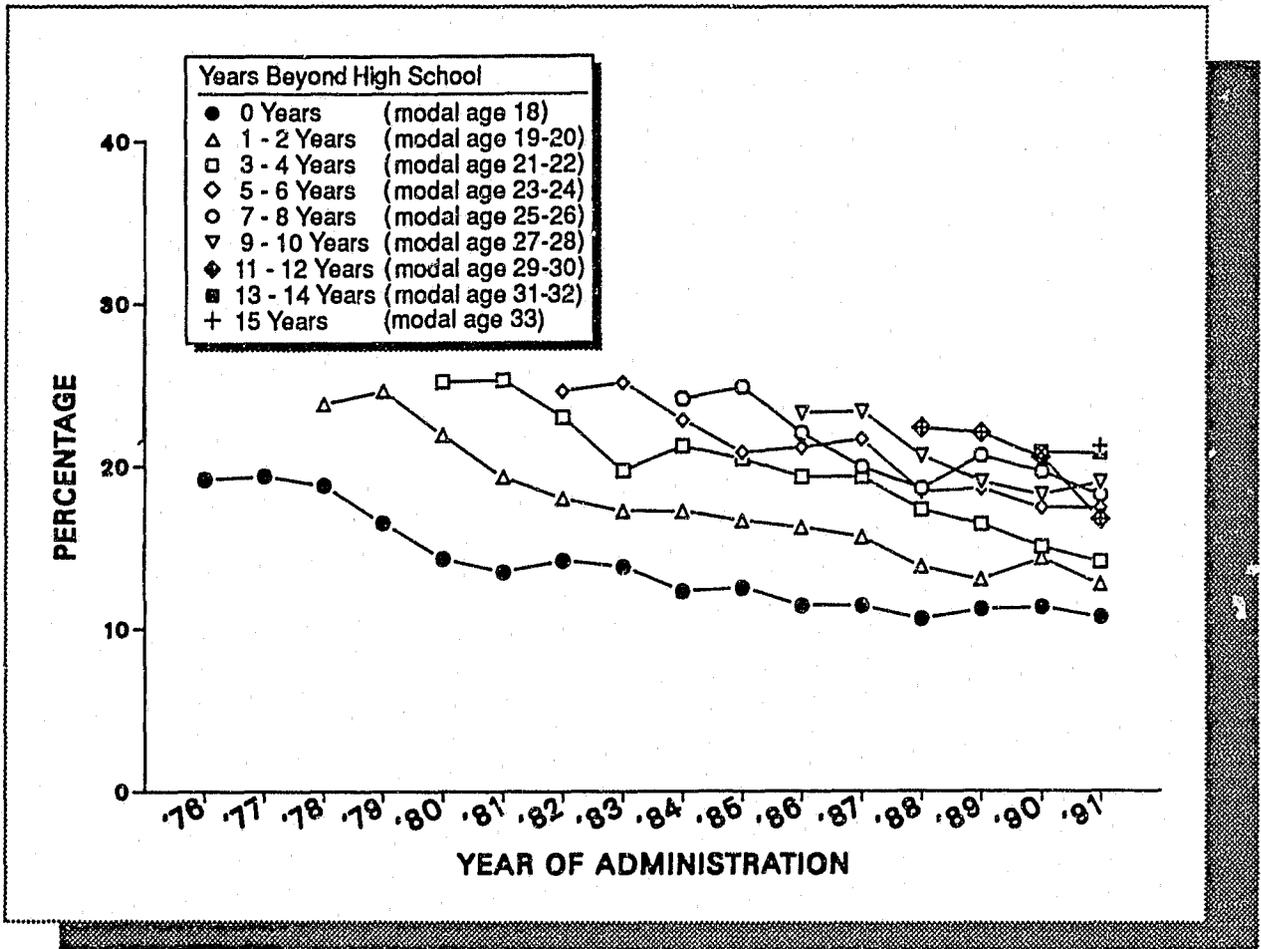


FIGURE 64b

Cigarettes: Trends in Thirty-Day Use of Half-Pack a Day or More Among Young Adults by Age Group



- Similarly for *LSD*, the 5.7% male-female difference in 1980 for 19 to 22 year olds (10.5% vs. 4.8% annual prevalence) narrowed to 3.3% by 1989 (5.7% vs. 2.4%) and a similar thing has happened to the use of *other hallucinogens* taken as a class. However, between 1989 and 1991 an overall increase in *LSD* use widened the difference again, and it stands at 4.2% (7.5% for males, 3.3% for females).
- Since 1986 annual *cocaine* prevalence dropped more among males than females, particularly in the 19 to 22 year age band, where the annual prevalence for males declined by 15.2% (to 5.7%) vs. 11.4% among females (to 4.3%). In the 23 to 26 year old age band there was also a drop in the sex difference since 1986: down 16.5% (to 9.4%) among males and 11.6% (to 5.7%) among females. Use among males in the 27-30 year old group also appears to be dropping faster (down 9.4% vs. 5.4% for females), although data for these respondents are available only since 1988.
- As *barbiturate* use has declined since 1980, sex differences have been nearly eliminated among both the 19 to 22 year olds (since 1984, at least) and among the two older age bands: annual prevalence stands between 1% and 3% for both sexes and all three age groups.
- The annual prevalence figures for *heroin* appear to have dropped among males in the 19 to 22 year old category since 1980 (from 0.6% to 0.3% in 1991). Rates for females remained very low at 0.1% to 0.3%.
- Both sexes have shown some decline in recent years in the use of *opiates other than heroin*, with a near elimination of previous sex differences.
- Since 1981, rates of *stimulant* use have been similar for males and females, and have shown substantial and parallel downward trends for both sexes, though males still tend to have slightly higher rates of use among the 23-30 year olds.
- Both sexes also have reported similar rates of *tranquilizer* use since 1980. In recent years, both sexes in all three age groupings have shown a gradual decline.
- *Inhalant* use has remained constant for both sexes in recent years, which means that it has remained roughly twice as high among males as females. Recall that use is considerably lower among the older age bands than among 19 to 22 year olds.
- For *alcohol*, 30-day prevalence rates have shown some decline since 1981 (of 8% to 10%) for both sexes in the 19 to 22 year old age group. And among this age group in 1991 there is still a large sex difference for *daily drinking*: 6.8% for males vs. 2.2% for

females; but not as large as it was in 1980 (11.5% vs. 4.2%). The sex differences are larger for each older age group (8.8% vs. 2.3% for 23–26 year olds, 10.4% vs. 2.3% for 27–30 year olds). There are still large sex differences in all age groups on *occasional heavy drinking* (five or more drinks in a row at least once in the past two weeks), although 19 to 22 year old males have shown some longer term decline in this statistic, from 54% in 1986 to 48% in 1991.

- Sex differences in *smoking* had remained small among the 19 to 22 year olds since 1980, with females generally averaging a 3% higher daily prevalence rate than males. In 1991, even this difference disappeared, with 20% of both sexes reporting daily use, and 13% reporting use of a half-pack or more per day. Among the 23 to 26 year olds daily rates have also been quite similar for the two sexes; the same has been true among 27 to 30 year olds since 1988 when the data were first available.

Regional Differences in Trends

- The follow-up respondent's state of residence was first determined in the 1987 survey, so trend data by region exist only for the interval since then.
- In general, the changes which have occurred since 1987 have been pretty consistent across regions, particularly in terms of the direction of the change—for the most part downward. (These changes have been examined for all 19 to 28 year olds combined to increase the reliability of the estimates.)
- There have been substantial drops in all four regions since 1987 for *any illicit drug, any illicit other than marijuana, marijuana, cocaine, and stimulants. Tranquilizer* use has also dropped in all four regions, but from relatively low levels to begin with.
- *Cocaine* continues to show a sharp decline in use in all regions; however, the proportional and absolute declines were greatest in the two regions which had attained the highest levels of use by the mid-80's—the West and the Northeast. This replicates the finding for seniors, and results in less regional variability in 1991 than in 1987.
- All four regions also have shown an appreciable drop in *crack* use since 1987. As was true for cocaine generally, the two regions having the highest rates (the West and the Northeast) have had large absolute and proportional declines, as did the North Central region, resulting in less regional variability in this form of drug use than was the case earlier. Among 19 to 28 year olds the West, Northeast, and South now have the highest annual prevalence rates (at 1.3%–1.4%) but these are not much different from that for the North Central region (0.9%).

- Rates of *inhalant* use have remained stable and quite low in all four regions in this age band.
- Questions about *MDMA* ("*ecstasy*") were added to the surveys in 1989, and showed use rates in both 1989 and 1990 to be higher in the West and the South (1990 annual rates of 2.5% and 1.9%), and lower in the Northeast and North Central (1.0% and 0.7%). In 1991, use fell (nonsignificantly) in all regions, leaving the South with the highest rate (1.2%), and the North Central with the lowest (0.2%).
- *LSD* has risen some in all four regions since 1987. The West has fairly consistently had the highest rate of use, though there are not large regional differences.
- There have been modest declines in *alcohol* use in all four regions since 1987 in current drinking and daily drinking. *Occasional heavy drinking* has remained fairly stable in all regions; the Northeast and North Central have prevalence rates about 10% higher than the South and West.
- Current *daily cigarette smoking* dropped only between 2 and 4 percentage points in all regions since 1987 among 19 to 28 year olds. The West consistently has had a much lower rate of daily smoking, and the South a somewhat lower rate, than the Northeast and North Central regions.

Trend Differences Related to Population Density

- In general, the proportion of young adults using *any illicit drug* has been declining in recent years in communities of all sizes. (Recall that five levels of population density are distinguished.) Among 19 to 22 year olds this decline began in 1982 and continues in 1991. The differences have narrowed slightly. The farm/country and small town strata have lower use than all of the other strata. For young adults aged 19-26, use currently tends to be highest in cities of over 500,000 population, but this is not true for the 27-30 year olds. The use of *any illicit drug other than marijuana* tells a similar story. While the very large cities tend to have the highest rates on both indexes, they are only slightly higher than the other urban areas.
- *Marijuana* use began declining in 1981 or 1982 among the 19 to 22 year olds in all community size categories, and it continued to decline in 1991. The larger cities, which had the highest rates of use, showed the largest declines, so the differences have narrowed considerably.
- *LSD* use among the 19 to 22 year olds has declined appreciably in the first half of the 80's. Since then there has been some increase in use in all strata. There has been little or no change among the

23 to 26 year olds since 1984, the earliest point recorded, but their annual prevalence has been consistently lower than in the younger age group. Nor have the 27-30 year olds, who have the lowest prevalence rates, shown any change since 1988. The use of *other hallucinogens* taken as a class has fallen in communities of all sizes among the 19-27 year olds.

- The important and continuing drop in *cocaine* use since 1986 occurred in all community-size strata for 19-22 year olds and for 23-26 year olds. For both age groups, 1990 annual prevalence levels in each size stratum are less than half what they were in 1986. There have been large declines among the 27 to 30 year olds since 1988, as well, in all community sizes; statistically significant drops occurred in both the large and very large city strata in 1991.

Because the declines have been greatest in the large cities, the differences among strata have narrowed, as with seniors; but cocaine use still is positively correlated with community size.

- *Crack* use among all age groups peaked in 1987 or 1988 and has fallen in all strata except farm/country since. In the farm/country stratum, use may have peaked a little later (probably because this stratum is the last one reached as use diffuses out from the large cities), but generally has declined from peak levels there, as well.
- Since 1981 there have been large drops in *stimulant* use among 19 to 22 year olds in communities of all sizes; since 1984 (the first time point available) among the 23 to 26 year olds; and since 1988 (first time point available) among the 27 to 30 year olds. There has been no systematic association between stimulant use and community size during these time intervals and this remains true.
- *Methaqualone* use, which in 1981 was rather strongly associated (positively) with population density, had dropped to annual prevalence rates of 0.8% or below in all size strata for all three age bands by 1989. The use of *barbiturates* has also fallen to very low rates (2.9%, or less, annual prevalence) in all size strata for all three age bands; unlike methaqualone it has not shown much correlation with urbanicity at least as far back as 1980.
- *Tranquilizer* use among young adults has had little or no association with population density over this time interval either. Among the 19 to 22 year olds it showed a decline in all strata from 1980 to about 1985, and some leveling since, to just under 4% annual prevalence. Since 1985 some further declines have occurred among the 23 to 26 year olds in the large cities, so that they too, now have an annual rate of about 4%, as do the smaller communities.

- Annual *heroin* prevalence in 1991 stands at 0.4% or less in all strata for all age bands, and has shown little systematic relationship with urbanicity, although in the early eighties it did tend to be more concentrated in cities than in the small-town and farm/country strata among the 19 to 22 year olds.
- Similarly, the annual use of *opiates other than heroin* had some positive association with degree of population density in the early eighties; however, it has shown rather little association since then, due to a greater decline in use in the variously sized city strata. For each of the various strata annual prevalence stands at between 2% and 4% among the 19 to 22 year olds, and from 1% to 3% among the two older age bands.
- While the absolute levels of *inhalant* use still remain low, between 1984 and 1987 there was a gradual increase among 19 to 22 year olds in all strata (except the very large cities, where it started out highest). There has been no systematic association with population density since; across all strata annual prevalence rates in 1991 are between 1.8% and 5.0%. Among respondents in the next older 23 to 26 year old age band, rates have been consistently low in all strata since 1984 (ranging from 0.7% to 2.1% in 1991); rates are lower still for the oldest, 27 to 30 year old age band (0.4% to 0.9% in 1991).
- In the three years for which data on *MDMA ("ecstasy")* have been available, use has been positively correlated with community size. In 1991, very large cities has an annual prevalence rate of 1.6% among 19-28 year olds, whereas the farm/country stratum has 0.3% and the small town 0.4%.
- In the seven years between 1984 and 1991, *alcohol* use declined modestly in all community-size strata for both the 19-22 and the 23-26 age groups, with only minor exceptions. In 1991, the association between community size and alcohol use remains a slightly positive one for 30-day prevalence, no association for daily prevalence, and a very slightly positive one for occasions of heavy drinking among both age groups.

Chapter 16

ATTITUDES AND BELIEFS ABOUT DRUGS AMONG YOUNG ADULTS

We have observed in the high school senior data some substantial changes in attitudes and beliefs about the use of drugs, in particular the perceived risk of harm associated with marijuana and cocaine, and personal disapproval of use of marijuana, cocaine, and amphetamines. Further, the importance of these shifts in attitudes and beliefs in explaining changes in actual drug using behavior has been demonstrated in earlier volumes in this series and elsewhere.¹³ The question remains, however, whether similar changes are occurring among other age groups. In this chapter we review trends since 1980 in the same attitudes and beliefs among young adults.

PERCEIVED HARMFULNESS OF DRUGS

Table 45 provides trends in the perceived risks associated with differing usage levels of the various licit and illicit drugs. These questions are contained in one questionnaire form only, limiting the numbers of follow-up cases; accordingly, we use four-year age bands in order to increase the available sample size (to about 500-600 weighted cases per cell) and thus to improve the reliability of the estimates. Because of the nature of the design, trend data are available for a longer period for 19 to 22 year olds (since 1980) than for 23 to 26 year olds (since 1984), or for 27-30 year olds (since 1988). Comparison data for seniors from 1980 onward are also displayed in this table.

Beliefs in 1991 About Harmfulness Among Young Adults

- As Table 45 illustrates, there are considerable differences in the risks young adults associate with the various drugs, as was true among seniors. In general, the results closely parallel those observed among seniors. (Comparisons can be made with Table 20 in Volume I.)

¹³Bachman, J.G., Johnston, L.D., O'Malley, P.M., & Humphrey, R.H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior*, 29, 92-112; Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior*, 31, 173-184. Johnston, L.D. (1981) Frequent marijuana use: Correlates, possible effects, and reasons for using and quitting. In R. deSilva, R. Dupont, and G. Russell (Eds.), *Treating the Marijuana Dependent Person* (pp. 8-14). New York: The American Council on Marijuana; Johnston, L.D. (1985). The etiology and prevention of substance use: What can we learn from recent historical changes? In C.L. Jones and R.J. Battjes (Eds.), *Etiology of Drug Abuse: Implications for Prevention* (NIDA Research Monograph No. 56, pp. 155-177). (DHHS Publication No. (ADM) 85-1335). Washington, DC: U.S. Government Printing Office.

- *Marijuana* is seen as the least risky of the illicitly used drugs, although sharp distinctions are made between different levels of use: in 1991, experimental use is perceived as being of "great risk" by 14-19% of high school graduates (age 19-30), while regular use is perceived to be that risky by 68-75% of them.

It is interesting to note that fewer of the older age groups see great risk, particularly with occasional and regular use of marijuana, than the younger age bands. Indeed, there has been a quite regular negative ordinal relationship between age and perceived risk for some years. This could reflect an age effect, but we think it is more likely a cohort effect, with the younger cohorts having come to perceive marijuana as more dangerous as they were growing up than did earlier cohorts, and then carrying these beliefs into adulthood.

- Use of any of the other illicit drugs is seen as distinctly more risky than marijuana. Experimental use of *amphetamines* and *barbiturates* is perceived as risky by about 31-37% of young adults age 19-30, and 48%-67% think trying *LSD*, *cocaine*, *crack*, *MDMA*, or *heroin* is risky.
- In recent years, the older age groups have been more likely to see *LSD*, *heroin*, *amphetamine*, and *barbiturate* use as dangerous, just the opposite of the situation with marijuana. At the end of this chapter we offer a closing note on the implications of this finding for theory and prevention.
- There has been little age-related difference in perceived risk associated with regular use of *cocaine*. There is a modest age-related difference in experimental and occasional use, however; the two older groups perceive less risk. This difference is consistent with the somewhat higher prevalence of use among the older groups.
- *Crystal methamphetamine* ("ice") was introduced to this question set in 1990 and the results show what may be an important reason for its lack of rapid spread. Seniors and young adults perceive it as a quite dangerous drug, perhaps because it is likened to crack cocaine in most media accounts. Both drugs are burned and inhaled, both are stimulants, and both produce dependence.
- *MDMA* ("ecstasy") questions were introduced a year earlier, and have not been asked of seniors. Young adults see it as a fairly dangerous drug, even for experimentation; just under 50% say there is "great risk" involved. This puts it close to LSD in its level of perceived risk.

- As with seniors, only a minority of the young adults see *occasional heavy drinking* as dangerous (39–42%); however, more than three-fourths feel that way about *daily heavy drinking*.
- More than 75% of the young adults perceive regular pack-a-day *cigarette smoking* as entailing high risk.

Trends in Perceived Harmfulness Among Young Adults

- Nearly all of the important trends observed among seniors in perceived harmfulness can also be seen among young adults. (See Table 45.) In particular, the risks associated with all levels of *cocaine* use rose sharply after 1986 (particularly for experimental and occasional use), though there was little further change in 1991 for either seniors or young adults.
- The long-term increase in the perceived risk of *regular marijuana use* documented among seniors also occurred among young adults although there was rather little change since 1989 for either group. The proportion of 19 to 22 year olds reporting great risk rose from 44% in 1980 (the first data point available) to 75% in 1991. Furthermore, the gap between this age group and the 23 to 26 year olds has narrowed by more than half, so that in 1991 the older age band is only 4% less likely to believe regular use carries great risk; the 27–30 year olds are 2% less likely than the 23–26 year olds. Among seniors the shift over the same interval was from 50% to 78%. (Daily marijuana use dropped appreciably during this time in all of these age groups.)
- Among seniors there had been a downward shift from 1975 to 1986 in the proportion seeing much risk associated with trying *heroin*, then a sharp upturn in 1987 which has held since. It appears that there was a similar downward shift among young adults (who in general have been more cautious about heroin than high school seniors); this was followed by a definite upturn between 1985 and 1987 in the judged risk of experimental or occasional heroin use, with little further change since then. These trends may reflect respectively, (a) the lesser attention paid to heroin by the media during the late seventies and early eighties than previously, and (b) the subsequent great increase in attention paid to intravenous heroin use in the past few years because of its important role in the spread of AIDS.
- While trend data are available only since 1987 on the risks perceived to be associated with *crack*, they show a sharp increase in the 1987–1989 interval. Were data available a year or two earlier, they undoubtedly would have shown that an even larger shift occurred.

TABLE 45
Trends in Perceived Harmfulness of Drugs
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

Q. How much do you think people risk harming themselves (physically or in other ways), if they ...	Age Group	Percentage saying "great risk" ^a											'90-'91 change	
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990		1991
Try marijuana once or twice	18	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6	23.1	27.1	+4.0ss
	19-22	8.3	7.8	9.7	9.7	12.8	11.2	13.0	12.9	18.8	16.9	17.8	19.1	+1.3
	23-26					9.6	10.0	12.4	14.5	16.0	14.0	17.7	14.0	-3.7
	27-30									14.8	16.0	17.0	15.7	-1.3
Smoke marijuana occasionally	18	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5	36.9	40.6	+3.7s
	19-22	13.9	14.2	15.9	16.7	21.7	20.6	22.4	23.0	28.7	29.1	30.1	30.2	+0.1.
	23-26					15.8	16.3	20.9	20.8	26.8	25.3	30.4	26.2	-4.2
	27-30									24.2	25.7	28.7	27.4	-1.3
Smoke marijuana regularly	18	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5	77.8	78.6	+0.8
	19-22	43.9	47.8	52.4	58.4	62.2	66.8	67.6	69.4	72.4	74.9	73.0	75.0	+2.0
	23-26					52.9	57.5	59.4	65.3	68.3	72.1	71.0	70.9	-0.1
	27-30									67.5	69.1	69.2	67.5	-1.7
Try LSD once or twice	18	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0	44.7	46.6	+1.9
	19-22	44.8	44.4	45.0	44.7	46.0	44.3	47.6	49.4	49.2	49.5	49.3	48.0	-1.3
	23-26					48.3	46.9	47.9	51.5	53.7	50.7	52.0	50.1	-1.9
	27-30									53.3	55.8	54.6	52.5	-2.1
Take LSD regularly	18	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3	84.5	84.3	-0.2
	19-22	83.4	85.3	86.2	86.0	84.5	86.4	87.1	85.8	85.4	85.5	85.8	86.9	+0.8
	23-26					89.0	86.6	88.7	90.0	89.2	89.0	88.2	89.1	+0.9
	27-30									89.1	91.2	92.0	87.1	-4.9s
Try PCP once or twice	18								55.6	58.8	56.6	55.2	51.7	-3.5
	19-22								63.6	63.8	NA	NA	NA	NA
	23-26								64.8	63.2	NA	NA	NA	NA
	27-30									65.9	NA	NA	NA	NA
Try cocaine once or twice	18	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9	59.4	59.4	0.0
	19-22	31.4	30.4	33.3	28.7	33.1	33.2	35.5	45.9	51.9	51.5	58.1	58.7	+0.6
	23-26					31.3	31.1	35.9	48.0	47.1	51.3	51.5	50.5	-1.0
	27-30									45.3	53.0	51.6	52.6	+1.0
Take cocaine occasionally	18							54.2	66.8	69.2	71.8	73.9	75.5	+1.6
	19-22							53.8	61.3	67.1	72.6	74.8	72.6	-2.0
	23-26							50.9	62.6	63.2	69.9	69.9	70.3	+0.4
	27-30									62.6	68.6	66.6	69.1	+2.5
Take cocaine regularly	18	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2	91.1	90.4	-0.7
	19-22	65.2	69.3	71.5	75.2	75.1	82.9	82.0	88.0	90.3	89.1	93.9	93.5	-0.4
	23-26					75.6	76.9	83.0	88.9	90.9	91.2	91.2	92.7	+1.5
	27-30									88.9	92.0	91.4	90.9	-0.5

(Table continued on next page)

TABLE 45 (Cont.)
Trends in Perceived Harmfulness of Drugs
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

	Age Group	Percentage saying "great risk" ^a											'90-'91 change	
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990		1991
Try crack once or twice	18								57.0	62.1	62.9	64.3	60.6	-3.7s
	19-22								59.4	67.3	68.5	69.4	66.9	-2.5
	23-26								59.1	63.5	69.8	67.3	66.9	-0.4
	27-30									66.5	64.9	68.7	66.8	-1.9
Take crack occasionally	18								70.4	73.2	75.3	80.4	76.5	-3.9ss
	19-22								75.0	77.3	81.8	82.3	82.7	+0.4
	23-26								70.3	74.0	79.9	81.1	83.9	+2.8
	27-30									76.4	76.7	82.6	81.8	-0.8
Take crack regularly	18								84.6	84.8	85.6	91.6	90.1	-1.5
	19-22								89.6	91.1	94.1	94.9	95.6	+0.7
	23-26								88.0	89.2	91.5	94.2	95.4	+1.2
	27-30									89.6	89.5	95.3	94.4	-0.9
Try MDMA ("ecstasy") once or twice	19-22										45.2	47.1	48.8	+1.7
	23-26										49.5	47.2	47.4	+0.2
	27-30										44.9	48.7	47.7	-1.0
Try heroin once or twice	18	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8	55.4	55.2	-0.2
	19-22	57.8	56.8	54.4	52.5	58.7	51.0	55.5	57.9	58.9	59.6	58.3	59.9	+1.6
	23-26					58.2	59.2	60.8	66.6	65.4	62.3	64.1	62.4	-1.7
	27-30									66.0	69.7	67.5	66.1	-1.4
Take heroin occasionally	18	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.6	75.5	76.6	74.9	-1.7
	19-22	77.5	77.8	73.6	74.5	74.9	73.6	77.2	77.8	77.5	79.8	80.8	80.2	-0.6
	23-26					81.2	80.7	78.9	84.5	82.4	80.8	83.4	84.4	+1.0
	27-30									86.0	86.8	85.3	84.3	-1.0
Take heroin regularly	18	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5	90.2	89.6	-0.6
	19-22	87.2	89.9	87.5	88.6	86.8	90.2	90.7	90.2	89.6	90.8	91.2	91.5	+0.3
	23-26					92.0	90.1	90.6	92.8	91.5	91.3	91.0	92.6	+1.6
	27-30									92.7	93.5	93.0	90.7	-2.3
Try amphetamines once or twice	18	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8	32.2	36.3	+4.1s
	19-22	24.6	24.6	27.8	24.8	26.9	23.9	27.1	27.4	31.7	28.9	35.6	32.8	-2.8
	23-26					29.6	29.4	29.4	34.1	33.2	32.5	35.3	31.0	-4.3
	27-30									35.2	37.5	36.9	36.5	-0.4
Take amphetamines regularly	18	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2	71.2	74.1	+2.9
	19-22	71.9	69.9	68.3	69.9	68.4	68.5	72.3	72.0	73.9	71.3	74.0	77.1	+3.1
	23-26					75.8	77.2	75.6	78.2	77.4	76.7	77.8	79.4	+1.6
	27-30									80.6	82.9	83.3	79.4	-3.9
Try crystal meth ("ice")	18											63.1	61.6	-1.5
	19-22											57.8	58.6	+0.8
	23-26											56.5	56.0	-0.5
	27-30											59.6	57.2	-2.4

(Table continued on next page)

TABLE 45 (Cont.)
Trends in Perceived Harmfulness of Drugs
Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
(Entries are percentages)

	Age Group	Percentage saying "great risk" ^a											'90-'91 change	
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990		1991
Try barbiturates once or twice	18	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.0	29.7	32.2	32.4	35.1	+2.7
	19-22	27.6	26.4	30.5	25.4	29.9	25.0	30.7	29.6	32.7	30.5	36.4	33.5	-2.9
	23-26					32.2	29.9	30.2	35.5	35.8	32.9	37.9	31.8	-6.1s
	27-30									37.2	38.7	39.0	37.0	-2.0
Take barbiturates regularly	18	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	70.5	70.2	70.5	+0.3
	19-22	74.0	73.3	72.7	71.3	71.6	71.7	74.5	73.0	74.0	71.7	75.5	75.5	0.0
	23-26					77.4	77.0	74.9	79.9	79.8	76.6	80.5	77.7	-2.8
	27-30									81.5	83.7	84.0	79.6	-4.4
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	18	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	6.0	8.3	9.1	+0.8
	19-22	3.0	3.4	3.1	2.3	4.7	3.1	5.4	3.5	3.9	5.9	6.1	5.4	-0.7
	23-26					5.5	3.0	6.5	6.6	4.2	5.1	5.7	4.4	-1.3
	27-30									5.0	6.3	4.4	6.6	+2.2
Take one or two drinks nearly every day	18	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5	31.3	32.7	+1.4
	19-22	22.7	22.9	23.2	23.2	25.0	26.3	27.3	26.1	26.5	28.1	30.1	29.1	-1.0
	23-26					27.8	27.4	26.9	30.2	29.1	27.8	31.1	30.4	-0.7
	27-30									27.4	31.7	32.2	31.7	-0.5
Take four or five drinks nearly every day	18	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	69.8	70.9	69.5	-1.4
	19-22	71.2	72.7	73.3	72.7	76.2	74.1	74.0	76.4	72.8	75.7	76.1	75.5	-0.6
	23-26					76.7	77.9	80.1	77.2	81.8	76.9	79.7	80.2	+0.5
	27-30									79.3	81.7	84.7	79.1	-5.6s
Have five or more drinks once or twice each weekend	18	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0	47.1	48.6	+1.5
	19-22	34.2	30.1	33.5	36.6	37.9	40.2	34.6	36.7	36.9	42.4	40.6	40.8	+0.2
	23-26					38.4	39.7	39.1	39.8	35.8	37.7	40.2	39.3	-0.9
	27-30									41.0	42.3	44.1	42.2	-1.9
Smoke one or more packs of cigarettes per day	18	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2	69.4	+1.2
	19-22	66.5	61.7	64.0	62.1	69.1	71.4	70.4	70.6	71.0	73.4	72.5	77.9	+5.4s
	23-26					71.1	70.1	75.7	73.6	75.5	71.4	78.5	75.3	-3.2
	27-30									72.8	75.2	77.8	75.4	-2.4
Approx. Wtd. N =	18	3234	3604	3557	3305	3262	3250	3020	3315	3276	2796	2553	2549	
	19-22		590	585	585	579	547	581	570	551	565	552	533	
	23-26					540	512	545	531	527	498	511	505	
	27-30									513	487	490	486	

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

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

- With regard to *occasional heavy drinking*, among seniors, perceived risk began to rise around 1981, continuing through 1985, and then leveled off until 1989 when it again started to rise. A similar pattern is found among 19 to 22 year olds. The older age band shows a level pattern recently, and data do not exist for enough years to check for an earlier increase in concern.
- In recent years, the data available from the young adult samples show a modest increase in the proportions associating great risk with *regular smoking*. For example, over the seven year interval from 1984 to 1991, 19-22 year old respondents increased by 9% (from 69% to 78%), while the 23-26 year old groups increased by 4% from (71% to 75%). High school seniors showed about the same degree of change as the 23-26 year olds, increasing by 5%, from 64% to 69%.

PERSONAL DISAPPROVAL OF DRUG USE

The questions asked of seniors concerning the extent to which they personally disapprove of various drug-using behaviors are also asked of follow-up respondents, in one of the six questionnaire forms. Trends in the answers of young adults aged 19-22, 23-26, and 27-30 are contained in Table 46. Comparison data for seniors are also provided for 1980 onward (see also Table 22, Chapter 8, in Volume I, for trends since 1975 in high school seniors' attitudes and beliefs about drugs).

Extent of Disapproval by Young Adults in 1991

- In general, the attitudes of young adults related to the various drug-using behaviors, both licit and illicit, are highly similar to those held by seniors. This means that the great majority disapprove of using, or even experimenting with, all of the *illicit drugs other than marijuana*. For example, regular use of each of the following drugs is disapproved by 97% or more of young adults: *LSD, cocaine, amphetamines, barbiturates, and heroin*. Experimentation with each of these drugs is disapproved by 84% to 98% of the young adults.
- These attitudes seem to differ little as a function of age, except that disapproval of experimental use of *cocaine* declines with age: seniors (94%), 19 to 22 year olds (91%), 23 to 26 year olds (88%), and 27 to 30 year olds (87%). The differences are consistent with age-related differences in actual use.
- Even for *marijuana*, more than half of young adults now disapprove experimentation, almost three-quarters disapprove occasional use, and roughly 90% disapprove regular use. Once again, there are age-related differences, with a decline in disapproval as one moves from younger to older age groups. Since current marijuana use is about constant across this age band (but active use *during*

high school was higher in the older age groups), these age-related differences in attitudes may reflect a residual effect of cohort differences in attitudes which were formed in high school or earlier.

- Rates of disapproval for the various patterns of *alcohol* use listed are quite close to those observed among seniors. Seniors are more likely to disapprove of experimentation, though the rate of disapproval is very low in all groups. On the question about *occasional heavy drinking*, disapproval is about 5% higher among the 27 to 30 year olds (who have a lower prevalence of such behavior) than among the younger age groups, all of whom have about the same attitudes.
- Disapproval for *cigarette smoking*, at the rate of a pack per day or more, varies little by age.

Trends in Disapproval by Young Adults

- Prior to 1991, there had been some important changes among American young adults in the extent to which they found various drugs acceptable, even for adult use. However, there was little further change in 1991.
- The largest shift occurred for *marijuana*; the proportion of 19 to 22 year olds disapproving even experimentation rose from 38% to 60% between 1980 and 1990, where it remains in 1991. Although data are available for a shorter period for the 23 to 26 year old age band, this group also increased in disapproval of experimenting with marijuana—from 41% in 1984 to 59% in 1991.
- Among the 19 to 22 year olds disapproval of *regular cocaine use* rose gradually from about 92% in 1980 to 98% in 1991. All three young adult age bands are now near the ceiling of 100%. Young adults 19 to 22, like the seniors, showed an increase in their disapproval of *experimental use of cocaine*, with the proportion disapproving rising from 73% in 1984 to 91% in 1991. (Much of the increase occurred since 1986.) Over the same period, disapproval also rose among 23 to 26 year olds—from 70% in 1984 to 88% in 1991.
- Disapproval rates for experimental, occasional, or regular use of *LSD* and *heroin* have been so high in recent years that there is little room for additional increase.
- There have been significant increases in disapproval of experimental use of *amphetamines* and *barbiturates*. Trying amphetamines once or twice is disapproved by 84%–85% of 19–26 year olds in 1991 compared to 73–74% in 1984, and the corresponding figures for trying barbiturates are 88–90% in 1991 compared to 84–85% in 1984.

TABLE 46
Trends in Proportions Disapproving of Drug Use
Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

Q. Do you disapprove of people (who are 18 or older) doing each of the following?	Age Group	Percentage "disapproving" ^a											'90-'91 change	
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990		1991
Try marijuana once or twice	18	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6	67.8	68.7	+0.9
	19-22	38.2	36.1	37.0	42.0	44.1	46.6	51.6	52.8	55.8	62.4	59.6	60.4	+0.8
	23-26					41.2	38.6	42.6	49.1	48.7	52.5	57.5	58.8	+1.3
	27-30									49.0	50.9	53.8	54.6	+0.8
Smoke marijuana occasionally	18	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2	80.5	79.4	-1.1
	19-22	49.8	49.1	51.3	56.0	60.4	62.6	66.7	67.2	69.5	77.3	76.3	77.0	+0.7
	23-26					54.8	52.8	57.0	64.9	63.4	69.4	73.7	73.3	-0.4
	27-30									65.3	67.1	68.9	73.0	+4.1
Smoke marijuana regularly	18	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8	91.0	89.3	-1.7
	19-22	74.3	77.2	80.0	81.8	84.9	86.7	89.2	88.7	89.1	91.2	93.1	91.3	-1.8
	23-26					80.6	81.3	83.3	87.4	86.9	90.4	91.0	89.6	-1.4
	27-30									87.6	87.5	89.7	89.6	-0.1
Try LSD once or twice	18	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7	89.8	90.1	+0.3
	19-22	87.4	84.8	85.9	88.4	88.1	89.1	90.4	90.0	90.9	89.3	90.5	88.4	-2.1
	23-26					87.3	87.1	88.0	89.9	91.4	91.0	90.7	89.1	-1.6
	27-30									91.0	87.2	89.7	87.9	-1.8
Take LSD regularly	18	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4	96.3	96.4	+0.1
	19-22	98.2	97.4	97.7	97.6	97.6	98.8	98.5	98.0	98.1	97.5	99.1	97.5	-1.6
	23-26					99.2	98.0	98.5	99.0	98.0	98.4	98.3	98.4	+0.1
	27-30									98.8	97.1	98.9	98.9	0.0
Try cocaine once or twice	18	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5	91.5	93.6	+2.1
	19-22	73.0	69.3	69.9	74.1	72.5	77.6	78.9	82.3	85.3	88.8	90.1	91.2	+1.1
	23-26					70.2	70.5	72.1	80.0	82.9	85.5	88.3	88.0	-0.3
	27-30									82.1	81.0	85.5	86.9	+1.4
Take cocaine regularly	18	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4	96.7	97.3	+0.6
	19-22	91.6	89.3	91.9	94.6	95.0	96.3	97.0	97.2	97.9	97.4	98.9	97.9	-1.0
	23-26					95.7	95.3	97.3	98.1	97.6	98.3	98.4	98.5	+0.1
	27-30									98.1	97.0	99.3	99.0	-0.3
Try heroin once or twice	18	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4	95.1	96.0	+0.9
	19-22	96.3	95.4	95.6	95.2	95.1	96.2	96.8	96.3	97.1	96.4	98.3	95.9	-2.4
	23-26					96.7	94.9	96.4	97.1	97.4	96.7	96.8	96.9	+0.1
	27-30									97.9	95.8	97.5	96.6	-0.9
Take heroin occasionally	18	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2	96.7	97.3	+0.6
	19-22	98.6	97.8	98.3	98.3	98.6	98.7	98.3	98.3	98.3	97.9	99.2	98.2	-1.0
	23-26					99.2	98.2	98.8	99.1	98.4	98.3	98.1	99.0	+0.3
	27-30									99.2	97.3	99.0	98.9	-0.1
Take heroin regularly	18	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4	97.5	97.8	+0.3
	19-22	99.2	98.5	98.6	98.7	98.7	99.1	98.9	98.6	98.4	98.3	99.5	98.5	-1.0
	23-26					99.4	98.8	99.1	99.4	98.7	98.7	98.5	99.3	+0.8
	27-30									99.4	97.6	99.4	99.0	-0.4

(Table continued on next page)

TABLE 46 (Cont.)
Trends in Proportions Disapproving of Drug Use
Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
(Entries are percentages)

		Percentage "disapproving" ^a											'90-'91 change	
Age Group		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990		1991
Try amphetamines once or twice	18	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3	85.3	86.5	+1.2
	19-22	74.5	70.5	68.9	74.0	73.0	75.6	78.9	79.9	81.8	85.3	84.4	83.9	-0.5
	23-26					74.2	74.2	74.6	80.3	83.5	83.3	84.1	84.8	+0.7
	27-30									83.5	81.0	84.3	83.7	-0.6
Take amphetamines regularly	18	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2	95.5	96.0	+0.5
	19-22	94.8	93.3	94.3	93.4	94.9	96.6	96.9	95.1	97.5	96.8	97.5	97.7	+0.2
	23-26					96.6	95.9	96.6	97.0	97.2	98.1	97.9	97.9	0.0
	27-30									98.1	96.5	98.6	97.8	-0.8
Try barbiturates once or twice	18	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3	90.5	90.6	+0.1
	19-22	83.5	82.3	83.8	85.1	85.2	86.1	88.3	87.5	90.1	92.0	91.1	90.4	-0.7
	23-26					83.9	84.5	84.4	89.8	90.7	89.4	88.8	87.9	-0.9
	27-30									90.5	88.3	88.4	88.8	+0.4
Take barbiturates regularly	18	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3	96.4	97.1	+0.7
	19-22	96.6	95.6	97.3	96.5	96.6	98.1	98.0	97.0	97.9	97.7	98.7	98.0	-0.7
	23-26					98.4	98.5	97.7	98.6	98.3	98.3	98.5	98.5	0.0
	27-30									98.4	97.1	99.1	98.5	-0.6
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	18	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3	29.4	29.8	+0.4
	19-22	14.8	14.5	13.9	15.5	15.3	15.4	16.9	16.0	18.4	22.4	17.6	22.2	+4.6
	23-26					17.4	16.1	13.2	17.7	13.7	17.5	18.6	19.5	+0.9
	27-30									19.5	19.1	18.7	18.8	+0.1
Take one or two drinks nearly every day	18	69.0	69.1	69.9	63.9	72.9	70.9	72.8	74.2	75.0	76.5	77.9	76.5	-1.4
	19-22	67.8	69.7	71.3	73.3	74.3	71.3	77.4	75.3	76.5	80.0	79.7	77.1	-2.6
	23-26					71.4	73.7	71.6	72.7	74.6	74.4	77.6	76.9	-0.7
	27-30									76.0	73.9	73.3	76.1	+2.8
Take four or five drinks nearly every day	18	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6	91.9	90.6	-1.3
	19-22	95.2	93.4	94.6	94.6	94.6	94.8	94.9	95.7	94.8	96.1	95.8	96.4	+0.6
	23-26					96.2	95.0	95.5	96.9	94.3	95.9	96.9	96.1	-0.8
	27-30									97.4	94.6	96.1	95.3	-0.8
Have five or more drinks once or twice each weekend	18	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5	68.9	67.4	-1.5
	19-22	57.1	56.1	58.2	61.0	59.7	59.4	60.3	61.6	64.1	66.3	67.1	62.4	-4.7
	23-26					66.2	68.3	66.5	67.5	65.2	63.2	66.9	64.6	-2.3
	27-30									73.9	71.4	73.1	72.1	-1.0
Smoke one or more packs of cigarettes per day	18	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8	71.4	-1.4
	19-22	68.7	68.1	66.3	71.6	69.0	70.5	71.4	72.7	73.8	75.6	73.7	73.2	-0.5
	23-26					69.9	68.7	67.5	69.7	66.4	71.1	71.5	77.2	+5.7 _s
	27-30									72.8	69.4	73.5	71.2	-2.3
Approx. Wtd. N =	18	3261	3610	3651	3341	3254	3265	3113	3302	3311	2799	2566	2547	
	19-22	588	573	605	579	586	551	605	587	560	567	569	533	
	23-26					542	535	560	532	538	516	524	495	
	27-30									526	509	513	485	

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

- Regarding *alcohol* use, among 19 to 22 year olds there has been some movement toward greater disapproval of *experimentation*, *daily drinking*, and *occasional heavy drinking*. The same trends also have been observed among seniors.
- Since 1984, there has been very little change in the proportions of high school seniors disapproving *cigarette smoking* at the rate of half-pack or more per day (73% vs. 71%). Among the 19-22 year old group, there was some increase in disapproval (from 69% in 1984 to 73% in 1991), and in the 23-26 year old group (70% to 77%). The oldest group (27 to 30 year olds) has changed little since the first data available for them in 1988 (73%) and 1990 (71%).

A FURTHER COMMENT: COHORT DIFFERENCES AND IMPLICATIONS FOR PREVENTION

It should be noted that the older age respondents are more likely than younger ones to see *LSD*, *heroin*, *amphetamine*, and *barbiturate* use as dangerous, just the opposite of the situation with marijuana. We have offered the framework for a theory of drug epidemics in which direct learning (from personal use) and vicarious learning (from use by others in both the immediate and mass media environments) play an important role in changing these key attitudes.¹⁴ To the extent current data represent cohort effects (enduring differences between cohorts), these findings would be consistent with this theoretical perspective. Clearly, use of these particular drugs was greater when the older cohorts were growing up, and public attention and concern regarding the consequences of these drugs was greatest in the 1970's and early 1980's. In the early 1970's LSD was alleged to cause brain damage and chromosomal damage. Methamphetamine was discouraged with the slogan "speed kills." There was a serious epidemic of heroin use in the early 1970's, and so on. The younger cohorts in our study were not exposed to these experiences, but the older cohorts were. While there may have been a secular trend toward greater perceived risk for drugs in general, in the case of LSD there may also have been a cohort effect that was enough to offset the secular trend among seniors, who have shown little change in perceived risk since 1980.

This vicarious learning process has a very practical importance for the national strategy for preventing future epidemics. As future cohorts of youngsters grow up with less opportunity for such vicarious learning, because fewer in their immediate social circles and fewer public role models are using these drugs and exhibiting adverse reactions, the less opportunity they will have to learn the hazards of the drugs in the normal course of growing up. Unless those hazards are convincingly communicated to them in other ways—say through school prevention programs and public service advertising—the more susceptible they will be to a new epidemic of use of the same or similar drugs.

¹⁴Johnston, L.D. (1991). Toward a theory of drug epidemics. In R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive Communication and Drug Abuse Prevention*. Hillsdale, NJ: Lawrence Erlbaum. pp. 93-132.

Chapter 17

THE SOCIAL MILIEU FOR YOUNG ADULTS

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

PEER NORMS AS PERCEIVED BY YOUNG ADULTS

Table 47 gives the current status and trends in peer norms for the same three age bands discussed in Chapter 15: namely, 19 to 22 year olds, 23 to 26 year olds, and 27 to 30 year olds. Trend data are available since 1980, 1984, and 1988, respectively, for these three age bands. The table also includes comparison data for seniors.

Current Perceptions of Friends' Attitudes

- The peer norms reported by young adults one to twelve years past high school are similar to those reported by high school seniors. That is, for each of the *illicit drugs other than marijuana* the great majority think that their close friends would disapprove of their even trying such drugs once or twice (about 91% for *LSD* and 86% for *cocaine*).
- Nearly two-thirds of the young adults (65%) now think their friends would disapprove of their even trying *marijuana*, while nearly three-fourths think they would disapprove of occasional use and 88% think they would disapprove of regular use.
- There appear to be no large age-related differences in current norms for any of the *illicit drugs*. Comparing seniors with the three older age groups, we find almost identical rates of peer disapproval for trying *amphetamines* or *LSD*, or for using *marijuana regularly*. However, for the experimental or occasional use of either *marijuana* or *cocaine* there is a small drop-off in peer disapproval with increasing age.
- Almost three-quarters of young adults say their friends would disapprove if they were *daily drinkers*, and 9 out of 10 if they were *heavy daily drinkers*. However, only 51% and 57% of the 19 to 26 year olds say their friends would disapprove of *heavy weekend drinking*, while 68% of the 27 to 30 year olds say the same.

TABLE 47
Trends in Proportion of Friends Disapproving of Drug Use
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

		Percentage saying friends disapprove ^a												
Q. How do you think your close friends feel (or would feel) about you ...	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change
		Trying marijuana once or twice	18	42.6	46.4	50.3	52.0	54.1	54.7	55.7	58.0	62.9	63.7	70.3
	19-22	41.0	40.6	46.9	47.1	51.6	54.5	55.2	54.7	53.7	63.0	63.6	64.7	+1.1
	23-26					47.7	47.0	49.1	53.9	58.2	62.6	61.3	64.5	+3.2
	27-30									58.6	58.7	61.4	64.6	+3.2
Smoking marijuana occasionally	18	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4	75.8	-0.6
	19-22	50.9	49.2	54.0	57.9	59.4	64.6	64.4	65.1	69.8	71.5	74.1	73.9	-0.2
	23-26					54.3	56.4	57.1	63.1	68.1	73.2	71.8	72.5	+0.7
	27-30									67.8	69.4	71.9	73.7	+1.8
Smoking marijuana regularly	18	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7	85.9	-0.8
	19-22	70.3	75.2	75.7	79.5	80.0	82.7	83.5	84.8	86.9	87.5	89.1	88.4	-0.7
	23-26					77.8	78.4	80.9	82.0	85.8	89.2	88.1	87.9	-0.2
	27-30									85.4	86.0	88.4	89.2	+0.8
Trying LSD once or twice	18	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9	87.9	0.0
	19-22	87.4	90.5	88.0	89.3	89.3	91.1	90.5	91.8	90.8	91.2	89.1	89.9	+0.8
	23-26					87.4	90.8	88.6	89.8	88.9	91.0	90.1	92.4	+2.3
	27-30									88.8	89.7	92.3	91.1	-1.2
Trying cocaine once or twice	18	NA	NA	NA	NA	NA	NA	79.6	83.9	88.1	88.9	90.5	91.8	+1.3
	19-22	NA	NA	NA	NA	NA	NA	76.4	NA	84.8	87.7	89.2	92.3	+3.1
	23-26					NA	NA	70.8	NA	81.4	84.5	84.1	86.7	+2.6
	27-30									81.8	81.1	83.7	83.5	-0.2
Taking cocaine occasionally	18	NA	NA	NA	NA	NA	NA	87.3	89.7	92.1	92.1	94.2	94.7	+0.5
	19-22	NA	NA	NA	NA	NA	NA	84.9	NA	91.0	93.8	94.2	95.6	+1.4
	23-26					NA	NA	81.7	NA	88.2	91.6	92.4	94.1	+1.7
	27-30									87.7	89.5	90.0	92.2	+2.2
Trying an amphetamine once or twice	18	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2	85.3	+1.1
	19-22	75.8	76.7	75.3	74.3	77.0	79.7	81.5	81.3	83.0	83.5	84.5	86.5	+2.0
	23-26					78.4	79.1	76.7	81.7	83.0	85.6	84.3	85.0	+0.7
	27-30									82.7	84.1	84.9	84.6	-0.3
Taking one or two drinks nearly every day	18	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0	76.6	-2.4
	19-22	71.9	72.1	68.6	73.5	71.6	72.2	72.7	70.2	73.9	77.1	73.3	73.7	+0.4
	23-26					63.6	66.8	67.7	68.3	69.2	70.8	72.7	72.5	-0.2
	27-30									71.0	68.0	70.4	71.9	+1.5
Taking four or five drinks nearly every day	18	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2	86.4	-1.8
	19-22	93.7	91.7	89.9	91.9	91.7	92.5	91.5	90.8	90.4	92.5	89.9	91.7	+1.8
	23-26					90.8	90.2	92.5	92.8	93.7	92.1	92.1	92.4	+0.3
	27-30									92.8	92.0	92.9	92.7	-0.2
Having five or more drinks once or twice each weekend	18	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0	58.1	-0.9
	19-22	53.5	51.7	51.7	53.3	50.8	53.3	47.0	49.4	50.5	56.8	53.1	51.4	-1.7
	23-26					53.8	57.3	61.0	57.2	58.8	57.5	55.1	56.8	+1.7
	27-30									61.9	65.1	66.3	68.2	+1.9
Smoking one or more packs of cigarettes per day	18	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3	74.0	-1.3
	19-22	75.6	75.1	75.4	78.5	76.2	79.7	77.7	78.6	80.2	78.4	77.5	78.3	+0.8
	23-26					73.9	77.3	80.3	80.5	79.5	80.5	78.5	83.3	+4.8s
	27-30									81.2	80.9	82.9	84.5	+1.6
Approx. Wtd. N =	18	2766	3120	3024	2722	2721	2688	2639	2815	2778	2400	2184	2160	
	19-22		569	597	580	577	532	556	577	595	584	555	559	537
	23-26					510	548	549	540	510	513	516	516	
	27-30									483	518	479	480	

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

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

These attitudes do differ by age group, though not dramatically. Although perceived disapproval of light daily drinking may decrease slightly with age, peer disapproval of heavy weekend drinking shows a different pattern: It is somewhat higher among 27 to 30 year olds (68%) compared to the 19 to 22 and 23 to 26 year old groups (51% to 57%).

- Peer disapproval of *cigarette smoking* is reasonably high in all four age bands: 74% of seniors say their friends would disapprove of pack-a-day smoking, 78% of the 19 to 22 year olds, 83% of the 23 to 26 year olds, and 85% of the 27 to 30 year olds say so. It appears that anti-smoking attitudes are weakest among younger people, particularly since the older cohorts have the highest smoking rates, and did so as seniors, too.

Trends in Peer Norms for Young Adults

- Important changes in the social acceptability of drug using behaviors among young adults' peers have occurred over the years of this study. Since 1980, peer disapproval of *marijuana* use has grown substantially for the 19 to 22 year olds; for example, the proportion thinking their friends would disapprove if they even tried marijuana rose from 41% to 65%, in 1991. Compared to young adults, high school seniors have consistently shown more disapproval for experimental use of marijuana. (See Table 47.)
- There has been a more gradual increase in peer disapproval levels for *amphetamine* use. *LSD* has shown a little change in the same direction; however, disapproval rates are already so high that there is little room for further movement.
- Perceived peer norms regarding *cocaine* use were first measured in 1986. During the next five years self-reported cocaine use declined substantially and peer norms shifted considerably toward disapproval. By 1991, 92% of the 19 to 22 year olds thought their friends would disapprove of their even trying cocaine (vs. 76% in 1986), and 96% thought their friends would disapprove of occasional use (vs. 85% in 1986). In the two older age bands shifts have been occurring in the same direction but peer disapproval of experimenting with cocaine still remains negatively associated with age.
- While peer norms regarding *alcohol* use have become somewhat more restrictive among seniors, it is not clear that there has been much change among the young adults.
- Peer norms regarding *cigarette smoking* became more restrictive among high school seniors in the early years of this study: peer disapproval rose from 64% in 1975 to 73% in 1979. Since then, there has been little further change; friends' disapproval stood at 74% in 1991. Similarly, there has been little change in recent years

among the older groups: between 1985 and 1991, peer disapproval among 19 to 22 year olds actually declined a bit (from 80% to 78%), and among 23 to 26 year olds it increased a bit from 77% to 83%. Despite recent publicity about changing norms and new laws restricting smoking, in the past six years there has been little change in rates of perceived peer disapproval of cigarette smoking, particularly among those of high school and college ages. There may have been a modest increase in perceived peer disapproval in the older age strata.

EXPOSURE TO DRUG USE BY FRIENDS AND OTHERS

Exposure to drug use is measured by two sets of questions, each appearing on a (different) single questionnaire form. The first asks about proportion of close friends using each drug, the second about how often the respondent has been around people using each of a list of drugs "to get high or for kicks." These are the same questions asked of seniors, and the results from seniors are included in Table 48 for comparison purposes.

Exposure to Drug Use among Young Adults in 1991

- * Relatively high proportions of young adults have at least some friends who use illicit drugs (Table 48). Among 19 to 22 year olds, 72% had friends who use *some illicit drug*, and 52% had friends who use *some illicit drug other than marijuana*; the percentages are slightly lower for the 23 to 26 year olds and the 27 to 30 year olds. Only 9% of the younger group (and between 3% and 7% of the two older groups) say that most or all of their friends use any illicit drug, and between 1% and 3% of all three young adult age bands say most or all of their friends use any illicit drugs other than marijuana.
- Exposure is greatest, of course, for *marijuana* (almost two-thirds report some friends using) followed by *cocaine* (30-36%), *amphetamines* (17-24%), *LSD* (9-22%), and "*crack*," (11%-14%). The other illicit drugs have relatively small proportions of friends using ranging from 6% or less for *heroin* to between 2% and 14% for the other illicit drugs.
- For a number of drugs the proportion having any friends who use is lower for each higher age group. These include the *inhalants*, *LSD*, *other hallucinogens*, *MDMA*, *heroin*, *amphetamines*, *barbiturates*, and *steroids*.
- *Cocaine* is the one illicit drug that shows an important increase in active use with age. It also shows somewhat higher prevalence of friends' use in the older age groups: among seniors 27% report having at least some friends who use; among 19 to 22 year olds 30%; among 23 to 26 year olds 29%; and among 27 to 30 year olds 36%.

TABLE 48
Trends in Proportion of Friends Using Drugs
Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

Q. How many friends would you estimate ...	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change
Take any illicit drug ^a % saying none	18	12.5	14.6	13.7	17.4	19.0	17.6	17.8	18.3	20.9	23.1	29.0	30.9	+1.9
	19-22	9.8	12.0	13.2	15.0	17.7	17.1	19.5	23.3	22.8	21.6	27.3	28.5	+1.2
	23-26					16.4	17.3	19.7	19.1	25.6	26.2	34.2	37.0	+2.8
	27-30									25.2	27.1	30.4	32.9	+2.5
% saying most or all	18	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	11.6	11.7	+0.1
	19-22	34.9	32.8	28.1	22.4	21.9	18.2	16.2	14.0	13.3	10.9	10.5	8.8	-1.7
	23-26					19.6	15.4	16.2	11.7	9.5	9.7	9.5	7.4	-2.1
	27-30									8.6	6.4	5.9	2.9	-3.0s
Take any illicit drug ^a other than marijuana % saying none	18	37.6	36.7	35.3	38.8	38.7	38.2	36.7	37.6	43.5	43.8	49.9	53.7	+3.8s
	19-22	32.1	32.2	33.3	34.8	39.2	43.9	39.0	42.7	46.5	39.2	46.6	48.5	+1.9
	23-26					36.3	36.0	41.0	38.9	44.9	45.8	52.2	58.2	+6.0s
	27-30									44.1	45.0	50.3	52.8	+2.5
% saying most or all	18	11.1	11.9	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1	4.6	-0.5
	19-22	9.8	12.9	11.8	9.8	9.3	8.6	7.6	5.0	5.3	4.0	3.2	2.6	-0.6
	23-26					10.6	6.6	8.6	5.2	3.9	4.2	3.4	1.6	-1.8
	27-30									4.6	3.0	2.8	1.0	-1.8s
Smoke marijuana % saying none	18	13.6	17.0	15.6	19.7	22.3	20.5	20.8	21.6	24.7	27.5	31.7	34.2	+2.5
	19-22	11.2	13.6	14.8	16.2	18.4	18.9	21.5	24.7	24.9	26.2	32.4	32.0	-0.4
	23-26					18.0	19.2	22.3	20.6	28.4	30.2	38.2	40.4	+2.2
	27-30									28.2	31.8	34.9	37.4	+2.5
% saying most or all	18	31.3	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1	10.0	-0.1
	19-22	34.1	30.6	25.6	20.6	19.4	16.0	13.3	12.5	12.2	9.0	9.2	8.3	-0.9
	23-26					17.0	14.3	13.7	10.4	7.8	8.6	8.3	6.9	-1.4
	27-30									6.8	4.4	4.0	2.8	-1.2
Use inhalants % saying none	18	82.2	83.5	81.6	83.9	80.7	78.8	77.6	75.3	79.2	77.9	80.0	80.8	+0.8
	19-22	88.1	86.8	86.2	87.7	88.3	90.4	89.1	87.3	89.1	88.3	87.0	87.8	+0.8
	23-26					92.3	93.3	92.8	93.9	93.8	94.1	93.9	95.6	+1.7
	27-30									95.4	96.5	97.1	97.5	+0.4
% saying most or all	18	1.2	0.9	1.3	1.1	1.1	1.5	2.0	1.9	1.2	1.9	1.0	0.7	-0.3
	19-22	0.5	0.4	0.7	0.3	0.5	0.6	0.7	0.7	0.7	0.4	0.6	0.2	-0.4
	23-26					0.6	0.2	0.6	0.1	0.2	0.4	0.4	0.1	-0.3
	27-30									0.3	0.0	0.2	0.2	0.0
Use nitrites % saying none	18	81.0	82.6	82.5	85.5	85.0	84.4	82.0	81.7	86.4	86.7	89.6	91.1	+1.5
	19-22	81.6	84.0	85.8	86.2	91.1	90.1	88.3	86.8	89.8	NA	NA	NA	NA
	23-26					89.2	92.2	92.0	92.1	94.8	NA	NA	NA	NA
	27-30									93.4	NA	NA	NA	NA
% saying most or all	18	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.9	0.6	0.4	-0.2
	19-22	0.3	0.4	0.9	0.6	0.6	0.6	0.4	0.4	0.2	NA	NA	NA	NA
	23-26					0.8	0.3	0.4	0.3	0.1	NA	NA	NA	NA
	27-30									0.5	NA	NA	NA	NA
Take LSD % saying none	18	71.9	71.5	72.2	76.0	76.1	75.6	75.5	74.7	75.9	74.8	75.0	76.6	+1.6
	19-22	69.1	74.1	73.5	77.4	78.4	81.2	81.3	81.8	81.0	79.9	79.9	78.0	-1.9
	23-26					78.5	82.8	84.6	84.1	86.7	85.9	87.7	87.5	-0.2
	27-30									89.6	92.3	90.9	91.4	+0.5
% saying most or all	18	1.8	2.2	2.4	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9	1.7	-0.2
	19-22	1.2	0.8	0.9	1.0	0.6	0.8	0.9	0.6	1.3	0.4	1.2	1.4	+0.2
	23-26					0.8	0.5	1.0	0.2	0.6	0.5	0.6	0.2	-0.4
	27-30									0.3	0.2	0.3	0.3	0.0

(Table continued on next page)

TABLE 48 (Cont.)
Trends in Proportion of Friends Using Drugs
Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
(Entries are percentages)

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change
Take other psychedelics	% saying none													
	18	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
	19-22	66.6	74.5	74.9	79.0	79.8	83.4	84.2	85.0	83.9	86.1	84.7	85.8	+1.1
	23-26					80.0	83.3	86.8	86.8	88.3	90.4	91.3	91.5	+0.2
	27-30									89.4	92.6	92.9	93.2	+0.3
	% saying most or all													
	18	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0	0.8	-0.2
	19-22	1.5	0.9	1.1	1.2	0.7	1.0	0.7	0.6	0.9	0.2	0.5	0.8	+0.3
	23-26					0.8	0.3	0.5	0.3	0.2	0.3	0.8	0.1	-0.7
	27-30									0.2	0.1	0.3	0.2	-0.1
Use PCP	% saying none													
	18	77.8	82.8	82.7	85.8	85.8	84.1	83.9	84.5	86.5	85.3	87.0	88.0	+1.0
	19-22	75.9	84.7	84.7	87.4	90.5	91.1	89.9	90.3	89.9	NA	NA	NA	NA
	23-26					88.4	93.2	92.6	93.1	94.9	NA	NA	NA	NA
	27-30									93.3	NA	NA	NA	NA
	% saying most or all													
	18	1.6	0.9	0.9	1.1	1.1	1.2	1.2	1.1	0.8	1.2	0.5	0.5	0.0
	19-22	0.5	0.3	0.3	0.5	0.7	0.7	0.2	0.1	0.3	NA	NA	NA	NA
	23-26					0.6	0.0	0.4	0.0	0.2	NA	NA	NA	NA
	27-30									0.4	NA	NA	NA	NA
Take cocaine	% saying none													
	18	58.4	59.9	59.3	62.4	61.1	56.2	54.4	56.3	62.3	62.6	68.3	73.2	+4.9 _{ss}
	19-22	49.0	51.1	50.2	53.5	52.4	54.1	51.7	54.3	58.0	57.3	66.8	70.3	+3.5
	23-26					47.6	46.8	48.4	49.3	52.9	59.2	65.2	71.0	+5.8 _s
	27-30									52.1	56.7	61.7	64.3	+2.6
	% saying most or all													
	18	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	-0.6
	19-22	7.0	8.6	7.8	6.1	6.3	6.1	6.1	3.3	3.5	2.1	1.2	1.1	-0.1
	23-26					9.1	5.3	7.0	4.1	3.1	2.7	2.1	0.6	-1.5 _s
	27-30									3.8	2.0	2.3	0.9	-1.4
Take crack	% saying none													
	18								72.6	74.6	73.9	80.8	82.4	+1.6
	19-22								76.2	78.2	79.4	85.4	85.7	+0.3
	23-26								73.6	77.6	80.2	85.6	89.2	+3.6
	27-30									77.9	81.6	83.4	88.4	+5.0 _s
	% saying most or all													
	18								2.2	1.1	2.1	0.6	0.6	0.0
	19-22								0.7	0.8	1.0	0.6	0.2	-0.4
	23-26								0.8	0.9	0.8	0.5	0.1	-0.4
	27-30									1.2	0.9	0.9	0.3	-0.6
Take MDMA ("ecstasy")	% saying none													
	19-22									83.7	85.7	88.0	+2.3	
	23-26									92.4	91.0	90.5	-0.5	
	27-30									94.4	93.7	94.6	+0.9	
	% saying most or all													
	19-22									0.4	0.7	0.2	-0.5	
23-26									0.5	0.2	0.1	-0.1		
27-30									0.5	0.3	0.0	-0.3		
Take heroin	% saying none													
	18	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
	19-22	89.0	91.9	90.6	92.5	92.9	93.5	91.5	91.5	92.2	93.2	93.5	93.9	+0.4
	23-26					93.9	95.6	95.7	93.5	96.4	94.8	95.8	96.4	+0.6
	27-30									96.2	97.2	95.5	97.3	+1.8
	% saying most or all													
	18	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4	0.4	0.0
	19-22	0.3	0.5	0.1	0.2	0.4	0.6	0.2	0.3	0.2	0.2	0.3	0.2	-0.1
23-26					0.4	0.2	0.2	0.0	0.2	0.4	0.2	0.3	+0.1	
27-30									0.2	0.1	0.2	0.2	0.0	

(Table continued on next page)

TABLE 48 (Cont.)
Trends in Proportion of Friends Using Drugs
Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
(Entries are percentages)

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change	
Take other narcotics	% saying none	18	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
		19-22	77.2	79.6	78.1	82.1	82.6	83.1	85.4	84.6	85.9	85.0	87.1	85.9	-1.2
		23-26					84.0	85.1	86.0	87.0	89.4	89.2	89.5	91.5	+2.0
		27-30									87.9	91.4	90.9	90.7	-0.2
		% saying most or all	18	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9	0.5
	19-22	0.9	0.7	0.6	0.5	0.8	1.0	0.5	0.4	0.9	0.1	0.6	0.4	-0.2	
	23-26					0.4	0.3	0.7	0.0	0.3	0.2	0.2	0.0	-0.2	
	27-30									0.3	0.0	0.2	0.2	0.0	
Take amphetamines	% saying none	18	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
		19-22	45.9	47.8	48.7	50.3	53.9	57.9	61.5	65.5	73.2	70.4	76.7	73.8	-2.9
		23-26					54.4	59.9	66.5	67.9	71.6	76.9	79.4	82.9	+3.5
		27-30									73.9	78.4	80.7	83.0	+2.3
		% saying most or all	18	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9	1.3
	19-22	3.8	5.7	4.6	3.8	3.3	2.9	1.3	1.9	1.4	0.7	1.0	0.6	-0.4	
	23-26					1.9	1.8	1.7	1.2	0.3	0.6	0.7	0.8	+0.1	
	27-30									0.6	0.4	0.5	0.5	0.0	
Take barbiturates	% saying none	18	69.5	68.9	68.7	71.7	73.4	72.9	74.4	75.7	80.3	79.7	82.6	85.2	+2.6s
		19-22	66.8	72.1	72.3	76.4	78.0	82.8	81.2	84.5	86.0	85.9	88.1	87.2	-0.9
		23-26					77.8	81.3	83.7	85.9	88.8	89.6	91.1	91.7	+0.6
		27-30									88.0	91.5	91.2	92.9	+1.7
		% saying most or all	18	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6	0.5
	19-22	1.1	1.3	1.0	0.8	0.8	0.5	0.3	0.4	0.8	0.1	0.2	0.3	+0.1	
	23-26					0.4	0.3	0.3	0.3	0.1	0.2	0.2	0.1	-0.1	
	27-30									0.2	0.0	0.4	0.2	-0.2	
Take quaaludes	% saying none	18	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
		19-22	61.7	63.8	64.6	69.5	75.4	80.1	79.7	83.1	87.5	89.1	90.0	89.4	-0.6
		23-26					74.3	79.0	82.6	85.0	87.9	89.7	91.4	94.1	+2.7
		27-30									88.2	92.1	91.8	93.0	+1.2
		% saying most or all	18	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8	0.5
	19-22	1.9	2.7	1.2	1.3	1.2	0.6	0.2	0.4	0.4	0.2	0.6	0.2	-0.4	
	23-26					0.6	0.3	0.7	0.2	0.2	0.4	0.2	0.1	-0.1	
	27-30									0.5	0.2	0.2	0.2	0.0	
Take tranquilizers	% saying none	18	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
		19-22	62.5	66.1	71.3	77.1	78.0	80.3	79.4	82.0	83.6	85.2	86.6	87.0	+0.4
		23-26					70.7	73.7	77.7	79.2	84.5	86.9	85.2	87.9	+2.7
		27-30									79.9	83.4	83.1	85.1	+2.0
		% saying most or all	18	1.9	1.4	1.1	1.2	1.5	1.2	1.3	1.0	0.7	1.5	0.5	0.4
	19-22	0.7	0.9	0.5	0.8	0.3	0.7	0.3	0.6	0.4	0.1	0.4	0.5	+0.1	
	23-26					0.4	0.3	0.5	0.0	0.3	0.4	0.2	0.3	+0.1	
	27-30									0.5	0.3	0.4	0.2	-0.2	
Take steroids	% saying none	18										74.1	75.3	+1.2	
		19-22										76.6	78.5	77.8	-0.7
		23-26										80.7	85.0	87.7	+2.7
		27-30										90.1	89.5	92.5	+3.0
		% saying most or all	18										1.7	0.9	-0.8
	19-22										0.2	0.6	0.0	-0.6	
	23-26										0.4	0.0	0.0	0.0	
	27-30										0.5	0.0	0.0	0.0	

(Table continued on next page)

TABLE 48 (Cont.)
Trends in Proportion of Friends Using Drugs
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change
Drink alcoholic beverages % saying none	18	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
	19-22	3.7	3.3	3.4	2.7	3.2	4.2	3.1	4.4	3.0	2.4	3.9	4.8	+0.9
	23-26					3.2	3.2	3.8	4.1	4.7	4.6	5.3	6.1	+0.8
	27-30									3.9	4.0	4.8	5.6	+0.8
% saying most or all	18	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5	58.6	-1.9
	19-22	76.6	77.6	75.2	75.1	74.9	71.9	74.2	71.3	73.4	74.1	70.0	71.4	+1.4
	23-26					73.2	74.4	69.5	74.9	68.9	69.8	67.1	69.3	+2.2
	27-30									66.7	67.8	62.0	62.7	+0.7
Get drunk at least once a week % saying none	18	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
	19-22	19.1	20.1	20.0	19.6	20.2	23.3	18.0	18.9	19.4	19.6	19.9	19.2	-0.7
	23-26					26.9	27.3	26.5	26.3	27.9	26.9	27.8	26.0	-1.8
	27-30									33.7	38.2	34.6	34.8	+0.2
% saying most or all	18	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5	29.7	+2.2
	19-22	21.9	23.3	22.0	20.2	22.7	21.7	20.8	21.3	24.0	22.6	23.6	24.9	+1.3
	23-26					11.4	11.6	12.5	11.9	12.8	12.0	13.9	11.6	-2.3
	27-30									5.2	6.3	6.7	6.6	-0.1
Smoke cigarettes % saying none	18	9.4	11.5	11.7	13.0	14.0	13.0	12.2	11.7	12.3	13.5	15.1	14.3	-0.8
	19-22	5.6	5.7	6.6	6.9	8.1	8.4	8.9	9.7	10.7	10.0	13.9	13.9	0.0
	23-26					6.1	5.0	8.4	7.9	10.2	9.9	11.3	10.4	-0.9
	27-30									7.4	10.2	9.3	9.6	+0.3
% saying most or all	18	23.3	22.4	24.1	22.4	19.2	22.8	21.5	21.0	20.2	23.1	21.4	21.8	+0.4
	19-22	31.8	27.6	25.6	25.2	25.6	22.7	21.9	22.5	19.3	19.9	19.2	20.2	+1.0
	23-26					25.6	22.7	19.7	18.5	16.5	20.5	16.9	18.1	+1.2
	27-30									15.8	14.2	11.6	12.9	+1.3
Approx. Wtd. N =	18	2987	3307	3303	3095	2945	2971	2798	2948	2961	2587	2361	2339	
	19-22	576	592	564	579	543	554	579	572	562	579	556	526	
	23-26					527	534	546	528	528	506	510	507	
	27-30									516	507	499	476	

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

- In general it appears that even some respondents who report that friends use illicit drugs, are not directly exposed to use themselves, judging by the differences in proportions saying they have some friends who use (Table 48), and the proportions who say they have not been around people who were using during the prior year (Table 49). This is especially true of the older age band.
- Considerably fewer of the 27-30 year olds have any friends who use steroids (8%) than do the 23-26 year olds (12%), or the 19-22 year olds (22%).
- With respect to *alcohol* use, the great majority of young adults have at least some friends who *get drunk at least once a week*, although this differs by age: 80% of the high school seniors, 81% of the 19 to 22 year olds, 74% of the 23 to 26 year olds, and 65% of the 27 to 30 year olds. The proportions who say most or all of their friends get drunk once a week differ substantially by age: 30% of the seniors, 25% of the 19 to 22 year olds, 12% of the 23 to 26 year olds, and 7% of the 27 to 30 year olds. In terms of direct exposure during the past year to people who were drinking alcohol "to get high or for 'kicks'," such exposure is almost universal in these four age groups: 92%, 94%, 91%, and 88%, respectively. (See Table 49.)
- Nearly all of these four groups also have at least a few friends who *smoke cigarettes*, with little difference by age. About a fifth of each of the younger three groups state that most or all of their friends smoke: 22% of the seniors, 20% of the 19 to 22 year olds, and 18% of the 23 to 26 year olds; while only 13% of the 27 to 30 year olds say the same. This divergence is very likely due to the increasing sorting of people in the workplace and neighborhoods by educational status, as they get further into their chosen jobs/professions.

Trends in Exposure to Drug Use by Young Adults

- Tables 48 and 49 also give trends in the proportion of friends using and in direct exposure to use. Trends are available for the 19 to 22 year olds since 1980, for the 23 to 26 year olds since 1984, and for the 27 to 30 year olds since 1988. Data for high school seniors since 1980 also have been included in these tables.
- As we found for seniors, trends in exposure to use tend to parallel trends in self-reported use for the various drugs among young adults. In recent years that has meant a decreasing number being exposed to *any illicit drug use* (Table 49), or through their own friendship circle (Table 48).
- This has been largely due to the decrease in exposure to *marijuana* use. It is particularly noteworthy that, while 34% of the 19 to 22 year olds in 1980 said *most or all* of their friends used

marijuana, only 8% said the same in 1991. Clearly the number of friendship groupings in which marijuana use is widespread has dropped dramatically.

- The proportion exposed to use of *any illicit drugs other than marijuana*, by way of contrast, did not change much between 1980 and 1986, but between 1986 and 1991 there was a drop in such exposure in all four age groups. In all four age groups this appears to be due particularly to drops in exposure to the use of *cocaine* and *amphetamines*, although there were decreases for *methaqualone*, *barbiturates*, and *tranquilizers* as well.
- All age groups have shown a longer term decline in exposure to *barbiturate* use, as well as the use of *amphetamines*, *methaqualone* and *tranquilizers*.
- In recent years there has been a considerable drop in the proportion of all four age groups who say they have any friends who use *crack*.
- For all four age groups there have been some modest declines in the proportion saying that most or all of their friends drink *alcohol*, but little change in the proportion saying that most or all of their friends get *drunk* once a week.
- Among seniors, the proportion who said most or all of their friends *smoked cigarettes* declined appreciably between 1975 and 1981, about when self-reported use declined, and leveled thereafter. Among 19 to 22 year olds a decline in friends' use occurred between 1980 (or possibly earlier) and 1985, followed by a leveling; and among 23 to 26 year olds such a downturn was evident between at least 1984 (the first year for which data are available) and 1988. These staggered changes illustrate that the "cohort effects" are moving up the age spectrum.
- All of these changes parallel changes in self-reported use by these four age groups, reinforcing our trust in the validity of the self-report data.

PERCEIVED AVAILABILITY OF DRUGS

Young adults participating in the follow-up survey receive identical questions to those asked of seniors about how difficult they think it would be to get each of the various drugs if they wanted them. The questions are contained in only one of the six questionnaire forms, yielding a weighted sample size for each four-year age band of about 500 to 600 cases. The data for the follow-up samples are presented in Table 50, along with the data for the seniors.

TABLE 49
Trends in Exposure to Drug Use
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change		
Any illicit drug ^a	% saying not at all	18	15.7	17.3	18.6	20.6	22.1	22.3	24.5	26.1	28.7	31.4	32.4	35.8	+3.4s	
		19-22	19.4	19.0	18.5	23.5	23.7	22.6	25.4	27.3	30.5	38.5	39.2	41.1	+1.9	
		23-26					31.1	29.8	32.0	37.6	37.3	41.7	45.4	47.9	+2.5	
		27-30									47.6	49.8	53.0	60.4	+7.4s	
	% saying often	18	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7	18.2	-2.5	
		19-22	34.6	34.0	32.1	24.4	24.4	23.7	21.1	18.9	19.9	16.2	16.4	17.6	+1.2	
		23-26					20.7	23.3	18.5	17.4	18.2	13.8	13.7	13.3	-0.4	
		27-30									13.7	12.0	10.8	8.2	-2.6	
	Any illicit drug ^a other than marijuana	% saying not at all	18	41.5	37.4	37.5	40.6	40.2	40.7	44.7	48.3	52.2	52.9	54.6	60.0	+5.4ss
			19-22	43.1	41.6	38.4	45.1	42.9	46.7	46.6	51.5	53.6	63.5	60.6	66.2	+5.6
			23-26					48.5	43.1	48.5	56.4	57.1	63.2	66.0	70.0	+4.0
			27-30									64.2	66.3	68.5	74.2	+5.7s
% saying often		18	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2	7.9	-1.3	
		19-22	11.8	15.6	13.5	11.1	10.7	10.2	8.2	8.1	7.5	6.7	4.5	4.4	-0.1	
		23-26					9.0	10.4	9.3	8.5	6.7	5.0	5.1	3.5	-1.6	
		27-30									6.0	4.7	4.1	3.2	-0.9	
Marijuana		% saying not at all	18	18.0	19.8	22.1	23.8	25.6	26.5	28.0	29.6	33.0	35.2	36.6	40.4	+3.8s
			19-22	20.2	20.2	21.3	27.3	25.9	24.5	27.6	29.5	33.7	40.7	42.5	45.0	+2.5
			23-26					34.7	34.0	35.9	41.0	42.4	45.0	49.4	52.1	+2.7
			27-30									50.9	52.6	57.9	64.0	+6.1s
	% saying often	18	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8	16.0	-1.8	
		19-22	32.6	30.5	30.3	21.1	21.9	20.3	18.6	16.4	18.3	14.2	14.7	15.9	+1.2	
		23-26					17.5	20.6	14.6	14.8	15.6	11.6	11.2	11.6	+0.4	
		27-30									10.9	9.8	8.5	6.7	-1.8	
	LSD	% saying not at all	18	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
			19-22	82.6	84.2	84.0	86.5	87.2	87.3	89.2	89.1	88.0	88.0	87.9	86.9	-1.0
			23-26					91.7	90.7	91.2	92.7	93.7	93.3	91.6	91.4	-0.2
			27-30									96.4	96.8	96.7	96.4	-0.3
% saying often		18	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6	2.9	+0.3	
		19-22	1.4	1.5	1.4	0.6	0.8	0.7	0.5	1.2	0.6	1.1	1.2	1.0	-0.2	
		23-26					0.3	0.4	0.4	0.7	0.6	0.3	0.5	0.2	-0.3	
		27-30									0.3	0.2	0.5	0.2	-0.3	
Other psychedelics		% saying not at all	18	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
			19-22	81.7	83.7	83.7	87.5	89.5	89.0	90.8	90.9	92.3	91.6	91.7	91.1	-0.6
			23-26					91.6	91.1	90.9	94.0	94.9	95.2	94.3	94.5	+0.2
			27-30									95.0	96.6	96.6	96.6	0.0
	% saying often	18	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2	1.3	+0.1	
		19-22	1.1	0.9	0.9	0.7	0.8	0.8	0.2	0.8	0.3	0.3	0.4	0.5	+0.1	
		23-26					0.1	0.3	0.5	0.6	0.8	0.1	0.4	0.4	0.0	
		27-30									0.2	0.4	0.5	0.3	-0.2	
	Cocaine	% saying not at all	18	62.3	63.7	65.1	66.7	64.4	61.7	62.6	65.1	69.8	69.8	72.3	78.7	+6.4sss
			19-22	62.4	57.7	56.4	63.4	61.1	60.6	58.5	63.0	63.8	73.4	76.0	81.5	+5.5s
			23-26					61.5	59.4	58.0	65.5	64.1	72.0	76.0	80.1	+4.1
			27-30									71.1	71.7	75.8	81.4	+5.6s
% saying often		18	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7	3.4	-1.3	
		19-22	5.8	7.6	6.5	4.3	6.5	7.0	5.4	5.2	4.8	4.3	2.2	1.6	-0.6	
		23-26					5.3	8.5	7.0	6.0	5.4	3.5	2.5	1.7	-0.8	
		27-30									4.4	3.9	2.9	2.2	-0.7	

(Table continued on next page)

TABLE 49 (Cont.)
Trends in Exposure to Drug Use
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

	Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change
Heroin														
% saying not at all	18	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
	19-22	95.6	96.7	95.9	97.1	96.9	95.2	97.1	97.1	97.1	97.1	97.5	97.0	-0.5
	23-26					97.7	96.7	96.8	97.1	98.3	97.7	97.7	98.2	+0.5
	27-30									97.9	98.6	98.5	99.1	+0.6
% saying often	18	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5	0.9	+0.4
	19-22	0.2	0.3	0.3	0.1	0.2	0.5	0.2	0.1	0.2	0.1	0.2	0.4	+0.2
	23-26					0.0	0.7	0.3	0.6	0.4	0.3	0.6	0.3	-0.3
	27-30									0.3	0.3	0.5	0.2	-0.3
Other narcotics														
% saying not at all	18	80.4	82.5	81.5	82.7	82.0	81.6	84.4	85.6	85.2	86.2	85.8	88.7	+2.9s
	19-22	85.6	85.6	84.8	89.1	87.6	86.3	90.2	87.8	88.8	91.0	90.6	90.8	+0.2
	23-26					91.0	87.7	90.8	90.3	92.6	92.0	94.1	91.7	-2.4
	27-30									93.5	93.5	94.2	94.5	+0.3
% saying often	18	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.6	1.4	-0.2
	19-22	0.7	0.5	0.5	0.9	0.7	1.0	0.5	0.4	0.9	0.3	0.2	1.0	+0.8
	23-26					0.4	0.5	1.3	0.8	0.8	0.5	1.6	0.7	-0.9
	27-30									0.7	0.5	1.0	0.3	-0.7
Amphetamines														
% saying not at all	18	59.2	50.5	49.8	53.9	55.0	59.0	63.5	68.3	72.1	72.6	71.7	76.4	+4.7ss
	19-22	57.7	51.4	51.6	60.3	58.7	64.1	68.7	73.3	78.8	81.5	80.5	82.6	+2.1
	23-26					67.7	69.5	70.9	79.1	81.2	86.0	83.2	85.4	+2.2
	27-30									84.4	85.7	86.5	89.3	+2.8
% saying often	18	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1	3.1	-1.0
	19-22	7.4	9.9	7.7	6.9	5.4	4.4	3.1	3.3	2.2	1.5	1.1	1.9	+0.8
	23-26					3.9	3.2	2.2	3.3	1.9	0.7	2.0	1.3	-0.7
	27-30									2.0	2.0	1.2	0.8	-0.4
Barbiturates														
% saying not at all	18	74.8	74.1	74.3	77.5	78.8	81.1	84.2	86.9	87.6	88.2	86.7	90.0	+3.3ss
	19-22	74.4	76.9	78.2	81.7	84.3	85.3	87.2	88.0	91.8	91.7	93.5	92.1	-1.4
	23-26					83.9	86.9	89.0	92.9	92.9	93.4	93.1	94.1	+1.0
	27-30									92.0	93.2	94.1	94.6	+0.5
% saying often	18	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7	1.2	-0.5
	19-22	2.5	2.8	1.1	1.4	0.7	1.3	0.5	0.7	0.7	0.3	0.7	0.4	-0.3
	23-26					0.7	0.9	1.7	0.8	0.6	0.3	1.1	0.3	-0.8
	27-30									0.7	0.4	0.6	0.2	-0.4
Tranquilizers														
% saying not at all	18	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
	19-22	70.4	73.1	71.5	80.5	78.8	80.5	83.6	81.5	86.2	88.0	87.3	87.4	+0.1
	23-26					76.9	79.0	83.1	84.1	86.6	87.1	88.0	89.6	+1.6
	27-30									85.0	88.4	88.9	90.3	+1.4
% saying often	18	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9	1.4	-0.5
	19-22	3.2	2.6	1.8	2.1	1.5	1.7	0.9	1.1	1.8	1.0	1.1	1.1	0.0
	23-26					2.0	1.6	2.6	1.8	1.2	0.8	0.5	1.0	+0.5
	27-30									1.4	0.3	1.7	0.8	-0.9
Alcoholic beverages														
% saying not at all	18	5.3	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4	8.3	+1.9s
	19-22	5.7	6.2	5.5	6.6	5.8	7.3	6.4	5.6	7.5	8.2	7.6	6.0	-1.6
	23-26					9.7	7.3	8.6	9.4	8.9	7.1	8.7	9.0	+0.3
	27-30									12.9	11.6	13.8	12.3	-1.5
% saying often	18	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1	54.5	-1.6
	19-22	59.6	61.2	62.5	56.6	59.3	61.8	59.9	61.4	55.4	53.8	56.0	53.9	-2.1
	23-26					52.1	54.8	51.4	53.0	48.1	50.9	49.7	48.4	-1.3
	27-30									39.9	39.5	38.7	38.0	-0.7
Approx. Wtd. N =														
	18	3259	3608	3645	3334	3238	3252	3078	3296	3300	2795	2556	2525	
	19-22	582	574	601	569	578	549	591	582	556	567	567	532	
	23-26					533	532	557	529	531	514	523	494	
	27-30									522	507	506	478	

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

^aThese estimates were derived from responses to the questions listed above. "Any illicit drug" includes all drugs except alcohol.

Perceived Availability for Young Adults in 1991

- In general, the proportions of young adults in the follow-up age bands who say it would be "fairly easy" or "very easy" to get various of the illicit drugs are highly similar to the proportions of seniors reporting such easy access. This is true for *marijuana*, *other psychedelics*, *crack*, *other opiates*, *amphetamines*, and *barbiturates*.
- The major exceptions include *cocaine*, which shows easier access to the drug for young adults than for high school seniors: 51% of seniors, 54% of 19 to 22 year olds, 58% of 23 to 26 year olds, and 60% of 27 to 30 year olds. Note, however, the high level of availability of this dangerous drug to all these age groups.
- *Crack* is available to roughly equal proportions (between 40% and 43%) of all four age groups.
- *Tranquilizers* show an increase in availability with age, while *LSD* is easier for the seniors and 19 to 22 year olds to get than for the two older groups.
- *Marijuana* is almost universally available to these age groups, while *amphetamines* and *cocaine* are seen as available by the majority. *Barbiturates* and *tranquilizers* are seen as available by nearly half.
- *Alcohol* and *cigarettes* are assumed to be available to virtually all young adults in these three age groups, so questions were not even included for these two drugs.

Trends in Perceived Availability for Young Adults

- The major trends in the perceived availability of these drugs to young adults parallel those shown for seniors. *Marijuana* has been virtually universally available to all these age groups throughout the historical periods covered by the available data. There has been a slight decrease (of 7%) among seniors since the peak year of 1979, and a slightly larger decrease (of 10%) since 1980 among 19 to 22 year olds, so that now perceived availability is essentially the same for all four groups (83% to 86% think it would be "fairly easy" or "very easy" to get marijuana).
- *Cocaine* availability, on the other hand, had been moving up among all three age groups over the 1985 to 1987 intervals, reaching historic highs in 1987. (Recall that seniors showed a rise in availability in earlier years—from 1975 to 1980—followed by a leveling between 1980 and 1985. Availability appeared to be level during the same latter period among young adults.) It is noteworthy that perceived availability of cocaine increased in all three age bands in 1987—the same year that use actually dropped sharply.

Between 1988 and 1989, the two younger age strata (age 18 and 19 to 22) were still increasing, while the two older were beginning to decrease in the proportion who believed cocaine to be easily available. In 1990 and 1991, all four groups reported decreased availability—quite likely because the number who have friends who are users has dropped so substantially in the last few years.

- **Crack** availability increased between 1987 and 1989, but has been falling since.
- The trends in **LSD** availability among young adults have also been fairly parallel to those for seniors. Among seniors there was a drop of about 10% in the mid 1970's and a later drop in the interval 1980 to 1986. The latter drop, at least, is paralleled in the data for 19 to 22 year olds. Between 1986 and 1991, availability increased among seniors and the 19 to 22 year olds. (There are no clear trends for the two oldest age groups in recent years, which may reflect their very low levels of use of this drug.)
- Over the long term, there has been a fair decline among all age groups in the availability of **hallucinogens other than LSD**.
- **Heroin** availability varied within a fairly narrow range from 1980 to 1986, but then showed a fair increase in all age groups through 1989. In 1991, all four groups exhibited a decline in perceived available.
- The availability of **opiates other than heroin** has slowly risen among seniors but remained quite stable over the life of the study in all three older age groups until 1987. From 1987 to 1990 there was a modest increase in all age groups, followed by some decline in 1991.
- The reported availability of **amphetamines** peaked in 1982 for both seniors and 19 to 22 year olds and has been declining gradually since, having fallen by over 10% among seniors and 14% among the 19 to 22 year olds. More recently there is some evidence of a decline among the 23 to 26 year olds, as well.
- **Barbiturates** have also shown a decline since about 1981 or 1982 in the two younger groups (by 13% among seniors and 20% among 19 to 22 year olds), and since 1984 (when data were first available) for 23 to 26 year olds. All age groups showed a decline in 1991.
- Finally, **tranquilizer** availability has been declining gradually among seniors since the study first began in 1975 (from 72% in 1975 to 41% in 1991). Since 1980, when data were first available for 19 to 22 year olds, availability has been declining more sharply and from a higher level than among seniors, such that previous differences between them in availability have been just about

TABLE 50
Trends in Reported Availability of Drugs
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Age Group	Percentage saying "fairly easy" or "very easy" ^a												'90-'91 change
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	
Marijuana	18	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4	83.3	-1.1
	19-22	95.6	91.1	92.4	89.7	88.3	89.5	87.2	85.9	87.1	87.1	86.2	86.0	-0.2
	23-26					92.5	88.8	88.8	90.3	86.9	88.7	83.3	82.5	-0.8
	27-30									89.3	86.0	83.1	83.8	+0.7
Amyl & Butyl Nitrites	18	NA	NA	NA	NA	NA	NA	NA	23.9	25.9	26.8	24.4	22.7	-1.7
	19-22					NA	NA	NA	22.8	26.0	NA	NA	NA	NA
	23-26								23.1	28.0	NA	NA	NA	NA
	27-30									26.7	NA	NA	NA	NA
LSD	18	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7	39.5	-1.2
	19-22	39.6	38.4	35.1	31.8	32.7	29.6	30.5	29.9	33.9	36.4	36.6	37.8	+1.2
	23-26					32.7	29.1	30.0	27.5	32.7	32.6	30.2	32.8	+2.6
	27-30									29.4	29.9	32.3	27.0	-5.3
PCP	18	NA	NA	NA	NA	NA	NA	NA	22.8	24.9	28.9	27.7	27.6	-0.1
	19-22					NA	NA	NA	21.7	24.6	NA	NA	NA	NA
	23-26								21.2	27.6	NA	NA	NA	NA
	27-30									24.3	NA	NA	NA	NA
MDMA	19-22					NA	NA	NA	NA	NA	NA	26.6	24.9	-1.7
	23-26								NA	NA	NA	21.4	23.1	+1.7
	27-30									NA	NA	27.1	20.8	-6.3s
Some other psychedelic	18	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3	28.0	-0.3
	19-22	42.1	37.7	33.5	31.0	28.9	28.7	26.3	27.5	28.7	28.1	28.9	26.6	-2.3
	23-26					31.8	29.6	26.4	25.6	29.6	28.7	27.0	25.7	-1.3
	27-30									28.6	29.6	30.8	24.9	-5.9s
Cocaine	18	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5	51.0	-3.5s
	19-22	55.7	56.2	57.1	55.2	56.2	56.9	60.4	65.0	64.9	66.8	61.7	54.3	-7.4s
	23-26					63.7	67.2	65.8	69.0	71.7	70.0	65.6	58.0	-7.6s
	27-30									68.6	68.2	64.0	60.0	-4.0
Crack	18	NA	NA	NA	NA	NA	NA	NA	41.1	42.1	47.0	42.4	39.9	-2.5
	19-22					NA	NA	NA	41.9	47.3	47.2	46.9	42.1	-4.8
	23-26								44.5	53.0	49.9	46.9	42.0	-4.9
	27-30									46.5	46.8	46.8	43.1	-3.7
Cocaine powder	18	NA	NA	NA	NA	NA	NA	NA	52.9	50.3	53.7	49.0	46.0	-3.0
	19-22					NA	NA	NA	58.7	60.2	61.7	56.5	52.5	-4.0
	23-26								64.9	69.1	60.1	58.6	53.2	-5.4
	27-30									63.5	62.8	57.9	55.8	-2.1

(Table continued on next page)

TABLE 50 (Cont.)
Trends in Reported Availability of Drugs
 Young Adults in Modal Age Groups of 18, 19-22, 23-26, and 27-30
 (Entries are percentages)

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?		Percentage saying "fairly easy" or "very easy" ^a												'90-'91 change
		Age Group	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Heroin	18	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9	30.6	-1.3
	19-22	18.9	19.4	19.3	16.4	17.2	20.8	21.2	24.4	28.5	31.6	30.7	25.3	-5.4s
	23-26					18.6	18.1	21.0	22.3	28.4	31.2	28.1	25.6	-2.5
	27-30									23.6	27.4	29.5	22.1	-7.4ss
Some other narcotic (including methadone)	18	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1	34.6	-3.5s
	19-22	32.7	32.4	30.8	31.0	28.7	34.3	32.6	33.8	37.9	37.9	35.6	35.4	-0.2
	23-26					32.8	32.1	33.6	32.2	35.9	36.4	34.7	33.2	-1.5
	27-30									31.6	36.2	36.1	29.0	-7.1s
Amphetamines	18	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7	57.3	-2.4
	19-22	71.7	72.6	73.5	69.7	69.1	69.1	63.1	61.8	61.3	62.2	57.7	58.3	+0.6
	23-26					65.8	66.0	64.5	65.3	62.2	60.1	55.8	54.8	-1.0
	27-30									54.3	58.6	55.3	54.4	-0.9
"Ice"	19-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24.0	21.8	-2.2
	23-26					NA	NA	NA	NA	NA	NA	22.3	20.0	-2.3
	27-30									NA	NA	27.3	19.7	-7.6ss
Barbiturates	18	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9	42.4	-3.5s
	19-22	59.5	61.1	56.8	54.2	48.1	52.7	46.8	44.6	45.5	47.7	44.2	41.7	-2.5
	23-26					52.7	47.7	46.4	45.9	47.4	44.8	41.6	39.6	-2.0
	27-30									43.2	44.5	44.2	38.5	-5.7
Tranquilizers	18	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7	40.8	-3.9s
	19-22	67.4	62.8	62.0	62.3	52.5	55.6	52.9	50.3	50.0	49.4	45.4	44.8	-0.6
	23-26					60.2	54.3	54.1	56.3	52.8	51.4	47.8	45.1	-2.7
	27-30									55.3	54.4	54.9	47.5	-7.4s
Steroids	19-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44.1	44.8	+0.7
	23-26					NA	NA	NA	NA	NA	NA	37.6	35.8	-1.8
	27-30									NA	NA	36.4	30.6	-5.8
Approx. Wtd. N =	18	3240	3578	3602	3385	3269	3274	3077	3271	3231	2806	2549	2476	
	19-22	582	601	582	588	559	571	592	581	568	572	571	534	
	23-26					540	541	548	539	526	514	532	511	
	27-30									519	513	510	487	

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

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

eliminated. Some decrease since 1984 among the 23 to 26 year olds has also helped to diminish the differences in availability among the three age groups. The declines continued in 1991.

COLLEGE STUDENTS

Chapter 18

PREVALENCE OF DRUG USE AMONG COLLEGE STUDENTS

The follow-up design of the Monitoring the Future project is capable of generating an excellent national sample of college students—better in many ways than the more typical design which first samples colleges and then samples students within them, because in the present sample the students are not clustered in a limited number of colleges. Given the much greater diversity in post-secondary institutions than in high schools, the use of a clustered sample would place far greater limitations on sample accuracy at the college level than at the high school level. (Note that the absence of dropouts in the high school senior sample should have practically no effect on the college sample, since very few of the dropouts would go on to college.)

Perhaps the major limitation of the present design for the purpose of characterizing college students is that it limits the age range of the college sample. For trend estimation purposes, we have decided to limit the age band to the most typical one for college attendance, i.e., one to four years past high school, which corresponds to the modal ages of 19 to 22 years old. According to statistics from the United States Bureau of the Census,¹⁵ this age band should encompass about 79% of all undergraduate college students enrolled full-time in 1989. Although extending the age band to be covered by an additional two years would cover 86% of all enrolled college students, it would also reduce by two years the interval over which we could report trend data. Some special analyses conducted earlier indicated that the differences in prevalence estimates under the two definitions were extremely small. The annual prevalence of all drugs except cocaine shifted only about one- or two-tenths of a percent, based on comparisons made in 1985. Cocaine, which has the greatest amount of age-related change, would have had an annual prevalence rate only 0.8% higher if the six-year age span were included rather than the four-year age span. Thus, for purposes of estimating all prevalence rates except lifetime prevalence, the four-year and six-year intervals are nearly interchangeable.

On the positive side, controlling the age band may be desirable for trend estimation purposes, because it controls for the possibility that the age composition of college students changes much with time. Otherwise, college students characterized in one year would represent a noncomparable segment of the population when compared to college students surveyed in another year.

College students are here defined as those follow-up respondents one to four years past high school who say they were registered as full-time students at the beginning of March in the year in question and who say they are enrolled in a two- or four-year college. Thus, the

¹⁵U.S. Bureau of the Census. [Telephone communication]. *Current population reports: Population characteristics, Series P-20, No. 400*. Washington, DC: U.S. Government Printing Office, publication pending.

definition encompasses only those who are one to four years past high school and are active full-time undergraduate college students in the year in question. It excludes those who previously may have been college students or may have completed college.

Prevalence rates for college students and their same-age peers are provided in Tables 51 to 55. Having statistics for both groups makes it possible to see whether college students are above or below their age peers in terms of their usage rates. (The college-enrolled sample now constitutes nearly half (48%) of the entire follow-up sample one to four years past high school.) Any difference between the two groups would likely be enlarged if data from the missing high school dropout segment were available for inclusion as part of the noncollege segment; therefore, any differences observed here are only an indication of the direction and relative size of differences between the college and the entire noncollege-enrolled populations, not an absolute estimate of them.

PREVALENCE OF DRUG USE IN 1991: COLLEGE STUDENTS

- For most drugs, use among college students now tends to be lower than among their age-peers, but the degree of difference varies considerably by drug as Tables 51 through 55 show.
- There is no difference between those enrolled in college vs. their fellow high school graduates of the same age (that is, one to four years past high school), in their annual prevalence of an overall index of *any illicit drug use* (both at 29%). However, college students are slightly lower in their use of *any illicit drug other than marijuana* (13% vs. 15%). In fact, for almost all the individual illicit drugs except *marijuana*, *MDMA*, *hallucinogens*, or *inhalants*, use among college students is lower than among their age peers. The overall index of use shows no difference because marijuana is an exception to the general rule.
- Annual *marijuana* use is the same among college students as among their fellow high school graduates of the same age (that is, one to four years past high school), both having a prevalence rate of 29%. However, their rate of current *daily marijuana use* is slightly lower, 1.8% vs. 2.7%.
- *Cocaine* shows the largest absolute difference in annual prevalence among the illicit drugs, 3.6% for college students vs. 6.2% for those not in college.
- The next largest absolute difference after *cocaine*, occurs for *stimulants*, with 3.9% of the college students vs. 5.9% of the others reporting use in the past year.
- Annual use of *crack* is distinctly lower among college students than among their "noncollege" age-peers, at 0.5% vs. 1.3%, respectively.

- College students are slightly below their noncollege age peers in annual usage rates for *LSD* (5.1% vs. 5.3%), *barbiturates* (1.2% vs. 2.0%), *opiates other than heroin* (2.7% vs. 3.0%), and *tranquilizers* (2.4% vs. 3.5%).
- *Ice* is used almost exclusively by those 19–22 year olds not in college (0.7% vs. 0.1%).
- Both groups give about equally low levels of self-reported use of *heroin* (college 0.1%, noncollege 0.2%).
- Use of *MDMA* (“*ecstasy*”) is slightly, but not significantly, higher among college students than among their noncollege age peers: annual prevalence is 0.9% vs. 0.7%.
- The annual prevalence for *inhalants* is slightly higher among the respondents in college full time, at 3.5% vs. 2.9% for the noncollege respondents.
- Today’s college students have slightly higher annual prevalence of *alcohol* use compared to their age peers (88% vs. 85%), a higher monthly prevalence (75% vs. 65%), but a very slightly lower daily prevalence (4.1% vs. 4.5%). The most important difference, however, lies in the prevalence of *occasions of heavy drinking* (five or more drinks in a row in the past two weeks), which is 43% among college students, vs. 34% among their age peers. (As noted in the next section, this difference appears primarily because heavy drinking is relatively low among noncollege females.) In sum, college students participate in more of what is probably heavy weekend drinking, even though they are a little less likely to drink on a daily basis.
- By far the largest difference between college students and others their age occurs for *cigarette smoking*. For example, their prevalence of daily smoking is only 14% vs. 26% for high school graduates that age who are currently not in college full-time. Smoking at the rate of half-pack a day stands at 8% vs. 18% for these two groups, respectively. Recall that the high school senior data show the college-bound to have much lower smoking rates in high school than the noncollege-bound: thus these substantial differences observed at college age actually preceded college attendance.¹⁶

¹⁶See also Bachman, J.G., O’Malley, P.M., and Johnston, L.D. (1984). Drug use among young adults: The impacts of role status and social environments. *Journal of Personality and Social Psychology*, 47, 629–645.

SEX DIFFERENCES IN PREVALENCE AMONG COLLEGE STUDENTS

Tabular data are provided separately for male and female college students, and their same age-peers, in Tables 51 to 55.

- It may be seen that most of the sex differences among college students replicate those discussed earlier for all young adults (one to twelve years past high school), which in turn replicated sex differences in high school for the most part. That means that among college students, males have higher annual prevalence rates for most drugs, with the largest proportional sex differences evident for *inhalants* (5.0% vs. 2.1%), *LSD* (7.2% vs. 3.4%), *hallucinogens* in general (8.7% vs. 4.3%), *barbiturates* (1.5% vs. 0.9%), *crack* (0.6% vs. 0.4%), *cocaine* in general (4.1% vs. 3.2%), and *marijuana* (27.7% vs. 25.4%).
- Among college students, females showed about the same prevalence for *stimulants* (4.0%) as did their male counterparts (3.8%), as well as for *opiates other than heroin* (2.6% vs. 2.7%).
- As is true for the entire young adult sample, substantial sex differences are to be found in *daily marijuana use* (2.5% for males vs. 1.3% for females).
- *Ecstasy* or MDMA shows equal annual use in 1991 among male and female college students (0.9%).
- *Ice* was added to the study in 1990. It is more likely to be used by 19-22 year olds not in college. Among college students, equally small percentages of each sex use the drug.
- Annual prevalence of *alcohol* is about the same for male and female college students (89% vs. 88%), but males are higher on thirty-day prevalence (77% vs. 72%), and much higher on daily drinking (6.0% vs 2.5%), and occasional heavy drinking (52% vs. 35%).

Among males, taking five or more drinks in a row occurs slightly less often for the noncollege group (45%) compared to college students (52%), and among females the difference is more pronounced (25% and 35%, respectively). Earlier analyses have shown that such drinking tends to decline among those who marry, and tends to increase among the unmarried who leave the parental home. Those analyses have also shown that the changes in drinking associated with college attendance are mainly explainable in terms of marital status and living arrangements.¹⁷ The fact that the college vs. noncollege difference is greater among females than among males is largely attributable to sex differences in age of marriage:

¹⁷Bachmar, J.G., O'Malley, P.M., and Johnston, L.D. (1984). Drug use among young adults: The impacts of role status and social environments. *Journal of Personality and Social Psychology*, 47, 629-645.

TABLE 51

**Lifetime Prevalence^c for Various Types of Drugs, 1991:
Full-Time College Students vs. Others
Among Respondents 1-4 Years Beyond High School
(Entries are percentages)**

	Total		Males		Females	
	Full-Time College	Others	Full-Time College	Others	Full-Time College	Others
Any Illicit Drug ^e	50.4	56.7	51.3	57.3	49.7	56.2
Any Illicit Drug ^e Other than Marijuana	25.8	34.2	27.	34.9	24.3	33.5
Marijuana	46.3	53.2	46.9	54.0	45.7	52.6
Inhalants ^d	14.4	15.4	18.4	19.4	10.8	12.2
Hallucinogens	11.3	13.7	13.8	17.2	9.3	10.7
LSD	9.6	12.8	12.0	16.1	7.5	9.9
Cocaine	9.4	15.3	11.4	17.1	7.8	13.8
Crack	1.5	4.8	1.8	6.0	1.4	3.9
MDMA ^f	2.0	2.5	3.0	3.6	1.3	1.6
Heroin	0.5	0.8	0.4	1.3	0.5	0.4
Other opiates ^a	7.3	8.4	8.1	8.5	6.7	8.4
Stimulants, Adjusted ^{a,b}	13.0	19.8	13.5	19.2	12.5	20.4
Crystal Methamphetamine ("Ice") ^f	1.3	3.1	2.1	3.8	0.6	2.5
Barbiturates ^a	3.5	6.5	4.7	6.7	2.4	6.2
Tranquilizers ^a	6.8	9.1	6.6	8.8	7.0	9.4
Alcohol	93.6	93.1	94.1	93.7	93.2	92.5
Cigarettes	NA	NA	NA	NA	NA	NA
Approx. Wtd. N =	(1410)	(1500)	(640)	(690)	(770)	(810)

NOTE: NA indicates data not available.

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

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

^cData are uncorrected for cross-time inconsistencies in the answers.

^dThis drug was asked about in five of the six questionnaire forms. Total N for college students in 1991 is 1190.

^eUse of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders.

^fThis drug was asked about in two of the six questionnaire forms. Total N for college students in 1991 is 530.

TABLE 52

Annual Prevalence for Various Types of Drugs, 1991:
 Full-Time College Students vs. Others
 Among Respondents 1-4 Years Beyond High School
 (Entries are percentages)

	Total		Males		Females	
	Full-Time College	Others	Full-Time College	Others	Full-Time College	Others
Any Illicit Drug ^e	29.2	28.7	30.2	31.4	28.4	26.3
Any Illicit Drug ^e Other than Marijuana	13.2	15.4	14.4	16.8	12.1	14.3
Marijuana	26.5	25.7	27.7	29.4	25.4	22.5
Inhalants ^d	3.5	2.9	5.0	3.6	2.1	2.3
Hallucinogens	6.3	5.7	8.7	8.7	4.3	3.2
LSD	5.1	5.3	7.2	7.8	3.4	3.1
Cocaine	3.6	6.2	4.1	7.0	3.2	5.5
Crack	0.5	1.3	0.6	2.1	0.4	0.7
MDMA ^a	0.9	0.7	0.9	0.7	0.9	0.8
Heroin	0.1	0.2	0.2	0.3	0.0	0.1
Other opiates ^b	2.7	3.0	2.7	2.8	2.6	3.2
Stimulants, Adjusted ^{b,c}	3.9	5.9	4.0	6.4	3.8	5.5
Crystal Methamphetamine ("Ice") ^a	0.1	0.7	0.1	0.7	0.1	0.7
Barbiturates ^b	1.2	2.0	1.5	2.2	0.9	1.8
Tranquilizers ^b	2.4	3.5	1.9	3.9	2.9	3.2
Alcohol	88.3	85.3	89.2	88.0	87.6	82.9
Cigarettes	35.6	45.2	32.9	44.2	37.9	46.1
Approx. Wtd. N =	(1410)	(1500)	(640)	(690)	(770)	(810)

NOTE: NA indicates data not available.

^aThis drug was asked about in two of the five questionnaire forms. Total N for college students in 1991 is 530.

^bOnly drug use that was not under a doctor's orders is included here.

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

^dThis drug was asked about in four of the five questionnaire forms. Total N for college students in 1991 is 1190.

^eUse of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, sedatives, or tranquilizers not under a doctor's orders.

TABLE 53

**Thirty-Day Prevalence for Various Types of Drugs, 1991:
Full-Time College Students vs. Others
Among Respondents 1-4 Years Beyond High School
(Entries are percentages)**

	Total		Males		Females	
	Full-Time College	Others	Full-Time College	Others	Full-Time College	Others
Any Illicit Drug ^e	15.2	15.4	16.0	17.6	14.6	13.6
Any Illicit Drug ^e Other than Marijuana	4.3	5.9	4.8	6.1	3.9	5.7
Marijuana	14.1	13.9	15.2	16.5	13.1	11.6
Inhalants ^d	0.9	0.7	1.3	1.0	0.6	0.5
Hallucinogens	1.2	1.5	1.7	2.1	0.8	1.0
LSD	0.8	1.2	1.1	1.5	0.5	0.9
Cocaine	1.0	1.6	1.4	1.5	0.8	1.7
Crack	0.3	0.2	0.4	0.3	0.2	0.2
MDMA ^a	0.2	0.0	0.5	0.0	0.0	0.0
Heroin	0.1	0.0	0.2	0.1	0.0	0.0
Other opiates ^b	0.6	0.8	0.6	0.5	0.7	1.0
Stimulants, Adjusted ^{b,c}	1.0	2.3	0.9	2.2	1.1	2.4
Crystal Methamphetamine ("Ice") ^a	0.0	0.1	0.0	0.1	0.0	0.0
Barbiturates ^b	0.3	0.6	0.6	0.9	0.1	0.4
Tranquilizers ^b	0.6	0.7	0.5	0.8	0.7	0.6
Alcohol	74.7	65.0	77.3	72.3	72.4	58.6
Cigarettes	23.2	32.5	21.3	33.3	24.7	31.8
Approx. Wtd. N =	(1410)	(1500)	(640)	(690)	(770)	(810)

NOTE: NA indicates data not available.

^aThis drug was asked about in two of the five questionnaire forms. Total N for college students in 1991 is 530.

^bOnly drug use that was not under a doctor's orders is included here.

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

^dThis drug was asked about in four of the five questionnaire forms. Total N for college students in 1991 is 1190.

^eUse of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, sedatives, or tranquilizers not under a doctor's orders.

TABLE 54

**Thirty-Day Prevalence of Daily Use
for Marijuana, Cocaine, Stimulants, Alcohol, and Cigarettes, 1991:
Full-Time College Students vs. Others
Among Respondents 1-4 Years Beyond High School
(Entries are percentages)**

	Total		Males		Females	
	<u>Full-Time College</u>	<u>Others</u>	<u>Full-Time College</u>	<u>Others</u>	<u>Full-Time College</u>	<u>Others</u>
Marijuana	1.8	2.7	2.5	3.8	1.3	1.7
Cocaine	0.0	0.0	0.1	0.1	0.0	0.0
Stimulants, Adjusted ^{a,b}	0.1	0.1	0.2	0.0	0.0	0.1
Alcohol						
Daily	4.1	4.5	6.0	7.6	2.5	1.9
5+ drinks in a row in past 2 weeks	42.8	34.4	52.3	44.7	34.9	25.4
Cigarettes						
Daily (any)	13.8	25.9	11.8	27.1	15.5	24.8
Half-pack or more per day	8.0	18.4	7.5	19.0	8.5	17.9
Approx. Wtd. N =	(1410)	(1500)	(640)	(690)	(770)	(810)

NOTE: The illicit drugs not listed here showed a daily prevalence of less than 0.05% in all groups.

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

^bOnly drug use that was not under a doctor's orders is included here.

TABLE 55

Lifetime^a, Annual and Thirty-Day Prevalence of an Illicit Drug Use Index, 1991:
 Full-Time College Students vs. Others
 Among Respondents 1-4 Years Beyond High School
 (Entries are percentages)

	Total		Males		Females	
	Full-Time College	Others	Full-Time College	Others	Full-Time College	Others
	<u>Percent reporting use in lifetime</u>					
Any Illicit Drug ^b	50.4	56.7	51.3	57.3	49.7	56.2
Any Illicit Drug Other than Marijuana	25.8	34.2	27.6	34.9	24.3	33.5
	<u>Percent reporting use in last twelve months</u>					
Any Illicit Drug	29.2	28.7	30.2	31.4	28.4	26.3
Any Illicit Drug Other than Marijuana	13.2	15.4	14.4	16.8	12.1	14.3
	<u>Percent reporting use in last thirty days</u>					
Any Illicit Drug	15.2	15.4	16.0	17.6	14.6	13.6
Any Illicit Drug Other than Marijuana	4.3	5.9	4.8	6.1	3.9	5.7
Approx. Wtd. N =	(1410)	(1500)	(640)	(690)	(770)	(810)

^aData are uncorrected for cross-time inconsistencies in the answers.

^bUse of "any illicit drug" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, sedatives, or tranquilizers not under a doctor's orders.

in the first four years after high school noncollege females are more likely than noncollege males to marry, whereas very few full-time students (either male or female) tend to marry.

- One other drug-using behavior which has shown a sex difference among college students appreciably different from those observed in the sample of all young adults involves *cigarette smoking*. While the not-in-college segment of this age group has consistently shown little or no sex difference in smoking rates in recent years, among college students there *has* been a consistent and appreciable sex difference in smoking, with college women more likely to smoke than college men (particularly at lighter levels of use). In 1991, 16% of the females vs. 12% of the males indicate daily smoking. (A glance ahead at Figure 78 in the next chapter shows a fairly consistent sex difference among college students prior to 1987. In recent years the differences appears to be narrowing.)

Chapter 19

TRENDS IN DRUG USE AMONG COLLEGE STUDENTS

Since the drug-using behaviors of American college students in the late 1960's and early 1970's represented the beginning of what was to become a very broad epidemic of illicit drug use in the general population, it is important to note what has happened to those behaviors among college students in more recent years.

In this section we continue to use the same definition of college students: high school graduates one to four years past high school who are enrolled full time in a two-year or four-year college at the beginning of March in the year in question. For comparison purposes trend data are provided on the remaining respondents who are also one to four years past high school. (See Figures 65 through 78.) Because the rate of college enrollment declines steadily with number of years beyond high school, the comparison group is slightly older on the average than the college-enrolled group. However, this should influence the comparisons of the college-enrolled with the other group rather little, since age effects in this age range are rather small.

It should also be remembered that the difference between the enrolled and other group shows the degree to which college students are above or below average for other high school *graduates* in this age band. Were we able to include the high school dropout segment in the "other" calculation, any differences with the college-enrolled likely would be accentuated.

For each year there are approximately 1100-1400 respondents constituting the college student sample (see Table 56 for N's per year) and roughly 1500-1700 respondents constituting the "other" group one to four years past high school. Comparisons of the trends since 1980 in these two groups are given below. (It was not until 1980 that enough follow-up years had accrued to characterize young people one to four years past high school.)

TRENDS IN PREVALENCE 1980-1991: COLLEGE STUDENTS

- The proportion of college students using *any illicit drug* in the prior year dropped steadily from 1980 to 1984 (from 56% to 45%), followed by a leveling from 1984 to 1986, and then a significant decline from 45% to 29% between 1986 and 1991. (See Table 57 and Figure 65.) *Marijuana* use has shown a similar pattern (see Table 57), and in both cases the trend curves have been almost identical for both college students and those not enrolled in college (see Figures 65 and 67a). They also track almost exactly the trend curves for high school seniors.

TABLE 56

Trends in Lifetime^e Prevalence of Various Types of Drugs
Among College Students 1-4 Years Beyond High School
(Entries are percentages)

	Percent who used in lifetime												'90-'91 change
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(1040)	(1130)	(1150)	(1170)	(1110)	(1080)	(1190)	(1220)	(1310)	(1300)	(1400)	(1410)	
Any Illicit Drug ^f	69.4	66.8	64.6	66.9	62.7	65.2	61.8	60.0	58.4	55.6	54.0	50.4	-3.6
Any Illicit Drug Other than Marijuana	42.2	41.3	39.6	41.7	38.6	40.0	37.5	35.7	33.4	30.5	28.4	25.8	-2.6
Marijuana	65.0	63.3	60.5	63.1	59.0	60.6	57.9	55.8	54.3	51.3	49.1	46.3	-2.8
Inhalants ^b	10.2	8.8	10.6	11.0	10.4	10.6	11.0	13.2	12.6	15.0	13.9	14.4	+0.5
Hallucinogens	15.0	12.0	15.0	12.2	12.9	11.4	11.2	10.9	10.2	10.7	11.2	11.3	+0.1
LSD	10.3	8.5	11.5	8.8	9.4	7.4	7.7	8.0	7.5	7.8	9.1	9.5	+0.5
Cocaine	22.0	21.5	22.4	23.1	21.7	22.9	23.3	20.6	15.8	14.6	11.4	9.4	-2.0
Crack ^c	NA	NA	NA	NA	NA	NA	NA	3.3	3.4	2.4	1.4	1.5	+0.1
MDMA ("Ecstasy") ^g	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.8	3.9	2.0	-1.9
Heroin	0.9	0.6	0.5	0.3	0.5	0.4	0.4	0.6	0.3	0.7	0.3	0.5	+0.2
Other Opiates ^a	8.9	8.3	8.1	8.4	8.9	6.3	8.8	7.6	6.3	7.6	6.8	7.3	+0.5
Stimulants ^a	29.5	29.4	NA										
Stimulants, Adjusted ^{a,d}	NA	NA	30.1	27.8	27.8	25.4	22.3	19.8	17.7	14.6	13.2	13.0	-0.2
Crystal methamphetamine ^h	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0	1.3	+0.3
Sedatives ^a	13.7	14.2	14.1	12.2	10.8	9.3	8.0	6.1	4.7	4.1	NA	NA	NA
Barbiturates ^a	8.1	7.8	8.2	6.6	6.4	4.9	5.4	3.5	3.6	3.2	3.8	3.5	-0.3
Methaqualone ^a	10.3	10.4	11.1	9.2	9.0	7.2	5.8	4.1	2.2	2.4	NA	NA	NA
Tranquilizers ^a	15.2	11.4	11.7	10.8	10.8	9.8	10.7	8.7	8.0	8.0	7.1	6.8	-0.3
Alcohol	94.3	95.2	95.2	95.0	94.2	95.3	94.9	94.1	94.9	93.7	93.1	93.6	+0.5

NOTES: Level of significance of difference between the two most recent years:

s = .05, ss = .01, sss = .001.

NA indicates data not available.

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

^bThis drug was asked about in four of the five questionnaire forms in 1980-89, and in five of the six questionnaire forms in 1990-1991. Total N in 1991 (for college students) is 1190.

^cThis drug was asked about in two of the five questionnaire forms in 1987-89, and in all six questionnaire forms in 1990-1991.

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

^eData are uncorrected for cross-time inconsistencies in the answers.

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

^gThis drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1991. Total N in 1991 (for college students) is 530.

^hThis drug was asked about in two of the six questionnaire forms. Total N in 1991 (for college students) is 530.

TABLE 57

**Trends in Annual Prevalence of Various Types of Drugs
Among College Students 1-4 Years Beyond High School**
(Entries are percentages)

	Percent who used in last twelve months												'90-'91 change
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(1040)	(1130)	(1150)	(1170)	(1110)	(1080)	(1190)	(1220)	(1310)	(1300)	(1400)	(1410)	
Any Illicit Drug ^e	56.2	55.0	49.5	49.8	45.1	46.3	45.0	40.1	37.4	36.7	33.3	29.2	-4.1s
Any Illicit Drug ^e Other than Marijuana	32.3	31.7	29.9	29.9	27.2	26.7	25.0	21.3	19.2	16.4	15.2	13.2	-2.0
Marijuana	51.2	51.3	44.7	45.2	40.7	41.7	40.9	37.0	34.6	33.6	29.4	26.5	-2.9
Inhalants ^b	3.0	2.5	2.5	2.8	2.4	3.1	3.9	3.7	4.1	3.7	3.9	3.5	-0.4
Hallucinogens	8.5	7.0	8.7	6.5	6.2	5.0	6.0	5.9	5.3	5.1	5.4	6.3	+0.9
LSD	6.0	4.6	6.3	4.3	3.7	2.2	3.9	4.0	3.6	3.4	4.3	5.1	+0.8
Cocaine	16.8	16.0	17.2	17.3	16.3	17.3	17.1	13.7	10.0	8.2	5.6	3.6	-2.0s
Crack ^c	NA	NA	NA	NA	NA	NA	1.3	2.0	1.4	1.5	0.6	0.5	-0.1
MDMA ("Ecstasy") ^f	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.3	2.3	0.9	-1.4
Heroin	0.4	0.2	0.1	0.0	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.0
Other Opiates ^a	5.1	4.3	3.8	3.8	3.8	2.4	4.0	3.1	3.1	3.2	2.9	2.7	-0.2
Stimulants ^a	22.4	22.2	NA										
Stimulants, Adjusted ^{a,d}	NA	NA	21.1	17.3	15.7	11.9	10.3	7.2	6.2	4.6	4.5	3.9	-0.6
Crystal methamphetamine ^e	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.1	0.0
Sedatives ^a	8.3	8.0	8.0	4.5	3.5	2.5	2.6	1.7	1.5	1.0	NA	NA	NA
Barbiturates ^a	2.9	2.8	3.2	2.2	1.9	1.3	2.0	1.2	1.1	1.0	1.4	1.2	-0.2
Methaqualone ^a	7.2	6.5	6.6	3.1	2.5	1.4	1.2	0.8	0.5	0.2	NA	NA	NA
Tranquilizers ^a	6.9	4.8	4.7	4.6	3.5	3.6	4.4	3.8	3.1	2.6	3.0	2.4	-0.6
Alcohol	90.5	92.5	92.2	91.6	90.0	92.0	91.5	90.9	89.6	89.6	89.0	88.3	-0.7
Cigarettes	36.2	37.6	34.3	36.1	33.2	35.0	35.3	38.0	36.6	34.2	35.5	35.6	+0.1

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

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

^bThis drug was asked about in four of the five questionnaire forms in 1980-89, and in five of the six questionnaire forms in 1990-1991. Total N in 1991 (for college students) is 1190.

^cThis drug was asked about in one of the five questionnaire forms in 1986, in two of the five questionnaire forms in 1987-89, and in all six forms in 1990-1991.

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

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

^fThis drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1991. Total N in 1991 (for college students) is 530.

^gThis drug was asked about in two of the six questionnaire forms. Total N in 1991 (for college students) is 530.

TABLE 58

**Trends in Thirty-Day Prevalence of Various Types of Drugs
Among College Students 1-4 Years Beyond High School**
(Entries are percentages)

	Percent who used in last thirty days												'90-'91 change
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	
Approx. Wtd. N =	(1040)	(1130)	(1150)	(1170)	(1110)	(1080)	(1190)	(1220)	(1310)	(1300)	(1400)	(1410)	
Any Illicit Drug ^e	38.4	37.6	31.3	29.3	27.0	26.1	25.9	22.4	18.5	18.2	15.2	15.2	0.0
Any Illicit Drug Other than Marijuana	20.7	18.6	17.1	13.9	13.8	11.8	11.6	8.8	8.5	6.9	4.4	4.3	-0.1
Marijuana	34.0	33.2	26.8	26.2	23.0	23.6	22.3	20.3	16.8	16.3	14.0	14.1	+0.1
Inhalants ^b	1.5	0.9	0.8	0.7	0.7	1.0	1.1	0.9	1.3	0.8	1.0	0.9	-0.1
Hallucinogens	2.7	2.3	2.6	1.8	1.8	1.3	2.2	2.0	1.7	2.3	1.4	1.2	-0.2
LSD	1.4	1.4	1.7	0.9	0.8	0.7	1.4	1.4	1.1	1.4	1.1	0.8	-0.3
Cocaine	6.9	7.3	7.9	6.5	7.6	6.9	7.0	4.6	4.2	2.8	1.2	1.0	-0.2
Crack ^c	NA	NA	NA	NA	NA	NA	NA	0.4	0.5	0.2	0.1	0.3	+0.2
MDMA ("Ecstasy") ^f	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3	0.6	0.2	-0.4
Heroin	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	+0.1
Other Opiates ^a	1.8	1.1	0.9	1.1	1.4	0.7	0.6	0.8	0.8	0.7	0.5	0.6	+0.1
Stimulants ^a	13.4	12.3	NA										
Stimulants, Adjusted ^{a,d}	NA	NA	9.9	7.0	5.5	4.2	3.7	2.3	1.8	1.3	1.4	1.0	-0.4
Crystal methamphetamine ^g	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sedatives ^a	3.8	3.4	2.5	1.1	1.0	0.7	0.6	0.6	0.6	0.2	NA	NA	NA
Barbiturates ^a	0.9	0.8	1.0	0.5	0.7	0.4	0.6	0.5	0.5	0.2	0.2	0.3	+0.1
Methaqualone ^a	3.1	3.0	1.9	0.7	0.5	0.3	0.1	0.2	0.1	0.0	NA	NA	NA
Tranquilizers ^a	2.0	1.4	1.4	1.2	1.1	1.4	1.9	1.0	1.1	0.8	0.5	0.6	+0.1
Alcohol	81.8	81.9	82.8	80.3	79.1	80.3	79.7	78.4	77.0	76.2	74.5	74.7	+0.2
Cigarettes	25.8	25.9	24.4	24.7	21.5	22.4	22.4	24.0	22.6	21.1	21.5	23.2	+1.7

NOTES: Level of significance of difference between the two most recent years:

$s = .05$, $ss = .01$, $sss = .001$.

NA indicates data not available.

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

^bThis question was asked in four of the five questionnaire forms in 1980-89, and in five of the six questionnaire forms in 1990-1991. Total N in 1991 (for college students) is 1190.

^cThis question was asked in two of the five questionnaire forms in 1987-89, and in all six questionnaire forms in 1990-1991.

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

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

^fThis drug was asked about in two of the five questionnaire forms in 1989, and in two of the six questionnaire forms in 1990-1991. Total N in 1991 (for college students) is 530.

^gThis drug was asked about in two of the six questionnaire forms. Total N in 1991 (for college students) is 530.

TABLE 59

**Trends in Thirty-Day Prevalence of Daily Use
for Marijuana, Cocaine, Stimulants, Alcohol, and Cigarettes
Among College Students 1-4 Years Beyond High School**

(Entries are percentages)

Percent who used daily in last thirty days

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>'90-'91 change</u>
Approx. Wtd. N =	(1040)	(1130)	(1150)	(1170)	(1110)	(1080)	(1190)	(1220)	(1310)	(1300)	(1400)	(1410)	
Marijuana	7.2	5.6	4.2	3.8	3.6	3.1	2.1	2.3	1.8	2.6	1.7	1.8	+0.1
Cocaine	0.2	0.0	0.3	0.1	0.4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Stimulants ^a	0.5	0.4	NA										
Stimulants, Adjusted ^{a,b}	NA	NA	0.3	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Alcohol													
Daily	6.5	5.5	6.1	6.1	6.6	5.0	4.6	6.0	4.9	4.0	3.8	4.1	+0.3
5+ drinks in a row in last 2 weeks	43.9	43.6	44.0	43.1	45.4	44.6	45.0	42.8	43.2	41.7	41.0	42.8	+1.8
Cigarettes													
Daily	18.3	17.1	16.2	15.3	14.7	14.2	12.7	13.9	12.4	12.2	12.1	13.8	+1.7
Half-pack or more per day	12.7	11.9	10.5	9.6	10.2	9.4	8.3	8.2	7.3	6.7	8.2	8.0	-0.2

NOTES: For all drugs not included here, daily use is below 0.5% in all years. Level of significance of difference between the two most recent years:

$s = .05$, $ss = .01$, $sss = .001$.

NA indicates data not available, NT indicates data not yet tabulated.

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

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

TABLE 60

Trends in Lifetime, Annual, and Thirty-Day Prevalence of An Illicit Drug Use Index
Among College Students 1-4 Years Beyond High School, by Sex
(Entries are percentages)

	1980 ^a	1981 ^a	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	'90-'91 change
Percent reporting use in lifetime ^b													
Any Illicit Drug	69.4	66.8	64.6	66.9	62.7	65.2	61.8	60.0	58.4	55.6	54.0	50.4	-3.6
Males	71.0	67.5	68.1	71.3	66.4	69.8	64.7	63.5	56.0	56.5	52.5	51.3	-1.2
Females	67.5	66.3	61.5	63.0	59.2	61.6	59.4	57.4	60.2	54.9	55.1	49.7	-5.4s
Any Illicit Drug Other than Marijuana	42.2	41.3	39.6	41.7	38.6	40.0	37.5	35.7	33.4	30.5	28.4	25.8	-2.6
Males	42.8	39.8	45.1	44.6	40.9	42.1	38.2	37.2	31.8	30.6	26.2	27.6	+1.4
Females	41.6	42.6	34.7	39.2	36.4	38.3	37.0	34.6	34.6	30.4	30.1	24.3	-5.8s
Percent reporting use in last twelve months													
Any Illicit Drug	56.2	55.0	49.5	49.8	45.1	46.3	45.0	40.1	37.4	36.7	33.3	29.2	-4.1s
Males	58.9	56.2	54.6	53.4	48.4	50.9	49.8	43.3	37.0	38.2	34.2	30.2	-4.0
Females	53.3	54.0	44.9	46.7	41.9	42.7	41.1	37.7	37.6	35.4	32.5	28.4	-4.1
Any Illicit Drug Other than Marijuana	32.3	31.7	29.9	29.9	27.2	26.7	25.0	21.3	19.2	16.4	15.2	13.2	-2.0
Males	33.7	32.8	35.4	33.5	29.2	29.7	28.6	23.5	19.4	18.7	15.7	14.4	-1.3
Females	31.1	30.8	26.9	26.8	25.2	24.4	22.1	19.6	19.0	14.6	14.8	12.1	-2.7
Percent reporting use in last thirty days													
Any Illicit Drug	38.4	37.6	31.3	29.3	27.0	26.1	25.8	22.4	18.5	18.2	15.2	15.2	0.0
Males	42.9	40.6	37.7	33.8	30.4	29.9	31.0	24.0	18.8	20.0	18.2	16.0	-2.2
Females	34.0	34.8	25.6	25.5	23.7	23.2	21.7	21.1	18.3	16.7	12.7	14.6	+1.9
Any Illicit Drug Other than Marijuana	20.7	18.6	17.1	13.9	13.8	11.8	11.6	8.8	8.5	6.9	4.4	4.3	-0.1
Males	22.8	18.6	20.2	16.0	16.1	12.6	14.4	9.0	8.2	8.0	4.9	4.8	-0.1
Females	18.7	18.5	14.2	12.1	11.5	11.2	9.3	8.5	8.8	6.0	4.0	3.9	-0.1
Approx. Wtd. N													
All Respondents	1040	1130	1150	1170	1110	1080	1190	1220	1310	1300	1400	1410	
Males	520	530	550	550	540	490	540	520	560	580	620	640	
Females	520	600	610	620	570	600	650	700	750	720	780	770	

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

^aRevised questions about stimulant use were introduced in 1982 to exclude more completely the inappropriate reporting of nonprescription stimulants. The data in italics are therefore not strictly comparable to the other data.

^bData are uncorrected for cross-time inconsistencies in the answers.

- Use of *any illicit drugs other than marijuana* declined more steadily between 1980 and 1986 (with annual prevalence among college students dropping gradually from 32% to 25%), but showed an accelerating decline (to 15%) between 1987 and 1991 (Table 57). Again, this parallels the trend for the non-college group (Figure 66).
- Also, for *most individual classes of illicit drugs*, the trends since 1980 among those enrolled in college tend to parallel those for the noncollege group, as well as the trends observed among seniors. That means that for most drugs there has been a decline in use over that time interval.
- In particular, 30-day prevalence of *marijuana* use among college students decreased steadily and now has dropped by more than half since 1980 (from 34% to 14% in 1991). Their noncollege peers have shown a comparable decline over the same time interval (from 35% to 14%). (See Figure 67a.)
- Daily *marijuana* use among college students fell significantly between 1980 and 1986, from 7.2% to 2.1%, as it did for those not in college and as it did among high school seniors. (The latter two groups declined even more sharply, because they started higher than the college students in 1980.) Since 1986 the decline has, almost of necessity, decelerated and perhaps ceased. (The rate stands at 1.8% in 1991.) In sum, the proportion of American college students who are actively smoking marijuana on a daily basis has dropped by more than three-fourths since 1980 (see Figure 67b).
- An appreciable and ongoing decline has occurred for *stimulant* use, for which annual prevalence has dropped by more than eight-tenths, from 21% in 1982 to 4% in 1991. Proportionately this is a larger drop than among seniors, but is fairly parallel to the overall change among their age-peers not in college (Figure 74).
- *Methaqualone* showed a dramatic drop among college students, going from an annual prevalence of 7.2% in 1980 to 0.2% in 1989. Again, this drop has been greater than among high school students, though only slightly greater, and parallels the even greater decline observed among those not in college. There remained practically no college-noncollege difference in methaqualone as both groups approached a 0% prevalence level. (Because of the very low levels reported for this drug it was dropped from the questionnaires in 1990 to make room for other questions.)
- Among the other drugs, one of the largest declines observed among college students was for *LSD*, with annual prevalence falling in the early eighties, from 6.3% in 1982 to 2.2% in 1985. However, this figure rose to 3.9% in 1986, remained fairly level through 1989, and then increased significantly to 5.1% in 1991. Those young

adults not in college full-time have shown fairly parallel trends, as have high school seniors, though the seniors did not show a recent significant rise (Figure 70).

- **Barbiturate** use was already quite low among college students in 1980 (at 2.9% annual prevalence) but it fell by more than half to 1.3% by 1985. This proportional decline was, once again, more sharp than among high school students, and less sharp than among the young adults not in college. Annual prevalence has remained unchanged since 1985 among college students and their noncollege peers, while use by high school seniors continued to decline through 1988 before levelling. (See Figure 75.)
- Figure 76 shows that the annual prevalence of **tranquilizer** use among college students dropped by half in the period 1980–1984, from 6.9% to 3.5%, remained fairly level until 1988, when it declined again (to 3.1%).¹⁸ It is down to 2.4% in 1991. Use in the noncollege segment dropped more sharply in the 1980–84 period, narrowing the difference between the two groups. Then it levelled again between 1985 and 1988, and has declined further to 3.5% in 1991. Recall that tranquilizer use also dropped steadily among seniors, from 10.8% in 1977 to 3.6% in 1991.
- The use of **opiates other than heroin** by college students has held fairly steady (2.7% in 1991) after dropping slightly between 1980 and 1982 (annual prevalence fell from 5.1% to 3.8%). This trend parallels quite closely what has been happening for those not in college as well as for the seniors (Figure 73).
- Like the high school seniors, college students showed a relatively stable pattern of **cocaine** use between 1980 and 1986, followed by a large decline from an annual prevalence of 17% in 1986 to 3.6% in 1991—a drop of nearly eight-tenths. Their noncollege counterparts showed a similarly large decline from 19% in 1986 to 6.2% in 1991. Use among college students has dropped more sharply than among high school seniors, with the result that there is no longer a difference in their annual prevalence rates for cocaine (Figure 72).
- It is in regard to **alcohol** use that college students appear to be showing shifts in use that are different from those observed either among their age peers not in college, or among high school seniors. The noncollege segment and the seniors have shown fairly substantial declines since 1981 in the prevalence of having **five or more drinks in a row** during the two weeks prior to the survey. College students, however, have shown less decline (Figure 77c). Between 1981 and 1991 this measure of heavy drinking dropped by 11.6%

¹⁸ The use of barbiturates and tranquilizers very likely was dropping during the latter half of the 1970s, judging by the trends among high school seniors.

for high school seniors, by 8.8% for the noncollege 19–20 year olds, but by only 0.8% among college students. As a result, the difference between the other two groups on this behavior has widened.

It is interesting to conjecture about why college students have not shown much decline in heavy drinking while their noncollege peers and high school seniors have. One possibility is that campuses have provided some insulation to the effects of changes in the drinking age laws. Also, in college under-age individuals are mixed in with peers who are of legal age to purchase alcohol in a way that is no longer true in high schools and less true, perhaps, for those 19–22 who are not in college.

On the other hand, college students generally have had slightly lower rates of *daily drinking* than their age group taken as a whole (Figure 77b). Daily drinking among the young adults not enrolled in college declined from 8.7% in 1981 to 6.5% in 1984, remained essentially unchanged through 1988, and since then has resumed a decline (to 4.5% in 1991). The daily drinking estimates for college students—which appear a little less stable, perhaps due to smaller sample sizes—showed little or no decline between 1980 and 1984, but some considerable decline since then. (Daily prevalence was 6.5% in 1980, 6.6% in 1984, and 4.1% in 1991.)

- *Cigarette smoking* among American college students declined modestly in the first half of the eighties. Thirty-day prevalence fell from 26% to 22% between 1980 and 1985, but has been relatively stable since then (it was 23% in 1991). The *daily smoking* rate fell from 18.3% in 1980 to 12.7% in 1986, and has been fairly level since (13.8% in 1991). While the rates of smoking are dramatically lower among college students than among those not in college, their trends had been quite parallel up to 1986, at which point smoking rates stabilized among college students, while continuing to decline among young adults not in college.

Among high school seniors, the decline in daily use of cigarettes during the 1980–1986 interval was much less steep. This divergence of trends between high school seniors and college-age graduates has resulted in much less difference in daily usage rates in 1990 between high school seniors (19%) and 19 to 22 year olds (20%) than there was in 1980 (21% vs. 30%). The quite different trends are occurring because of the greater importance of cohort effects than secular trends in determining shifts in smoking behavior. In essence, the earlier decline among seniors showed up a few years later as those same graduating cohorts of seniors passed through college.

- In sum, the trends in substance use among American college students generally parallel closely those occurring among their age group as a whole, though there are a few important differences in absolute levels. One major exception occurred for occasions of

heavy drinking, which fell off among those not enrolled full-time in college (as well as among high school seniors) but remained fairly constant among college students. The other occurred for cigarettes, where use continues to fall among those not enrolled in college, but has remained stable among college students.

The trends among college students are also highly parallel, for the most part, to the trends among high school seniors, although declines in many drugs over the decade (1980-1990) have been proportionately larger among college students (and for that matter among all young adults of college age) than among seniors. Cigarettes are an exception to the assertion of parallel trends, since the smoking trends are driven primarily by enduring differences among cohorts.

SEX DIFFERENCES IN TRENDS AMONG COLLEGE STUDENTS

One trend which is not obvious from the figures included here is the fact that the proportion of college students who are female generally has been rising slowly. Females constituted 50% of our 1980 sample of college students, but 55% of our 1991 sample. Given that there exist substantial sex differences in the use of some drugs, we have been concerned that apparent long-term trends in the levels of drug use among college students might actually be attributable to changes in the sex composition of that population. For that reason, in particular, we present separate trend lines for the male and female components of the college student population. Differences in the trends observed for these two groups are illustrated in the lower panels of Figures 65 through 78, and are discussed below:

- In general, trends in the use of the *various drugs*, and in the overall *drug use indexes*, have been highly parallel for male and female college students, as an examination of the relevant figures will show. The most noteworthy exceptions are mentioned below.
- After 1986, *cocaine* has dropped more steeply for males than for females in general, and among male college students in particular; narrowing the gap between the sexes (see Figure 72).
- Certain other drug use measures have shown a convergence of usage levels between the sexes, mainly because they are converging toward zero. *Daily marijuana use* is one such example, with the decline among males between 1980 and 1986 narrowing the gap between the sexes. Since 1986 there has been no further narrowing, however. (In 1991 the rates were 2.5% vs. 1.3% for male and female college students, respectively.) See Figure 67b.
- *Methaqualone* also showed a convergence in use, with males declining more (no figure given).

- *Stimulant* use (Figure 74) also showed some convergence in the early eighties due to a greater decline among males. In fact, male and female college student use has been essentially equal for the past three years.
- Annual prevalence of *alcohol* use has been virtually identical for the two sexes throughout the period. However, there had been some evidence of a divergence in their 30-day prevalence rates in the mid-eighties, with females dropping and males rising overall, although more recently they have been converging again. Roughly the same has been true for *daily* prevalence, and for *occasions of heavy drinking*.

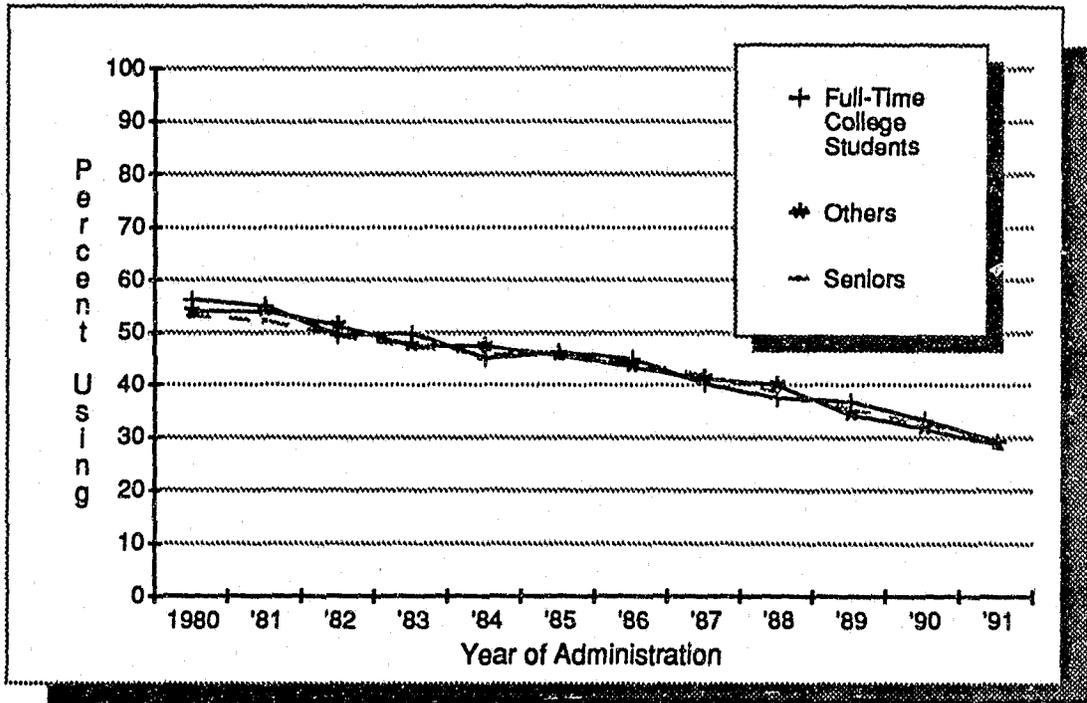
Among college males, occasions of heavy drinking clearly became more prevalent (by about 5%) in the 1984–1986 period than they had been at the beginning of the eighties; and, if anything, they became less prevalent among noncollege males (by about 4%). This led to college males overtaking and surpassing noncollege males in occasions of heavy drinking (58% vs. 52%, respectively, in 1986). At the same time the prevalence for college females held steady while for noncollege females it dropped about 3%. The result of these trends was that college students looked more different from the noncollege segment on this measure in the mid-eighties than they did in the early eighties, and they continue to maintain this difference in 1991.

Note in Figure 77c that there has nearly always been some difference between the college and noncollege groups in occasions of heavy drinking. This is attributable to the noncollege females drinking less than their female counterparts in college (likely due to a larger proportion of them being married). Although the rate of occasional heavy drinking for females in college has held quite steady since 1980, the gap has widened because of the declining rate (through 1990) among the noncollege females.

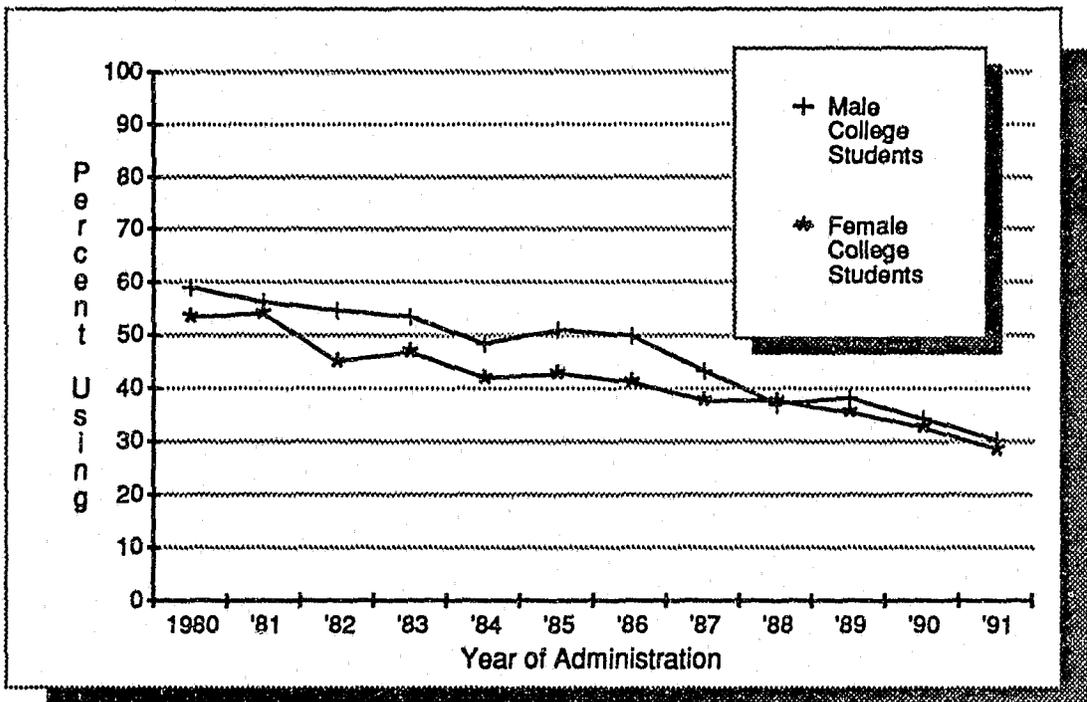
- Between 1980 and 1988 *cigarette* smoking has consistently been higher among females than males in college, despite decreases for both sexes during the first half of the decade. However, since about 1984 the gap has been narrower than it was in the early eighties, because use by female college students declined some, while use by male college students did not.

FIGURE 65

**Any Illicit Drug: Trends in Annual Prevalence
Among College Students Vs. Others^a
1-4 Years Beyond High School**



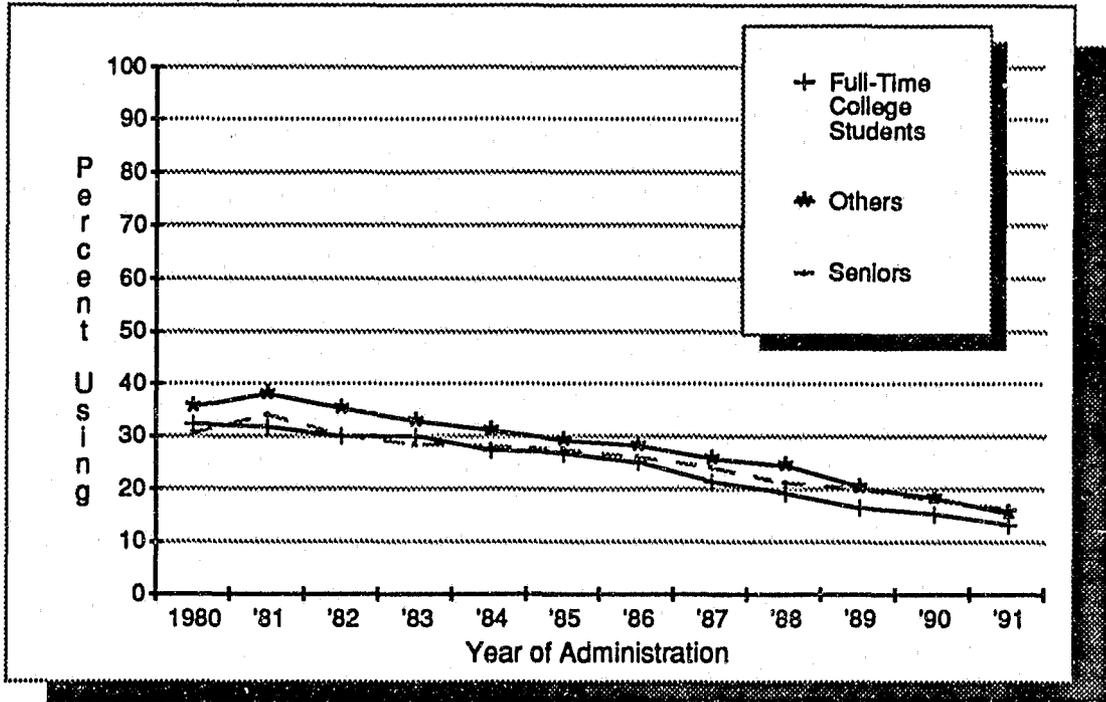
**Any Illicit Drug: Trends in Annual Prevalence
Among Male and Female College Students**



^a“Others” refers to high school graduates 1-4 years beyond high school not currently enrolled full-time in college.

FIGURE 66

**Any Illicit Drug Other than Marijuana: Trends in Annual Prevalence Among College Students Vs. Others
1-4 Years Beyond High School**



Any Illicit Drug Other than Marijuana: Trends in Annual Prevalence Among Male and Female College Students

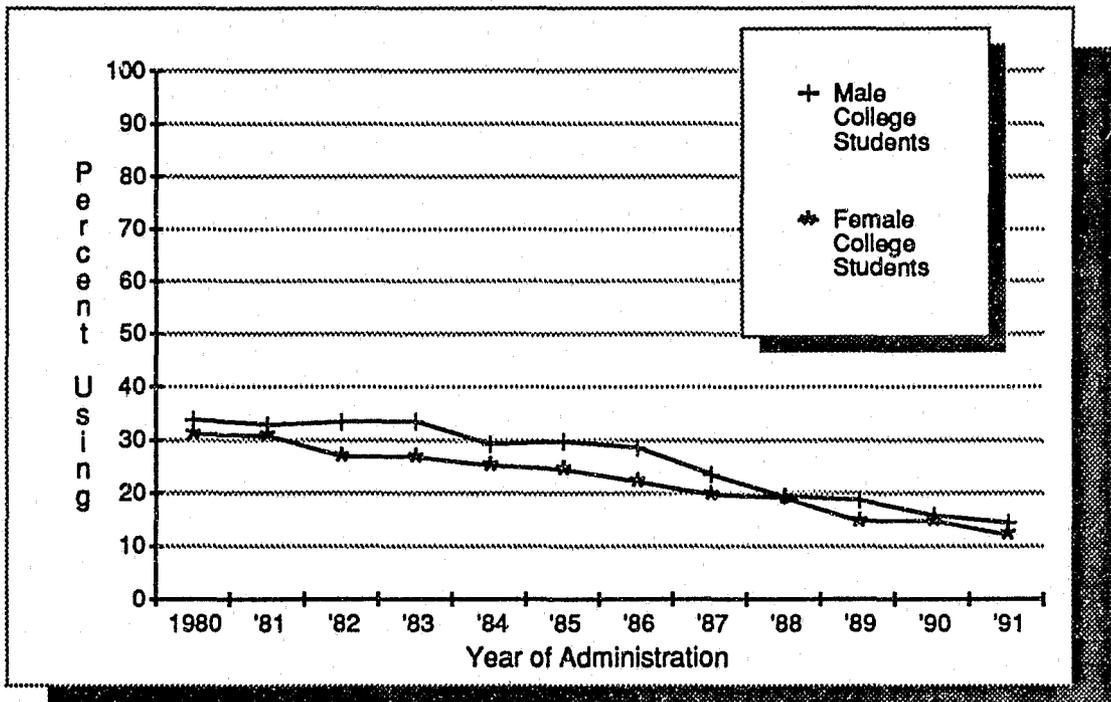
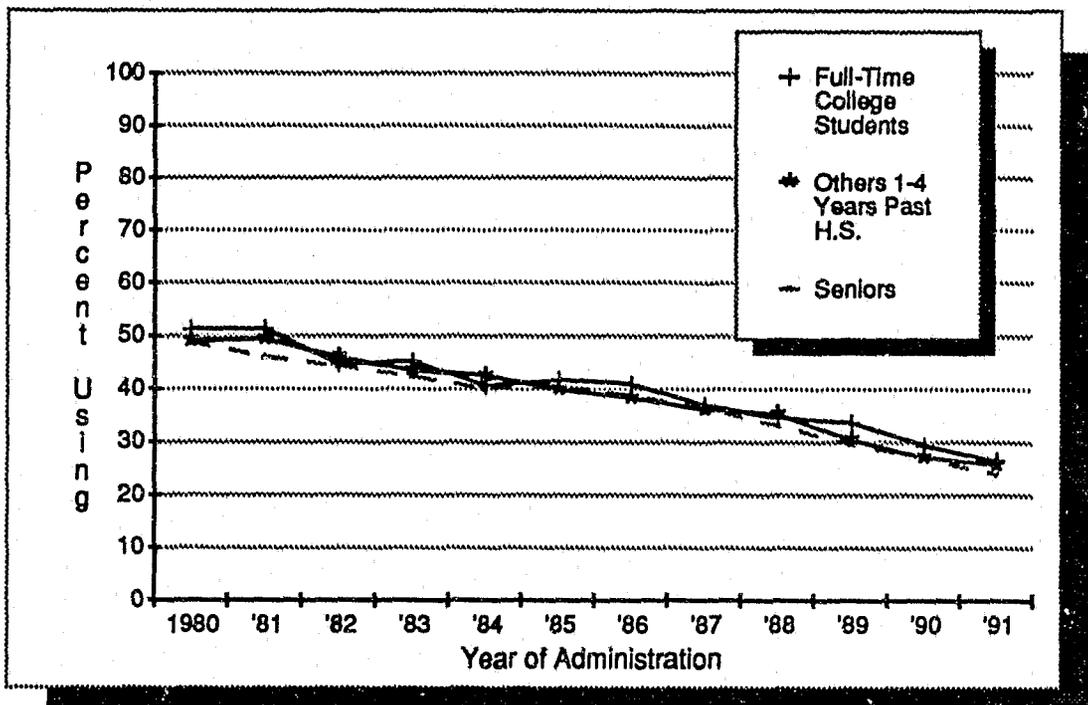


FIGURE 67a

**Marijuana: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School**



**Marijuana: Trends in Annual Prevalence
Among Male and Female College Students**

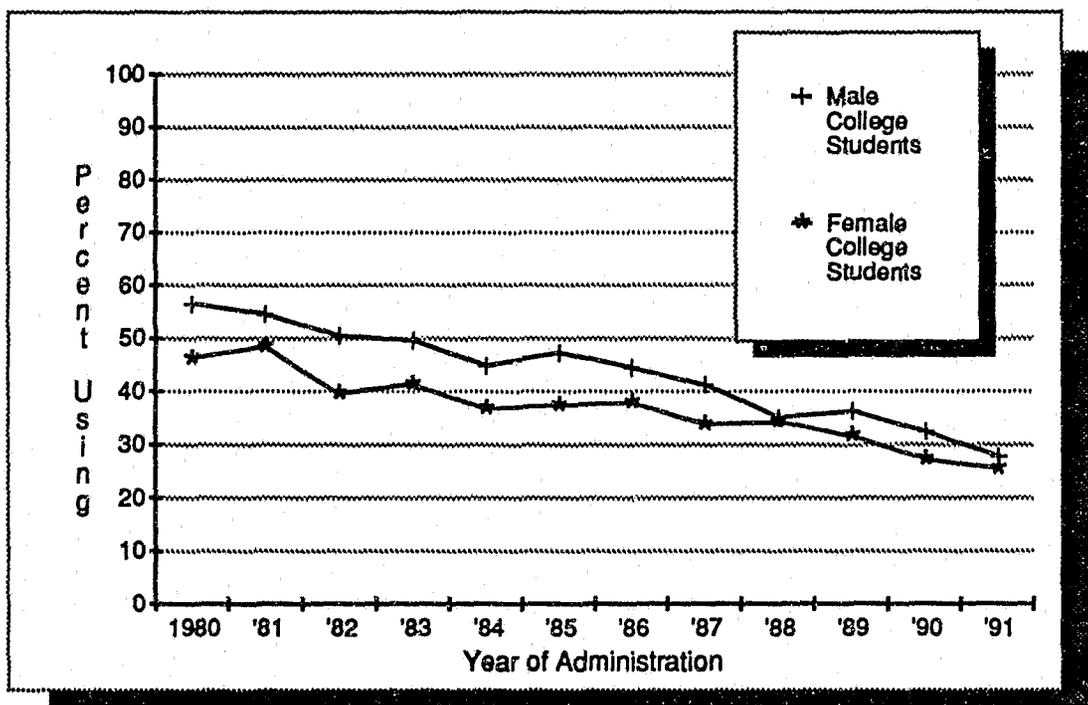
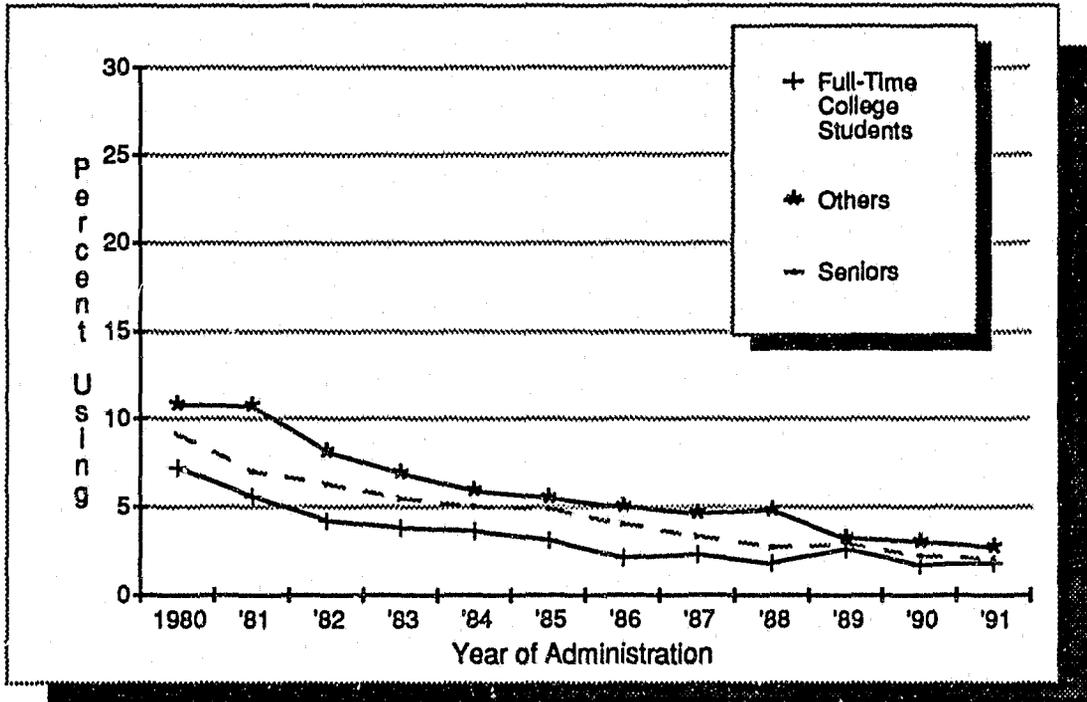


FIGURE 67b

**Marijuana: Trends in Thirty-Day Prevalence of Daily Use Among College Students Vs. Others
1-4 Years Beyond High School**



Marijuana: Trends in Thirty-Day Prevalence of Daily Use Among Male and Female College Students

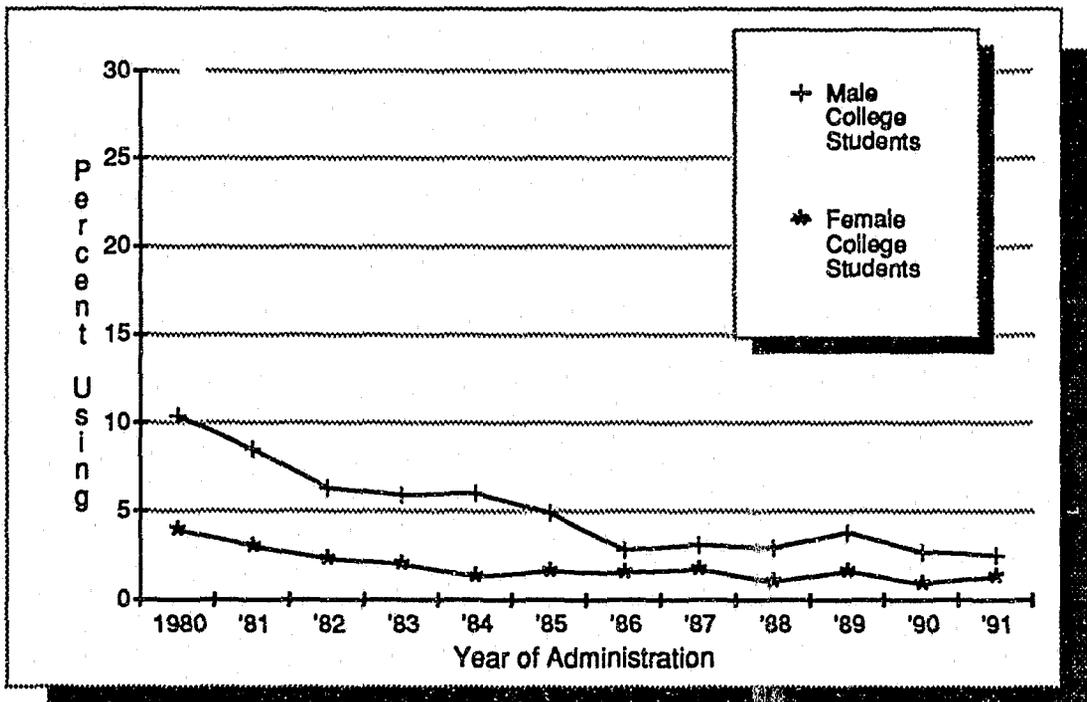
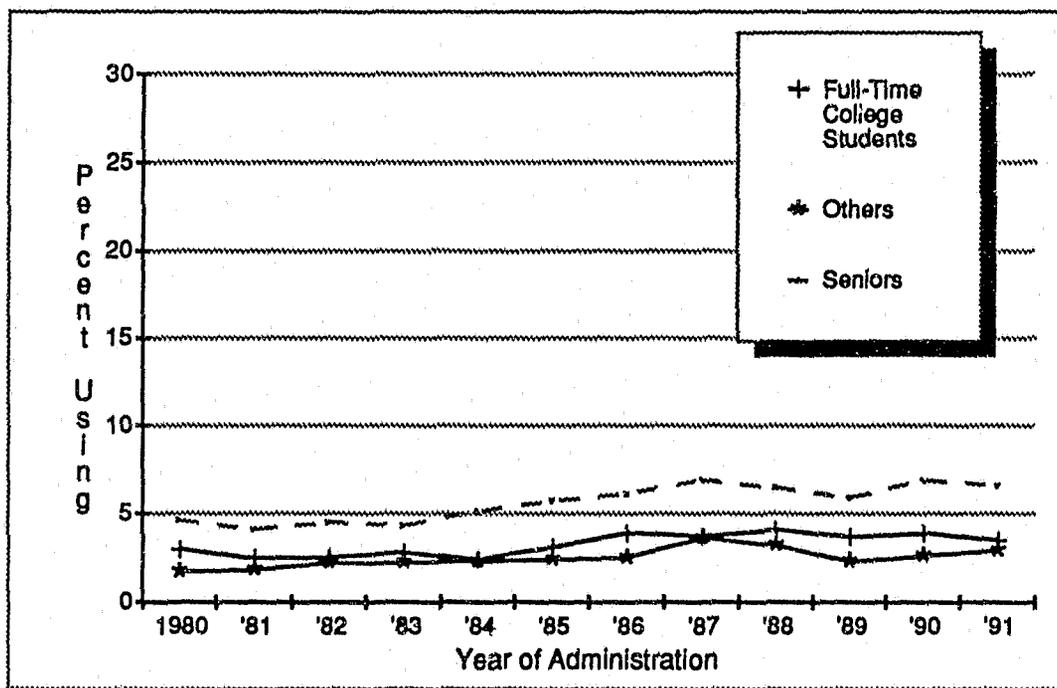
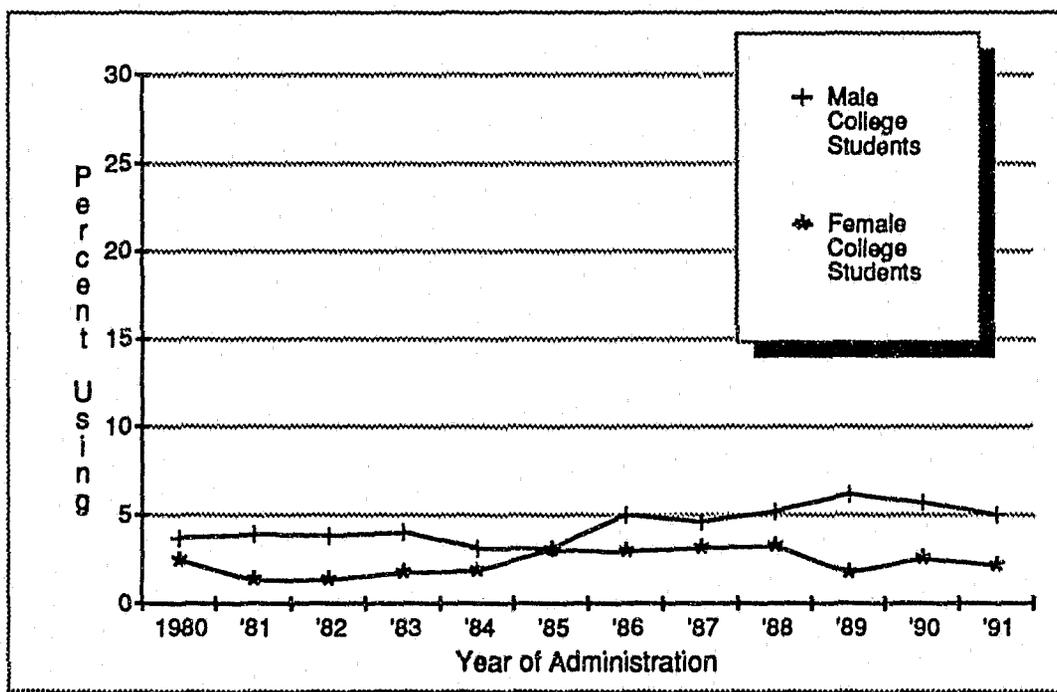


FIGURE 68

**Inhalants* : Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School**



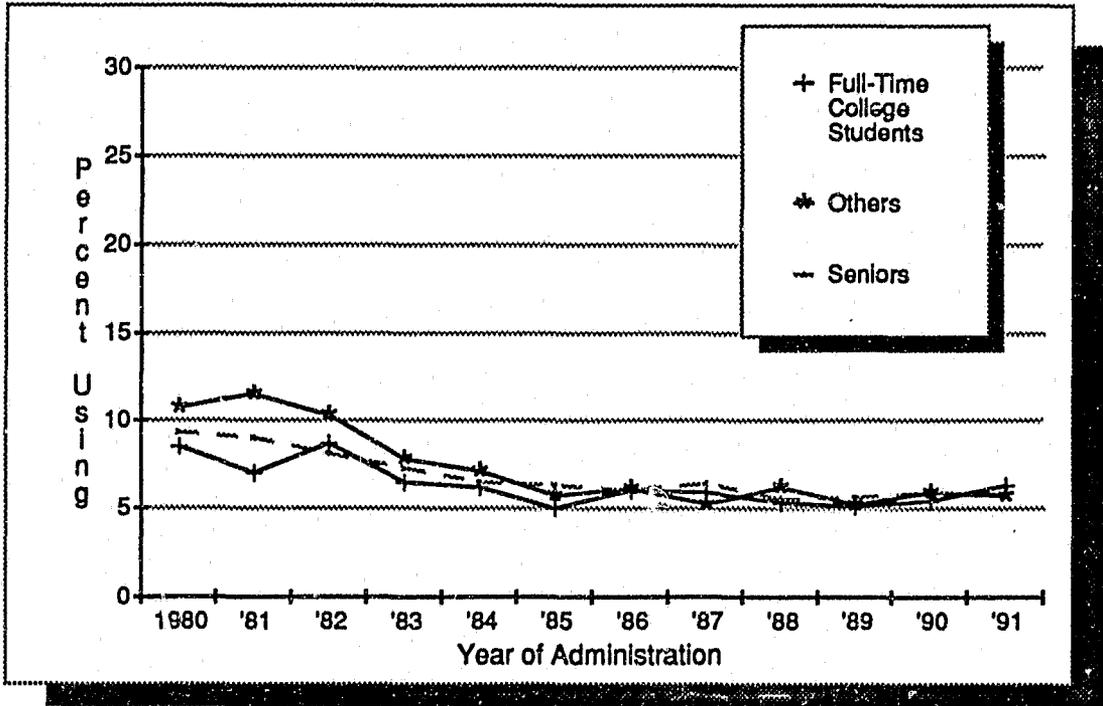
**Inhalants* : Trends in Annual Prevalence
Among Male and Female College Students**



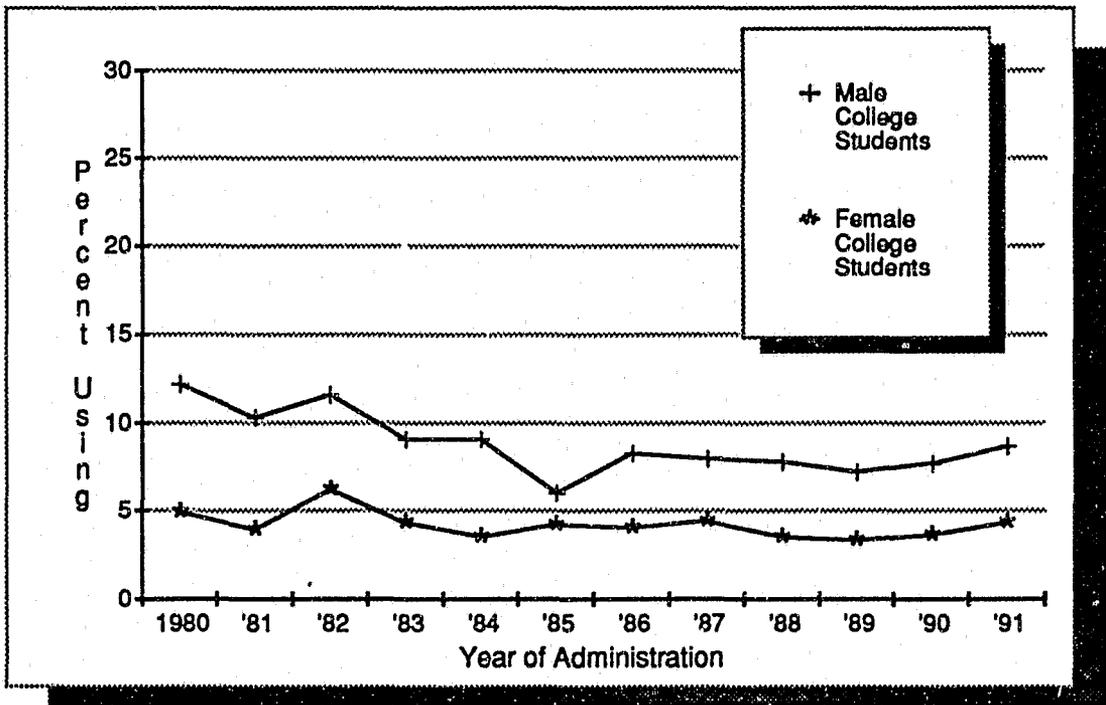
*Unadjusted for the possible underreporting of amyl and butyl nitrites.

FIGURE 69

Hallucinogens*: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



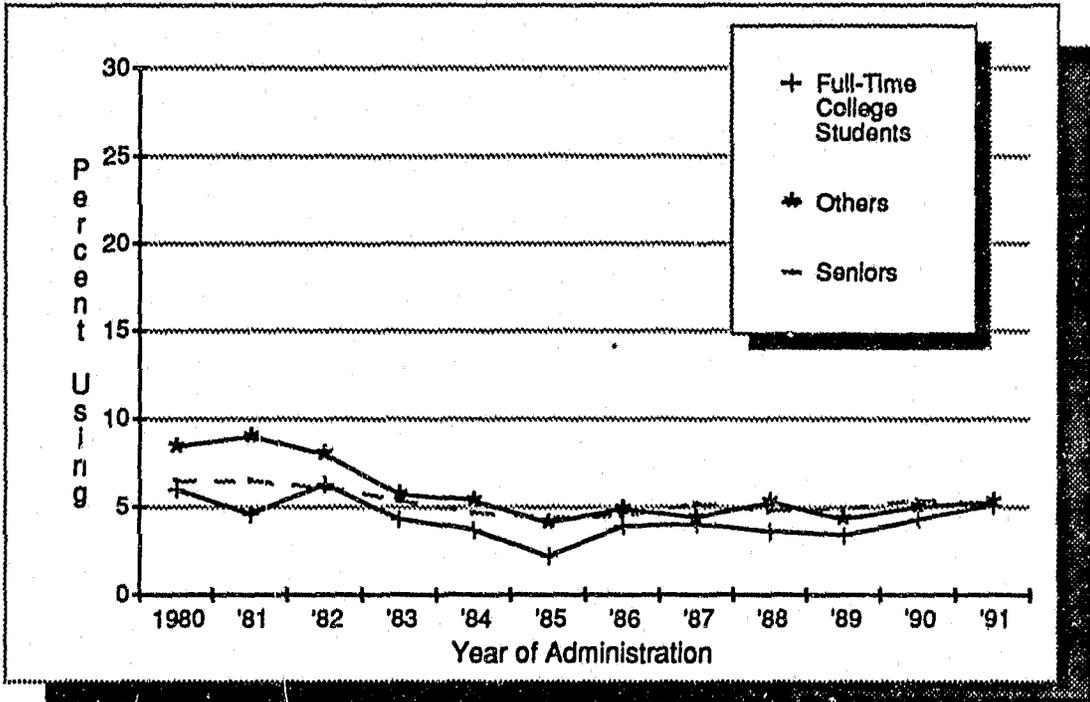
Hallucinogens*: Trends in Annual Prevalence
Among Male and Female College Students



*Unadjusted for the possible underreporting of PCP.

FIGURE 70

LSD: Trends in Annual Prevalence Among College Students Vs. Others
1-4 Years Beyond High School



LSD: Trends in Annual Prevalence Among
Male and Female College Students

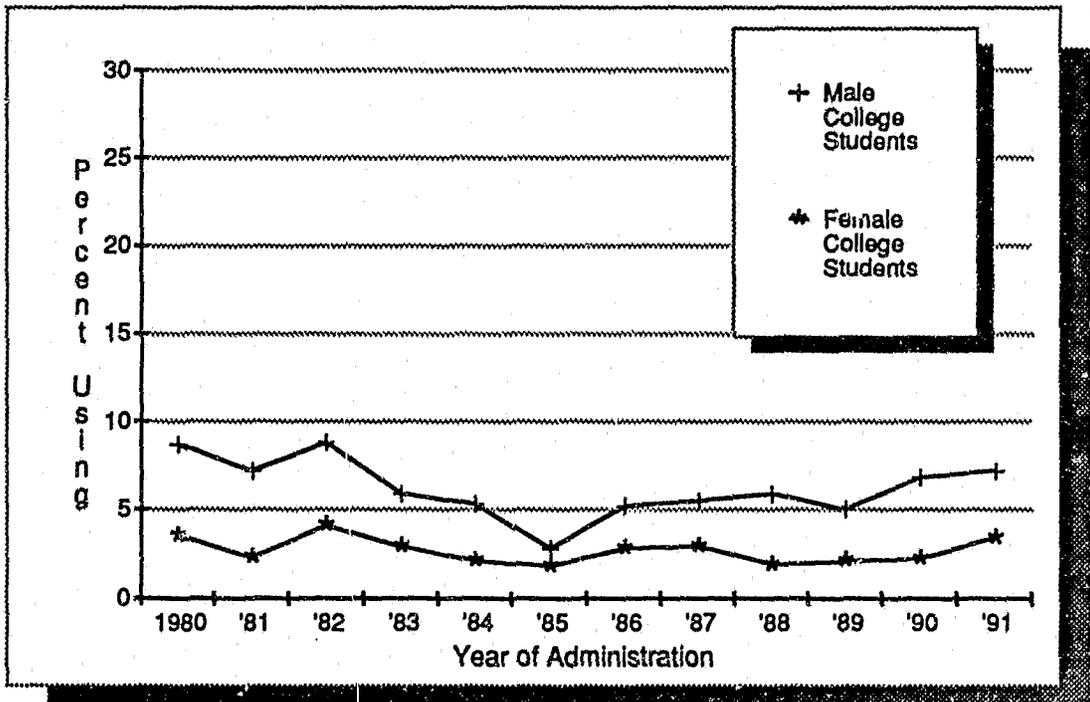
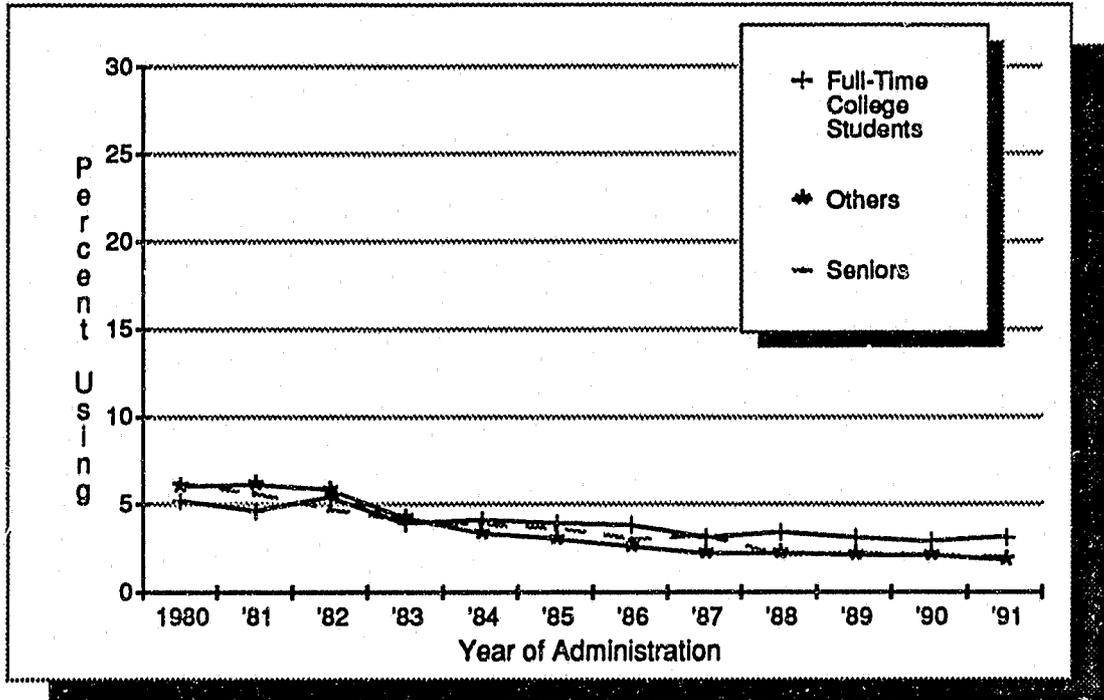


FIGURE 71

Hallucinogens Other than LSD: Trends in Annual Prevalence Among College Students Vs. Others 1-4 Years Beyond High School



Hallucinogens Other than LSD: Trends in Annual Prevalence Among Male and Female College Students

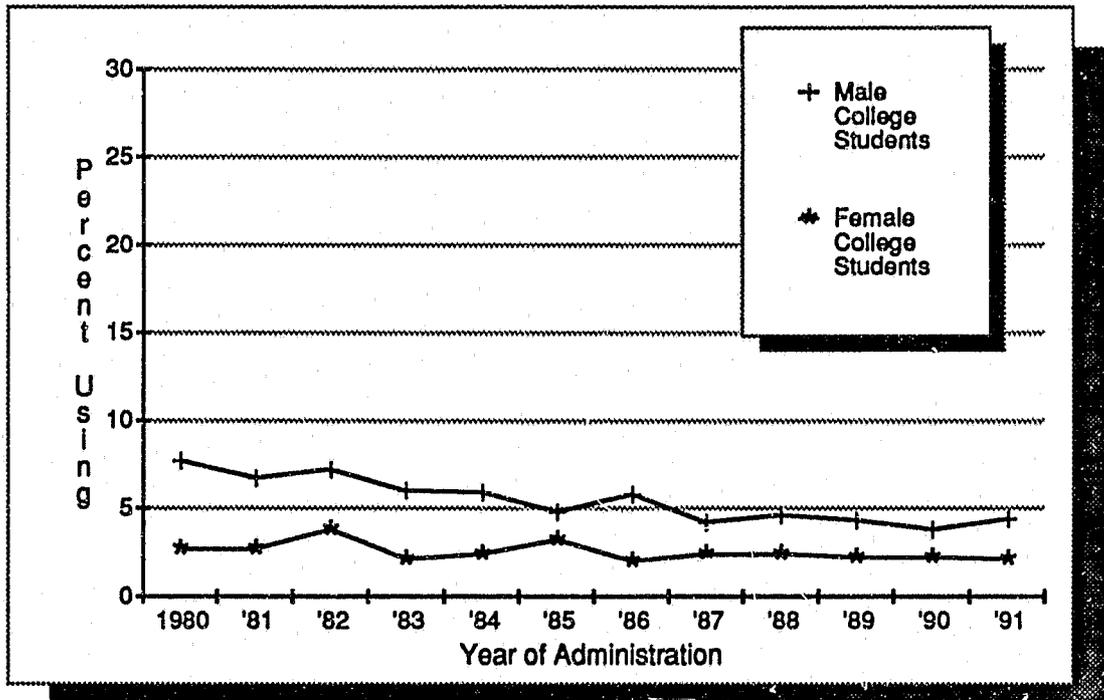
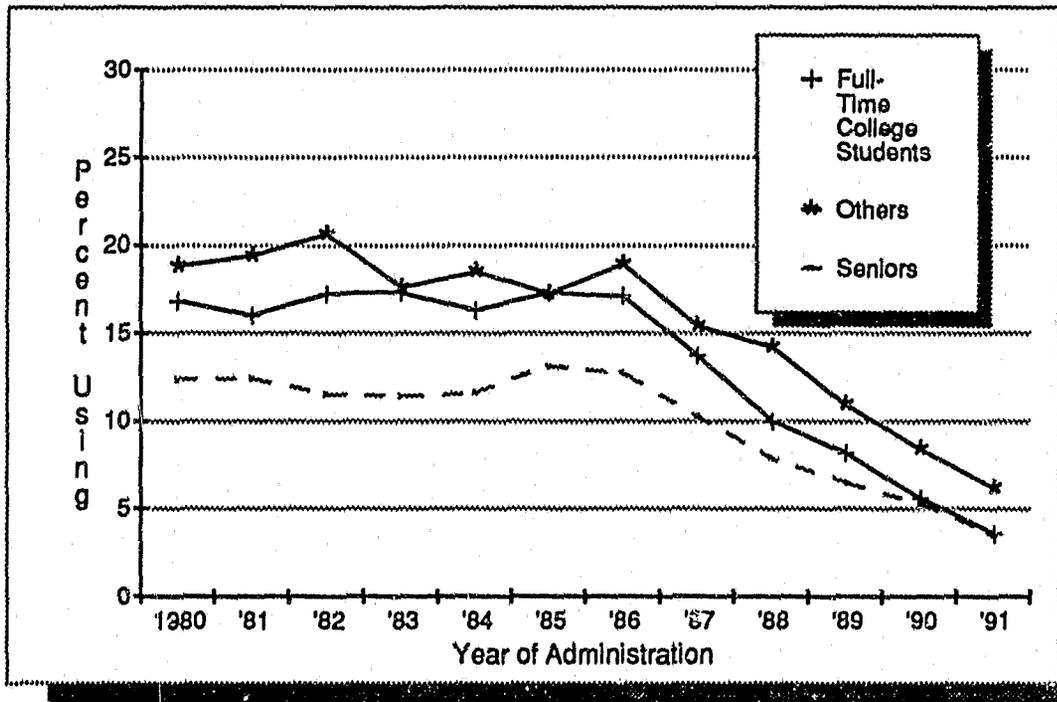


FIGURE 72

Cocaine: Trends in Annual Prevalence Among College Students Vs. Others
1-4 Years Beyond High School



Cocaine: Trends in Annual Prevalence Among
Male and Female College Students

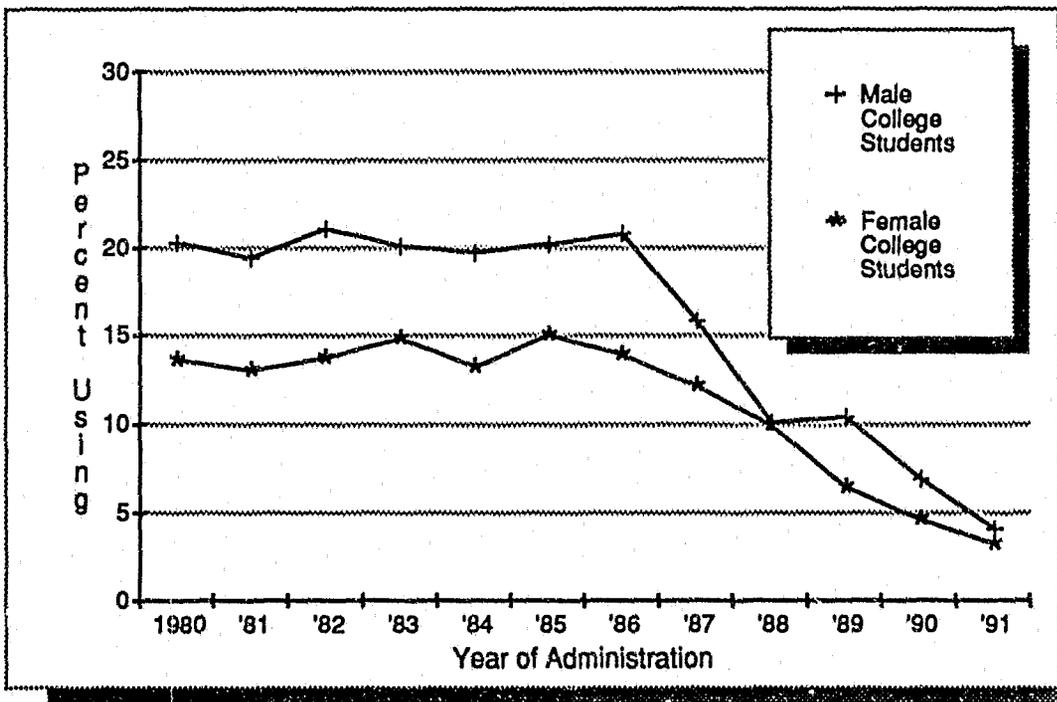
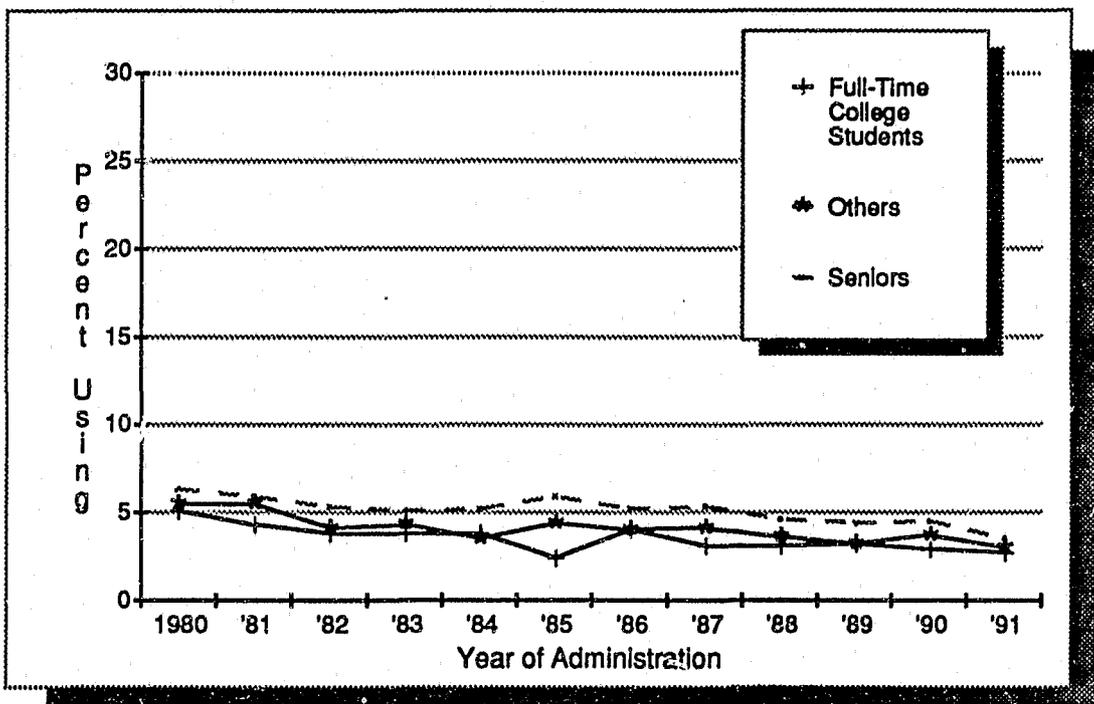


FIGURE 73

**Other Opiates: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School**



**Other Opiates: Trends in Annual Prevalence
Among Male and Female College Students**

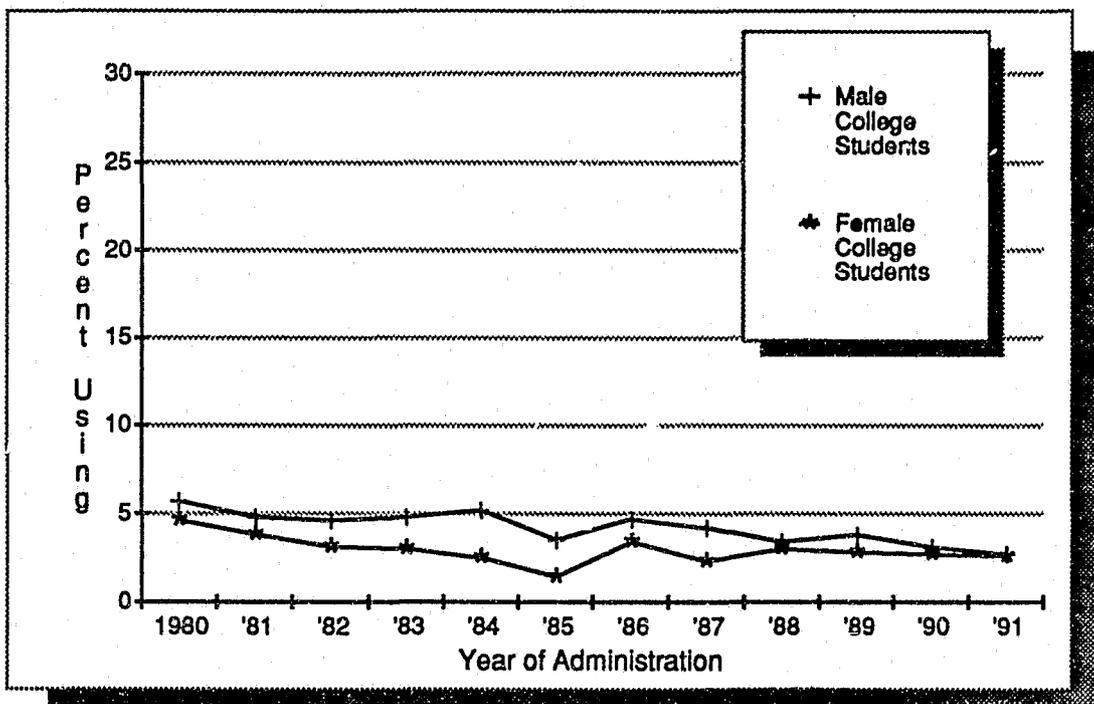
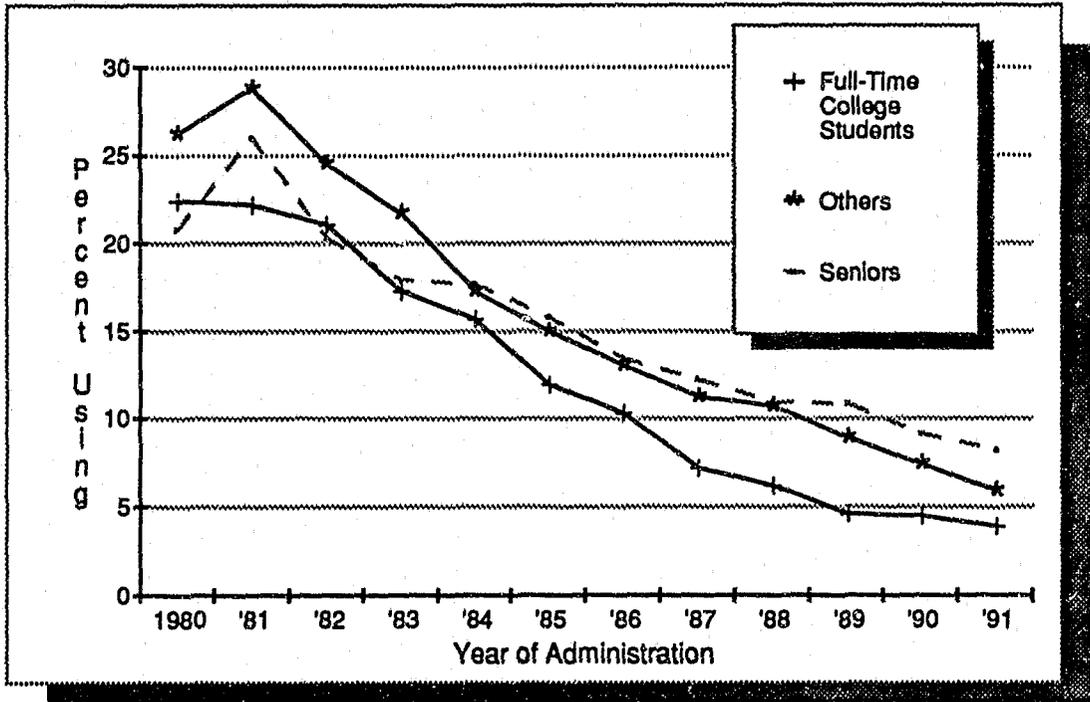


FIGURE 74

**Stimulants: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School**



**Stimulants: Trends in Annual Prevalence
Among Male and Female College Students**

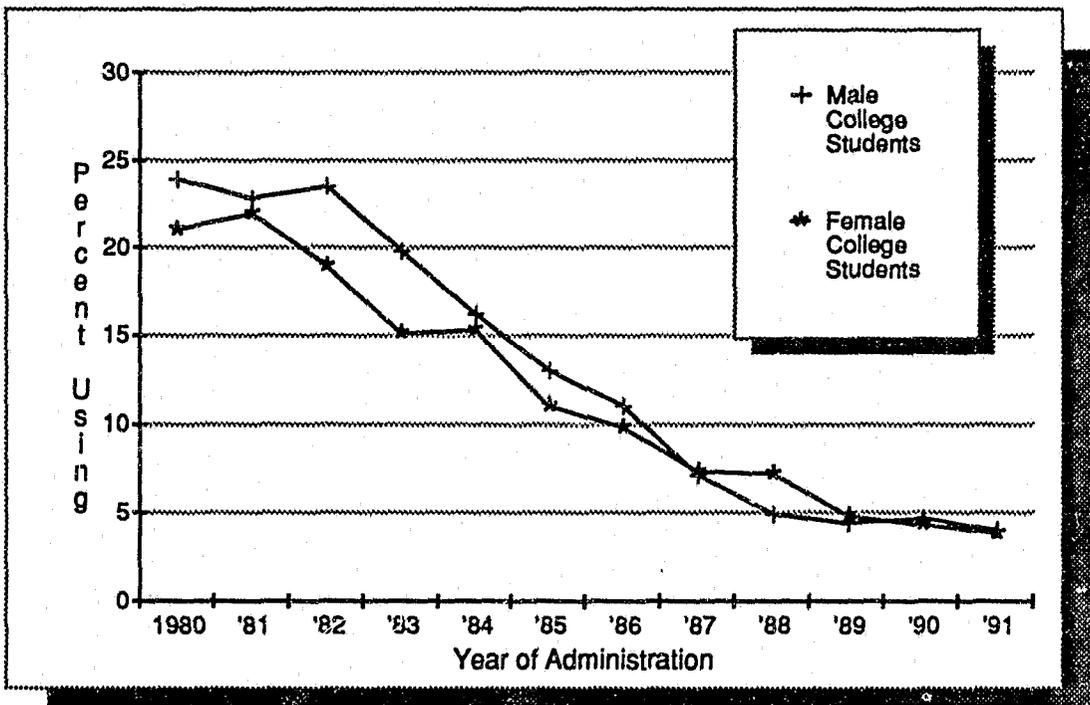
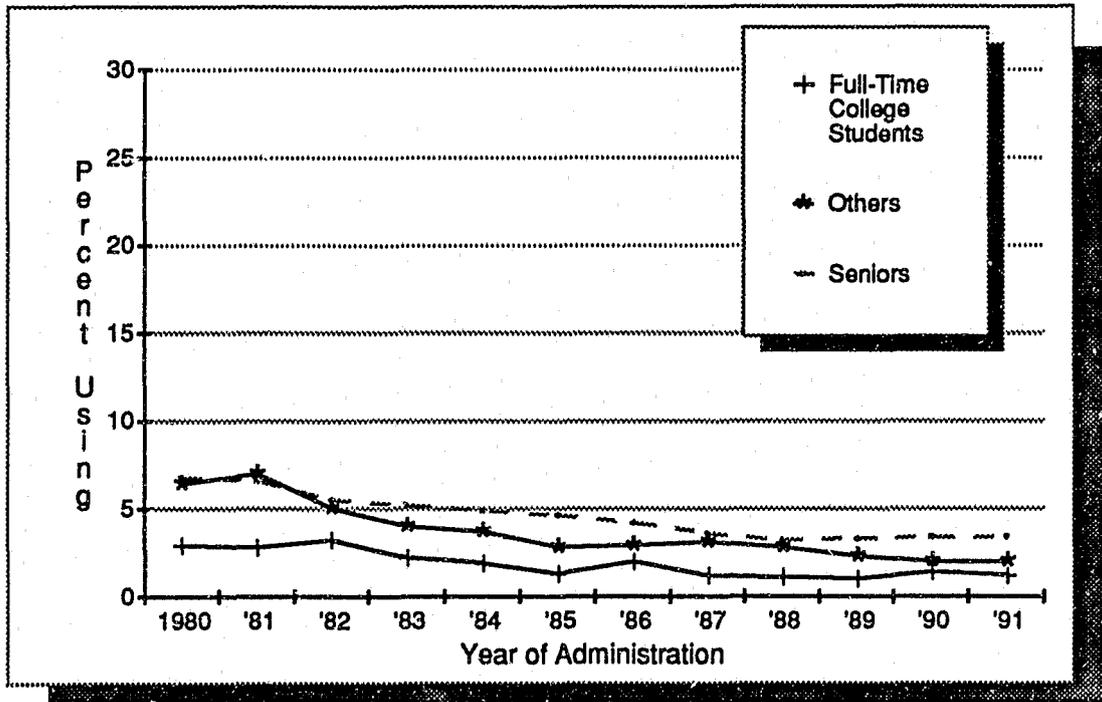


FIGURE 75

Barbiturates: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Barbiturates: Trends in Annual Prevalence
Among Male and Female College Students

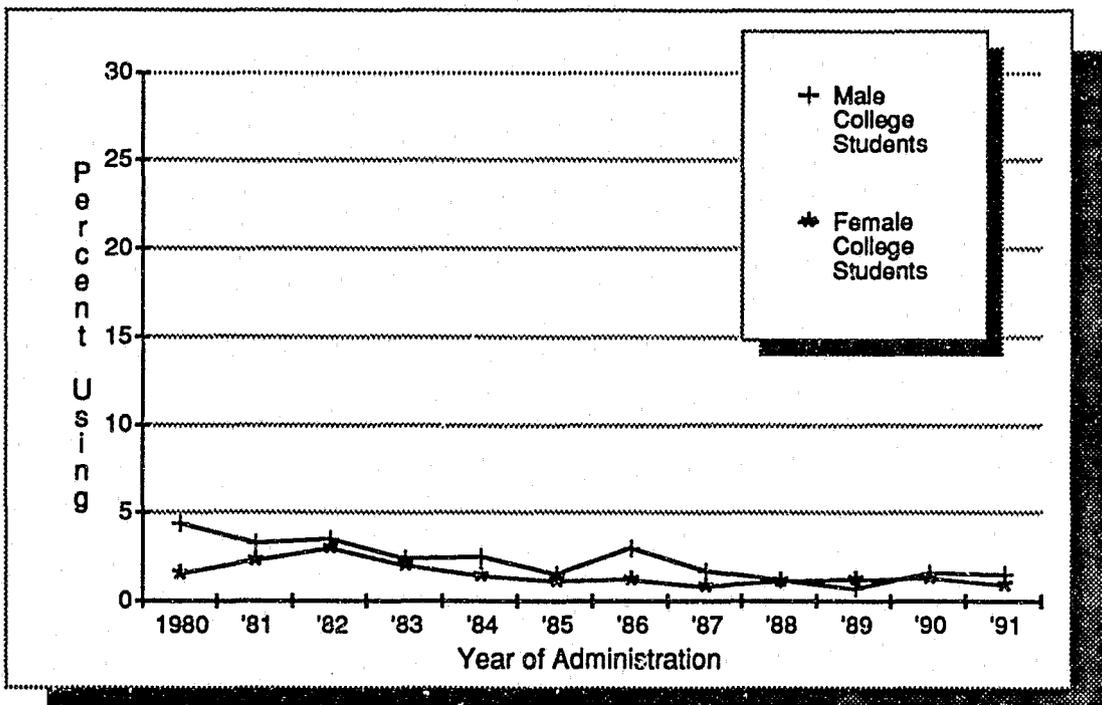
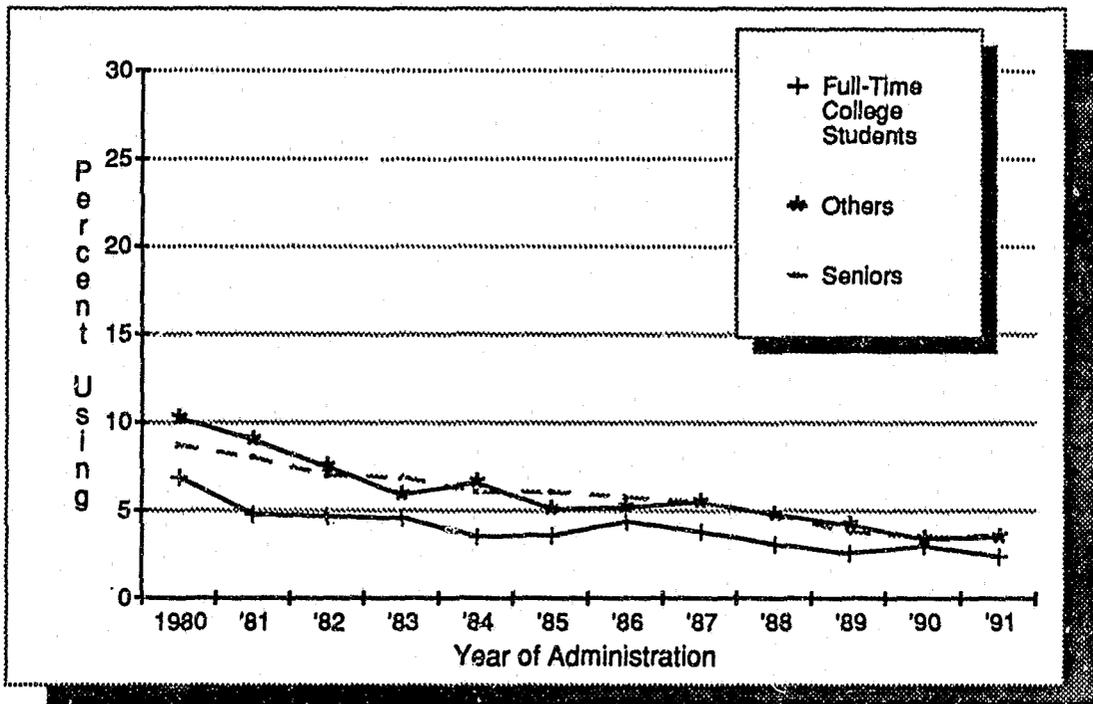


FIGURE 76

**Tranquilizers: Trends in Annual Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School**



**Tranquilizers: Trends in Annual Prevalence
Among Male and Female College Students**

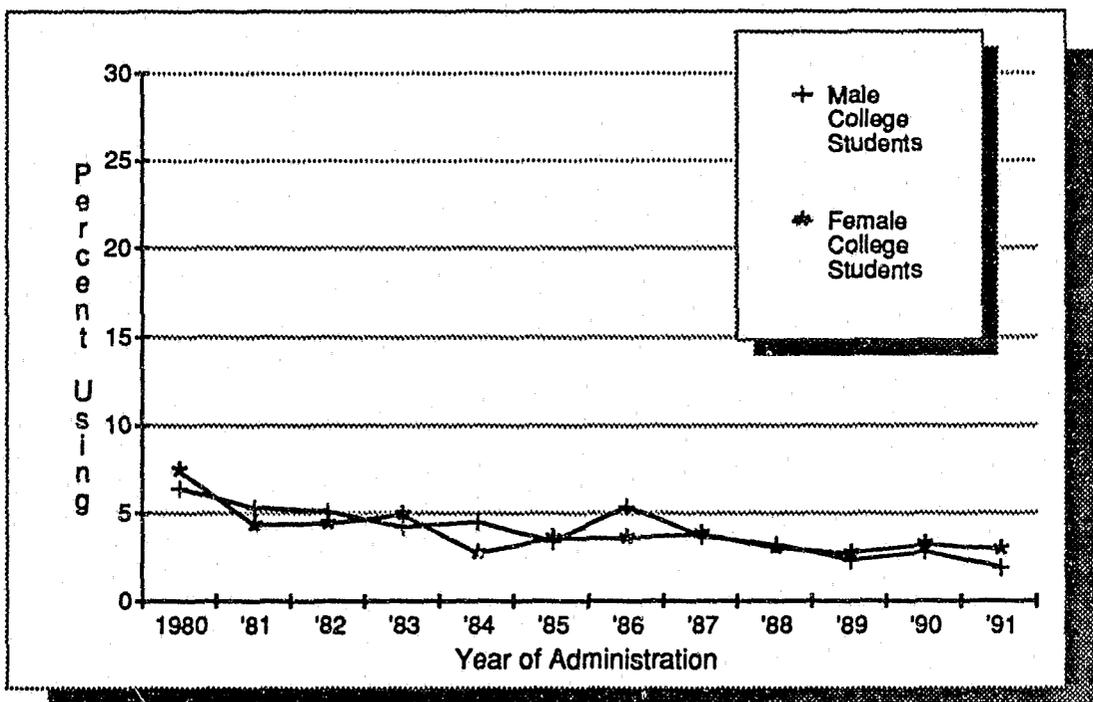
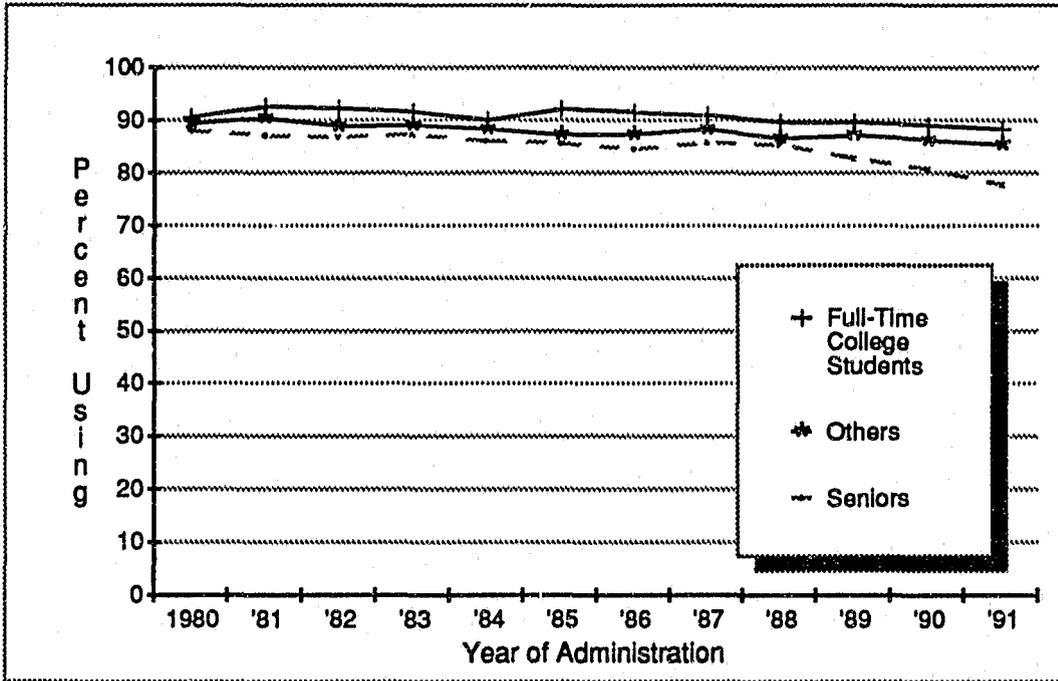


FIGURE 77a

Alcohol: Trends in Annual Prevalence Among College Students Vs. Others
1-4 Years Beyond High School



Alcohol: Trends in Annual Prevalence Among
Male and Female College Students

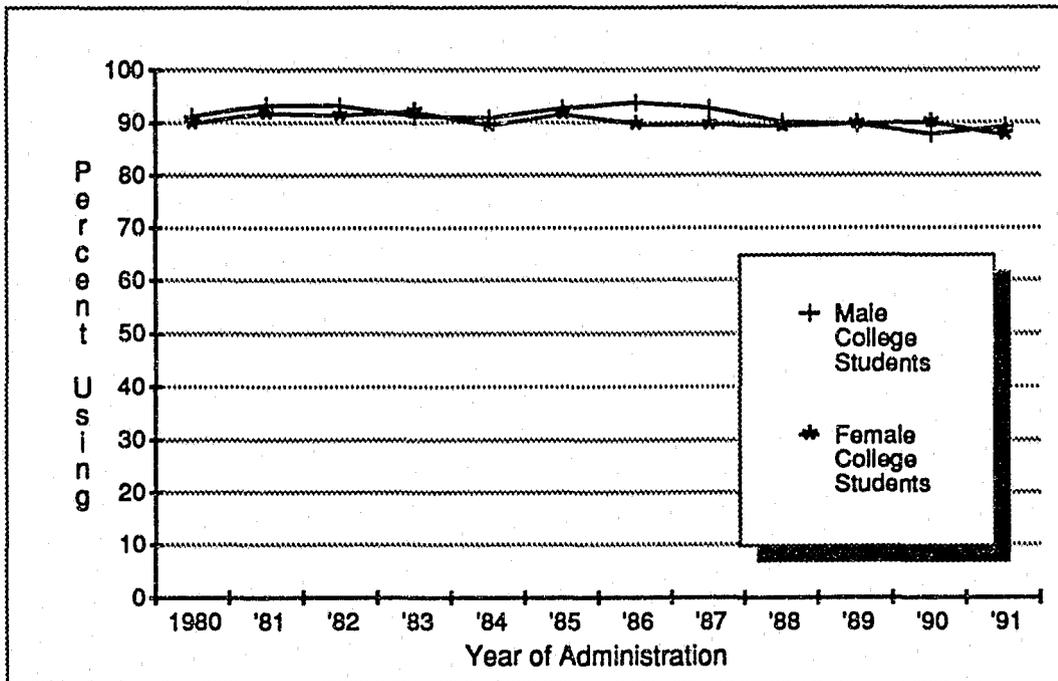
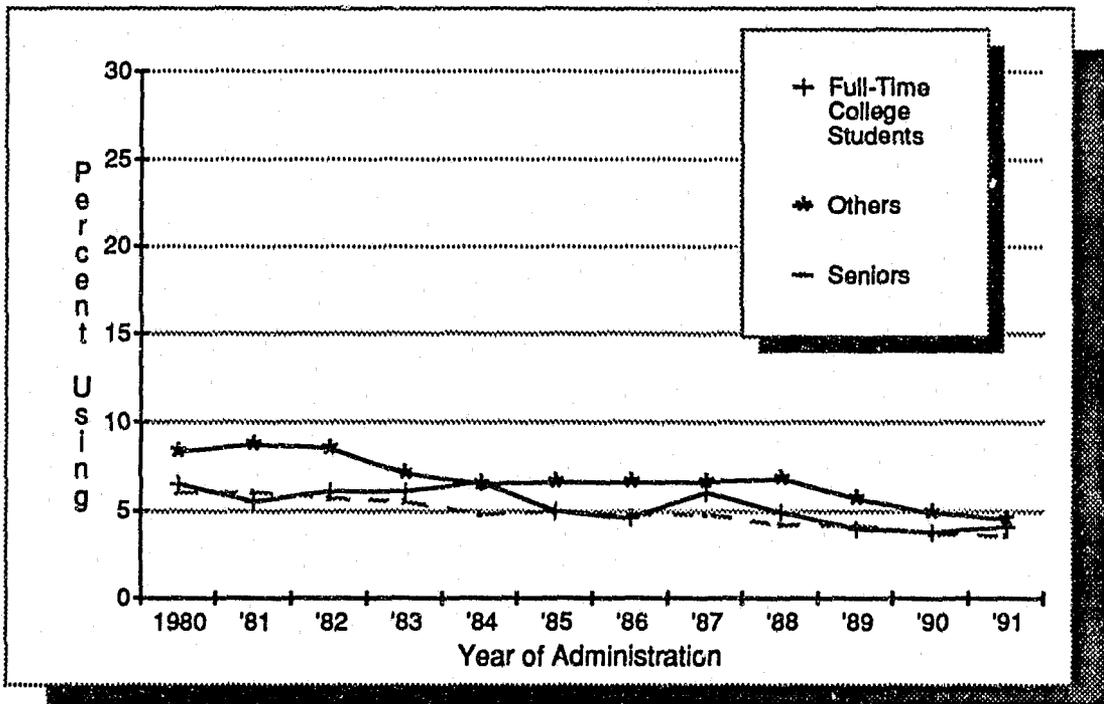


FIGURE 77b

**Alcohol: Trends in Thirty-Day Prevalence of Daily Use Among College Students Vs. Others
1-4 Years Beyond High School**



Alcohol: Trends in Thirty-Day Prevalence of Daily Use Among Male and Female College Students

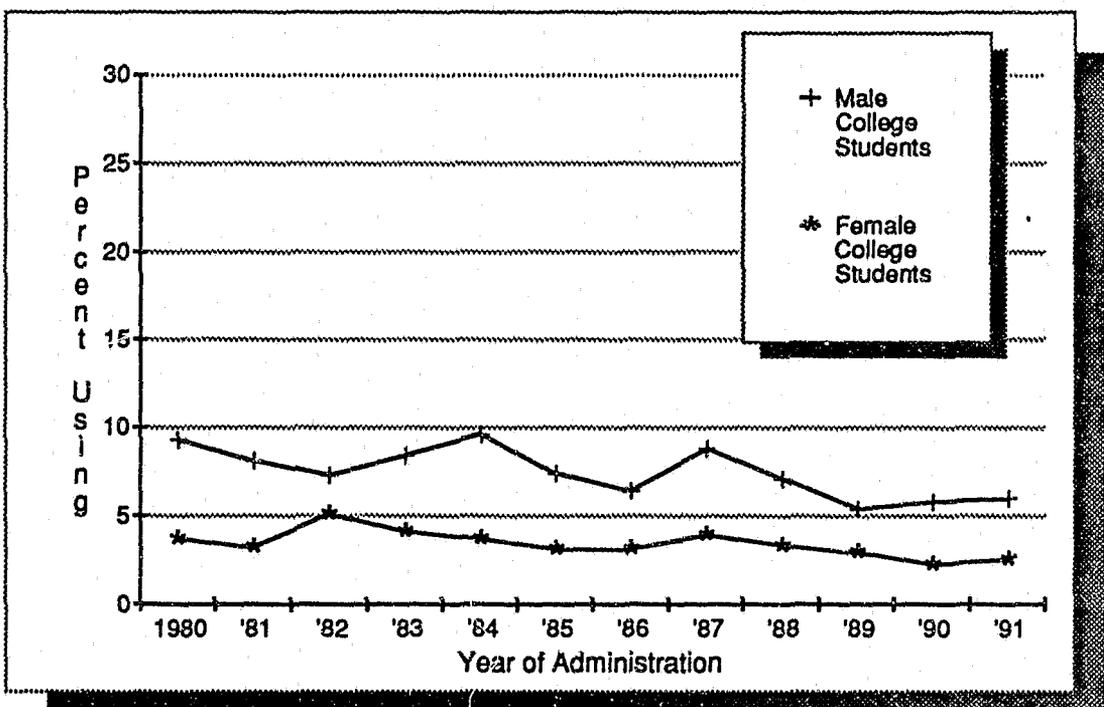
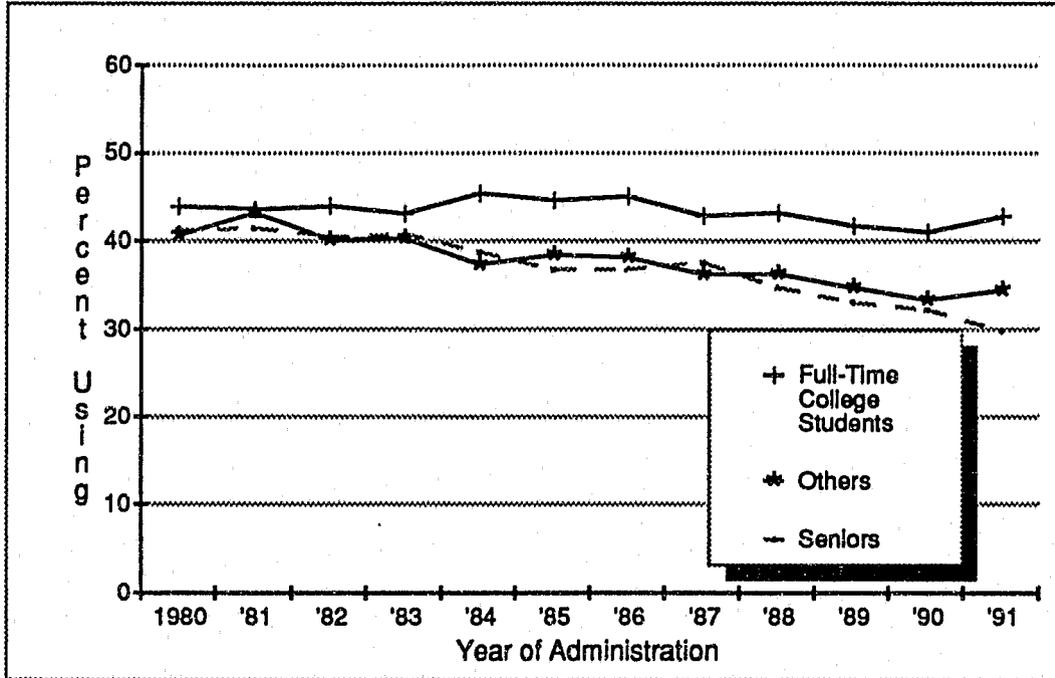


FIGURE 77c

**Alcohol: Trends in Two Week Prevalence of 5 or More Drinks in a Row Among College Students Vs. Others
1-4 Years Beyond High School**



Alcohol: Trends in Two Week Prevalence of 5 or More Drinks in a Row Among Male and Female College Students

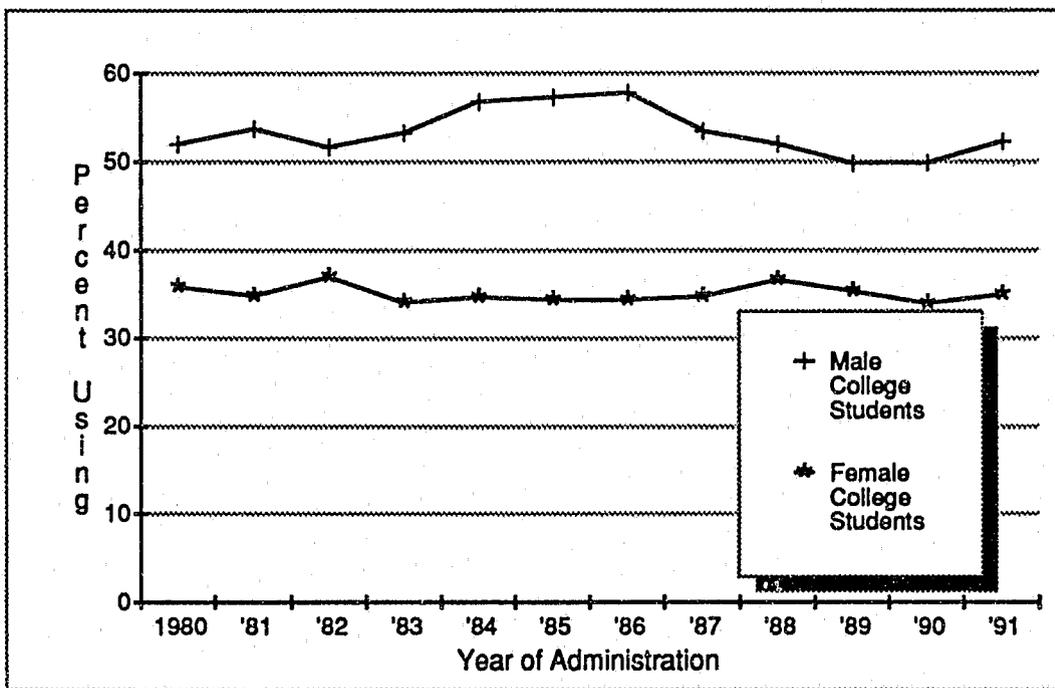
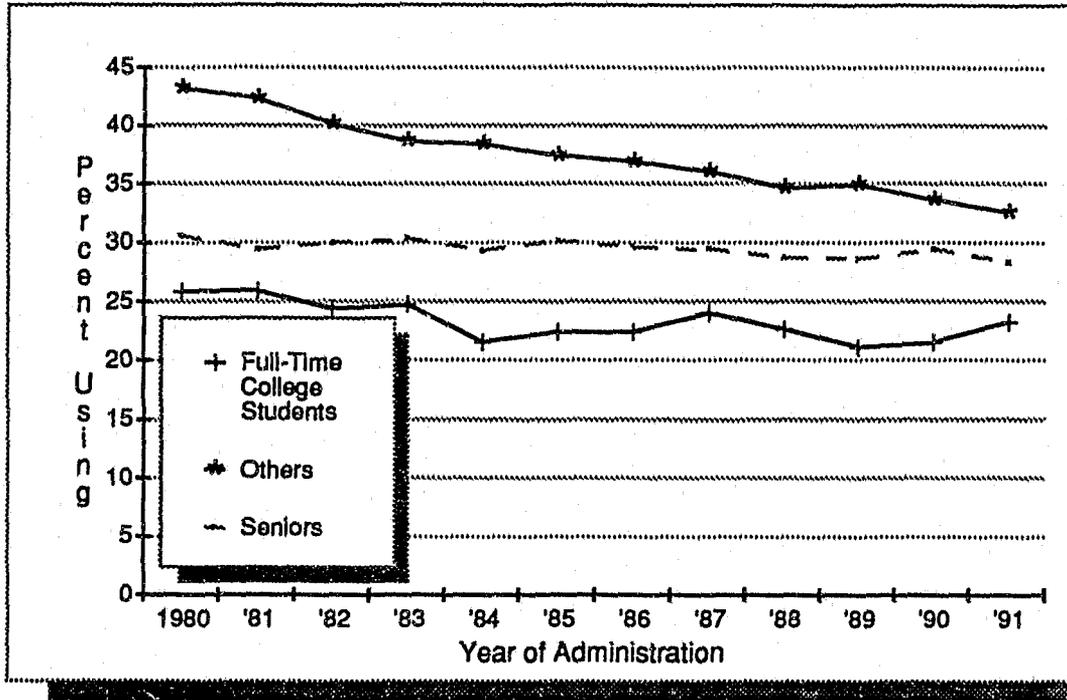


FIGURE 78a

Cigarettes: Trends in Thirty-Day Prevalence
Among College Students Vs. Others
1-4 Years Beyond High School



Cigarettes: Trends in Thirty-Day Prevalence
Among Male and Female College Students

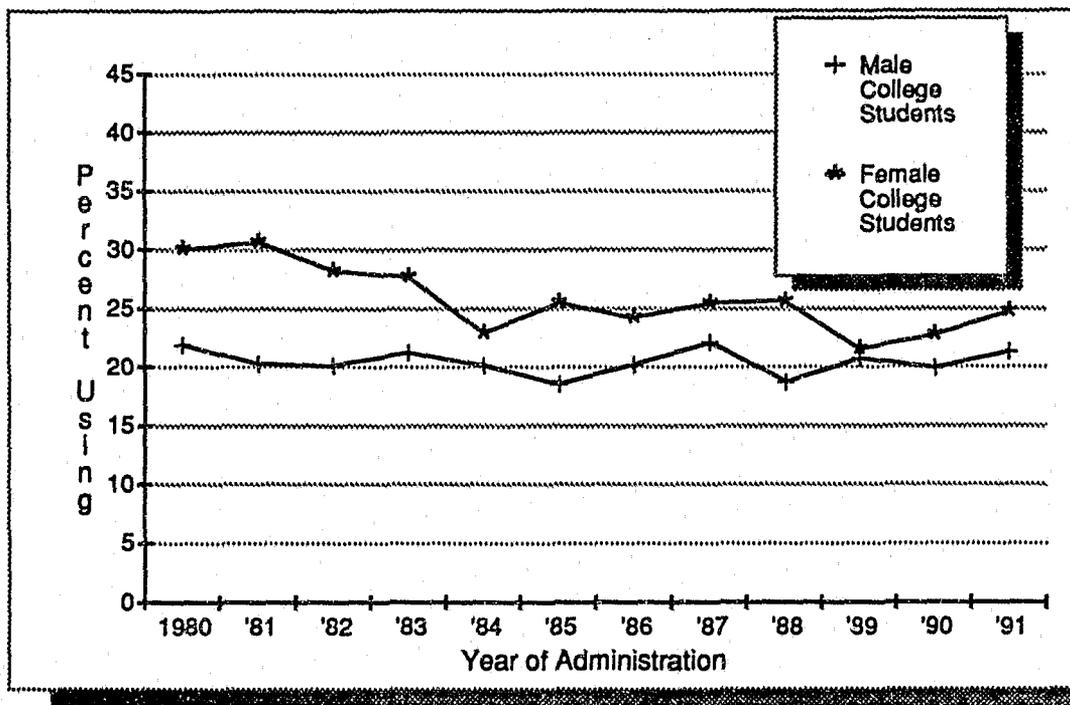
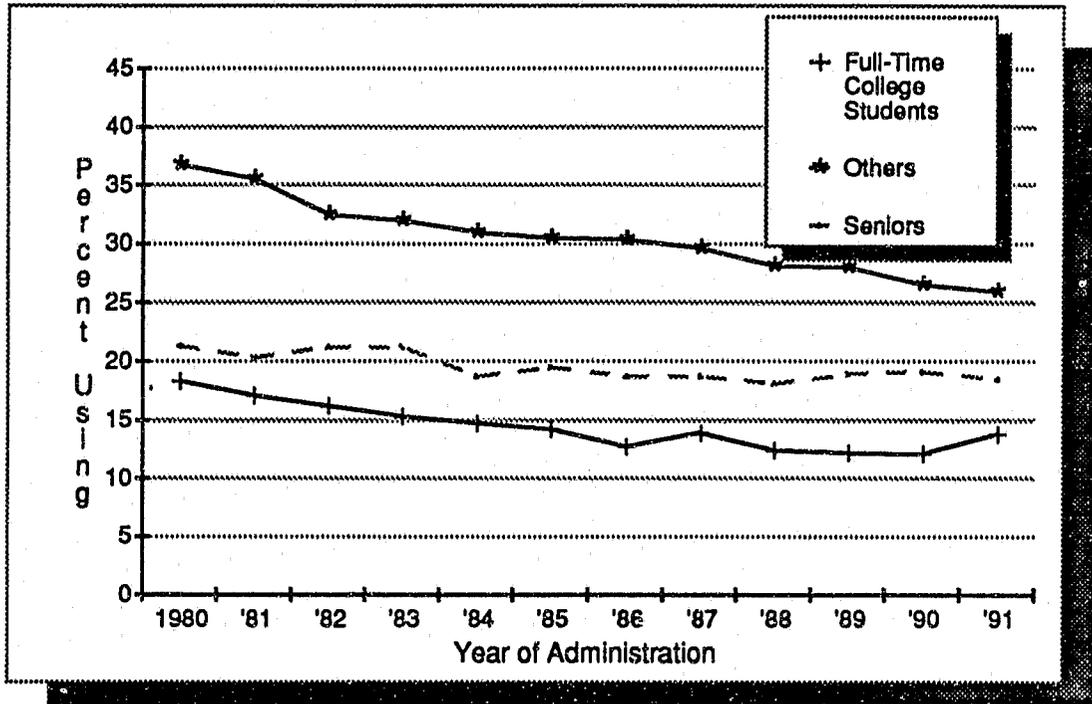


FIGURE 78b

**Cigarettes: Trends in Thirty-Day Prevalence of Daily Use Among College Students Vs. Others
1-4 Years Beyond High School**



Cigarettes: Trends in Thirty-Day Prevalence of Daily Use Among Male and Female College Students

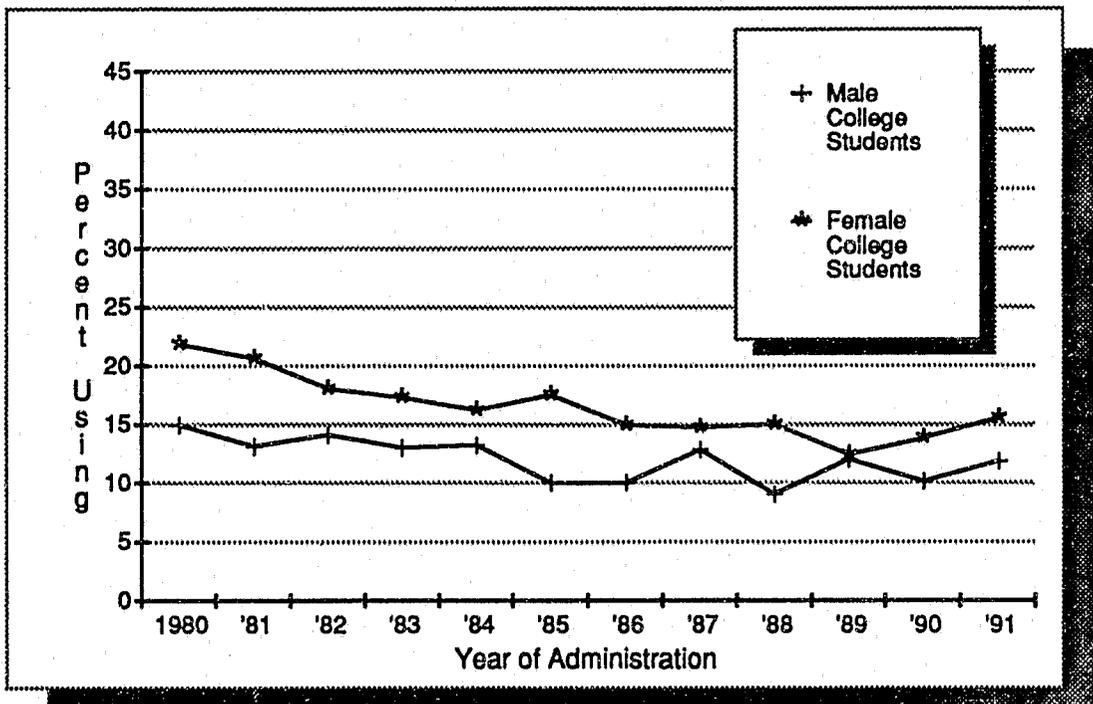
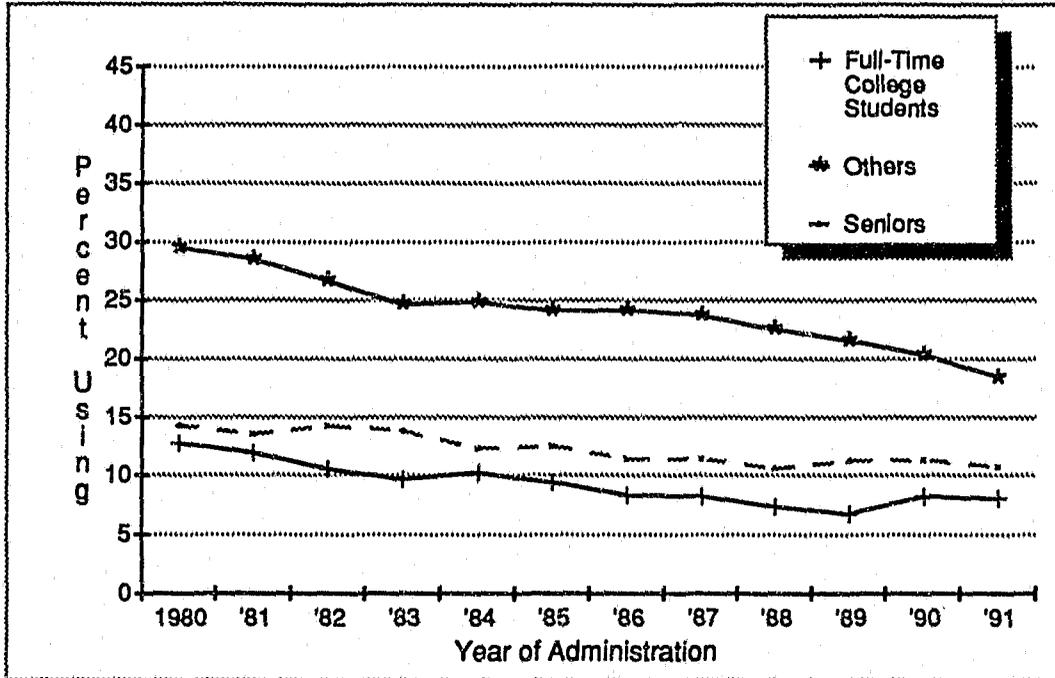
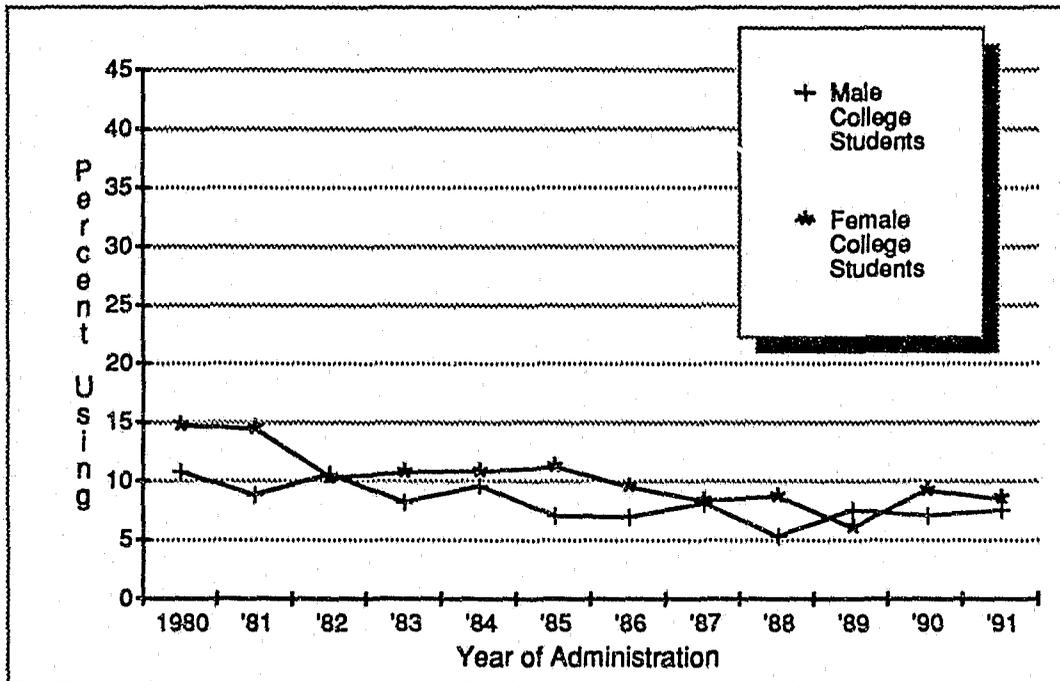


FIGURE 78c

**Cigarettes: Trends in Thirty-Day Use of Half-Pack a Day or More Among College Students Vs. Others
1-4 Years Beyond High School**



Cigarettes: Trends in Thirty-Day Use of Half-Pack a Day or More Among Male and Female College Students



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