

# The Recanting of Earlier Reported Drug Use by Young Adults

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## ABSTRACT

One approach to determining the validity of self-reported drug use measures is to examine the extent of logically inconsistent responses over time. Because lifetime use logically should never decline, the rate of subsequent recanting of earlier reported lifetime use provides relevant evidence on validity. In this chapter, recanting rates are examined in nationally representative samples of high school seniors (18-year-olds) surveyed in the Monitoring the Future study as they are followed up on seven occasions through age 32. For the illegal drugs examined (marijuana, cocaine, and lysergic acid diethylamide (LSD)), recanting rates prove to be quite modest, but for the psychotherapeutic drugs, they were more substantial, possibly because of their greater definitional ambiguity. In general, there were no large individual differences in recanting rates as a function of sex, household composition, community size, or education level. Consistent with previous work, minorities (particularly African Americans) had somewhat higher rates of recanting on the illegal drugs. So did respondents in certain occupations, namely, the military and police/firefighting. In general, however, the evidence is quite good for validity of self-reported (by mail) lifetime use of the illegal drugs in young adulthood.

## INTRODUCTION

This chapter addresses research issues of concern to those collecting or interpreting self-report data on illicit drug use: the extent to which young adults recant earlier reported drug use in subsequent followup surveys, the extent to which such recanting varies by type of drug and type of respondent, and the extent to which the findings have implications for interpreting prevalence rates for cross-sectional studies of adults.

Even when recanting—the denial of earlier reported use—occurs, the issue of interpretation remains. Recanters may knowingly or unknowingly change their answers. Perhaps it should not be assumed

that the earlier answers are the more valid; later ones may reflect improved respondent understanding and actually may be the more accurate. For example, uncertainty in accurately characterizing some substances that may have been taken at earlier ages could prove to be a factor in recanting.

## BACKGROUND

Like a great many studies in the drug field, the Monitoring the Future study relies on self-report measures of drug use to make prevalence and trend estimates on large segments of the population (Johnston et al. 1991, 1995). A strong case has been made for the reliability and cross-time stability of a number of the measures (O'Malley et al. 1983), and for their validity in the context of cross-sectional school-based surveys (Johnston et al. 1991, 1995; Johnston and O'Malley 1985; Wallace and Bachman 1993). On the other hand, some intriguing findings showing some degree of recanting at later points in time have been reported, based on panel studies of respondents initially questioned in high school (Johnston et al. 1995). So far, these data have been presented only in a cross-sectional format based on several contiguous cohorts who received questionnaires at the same point in time. Because important secular trends in drug use have been occurring as these various class cohorts have passed through high school, it is important to distinguish whether age differences in recanting rates (older cohorts have higher rates) are a function of cohort or of aging. If, indeed, there is an age effect in recanting rates, the question remains of how seriously it biases the prevalence estimates for different age groups, and of whether national cross-sectional surveys of drug use in the general population, such as the National Household Survey on Drug Abuse (Substance Abuse and Mental Health Services Administration (SAMHSA) 1995) might have serious underreporting biases.

The availability of panel data initially collected in adolescence provides an opportunity to address these questions. Some questions will not be answered definitively, because the panel data available were not gathered using an experimental design that would be needed to distinguish among some possible explanations. For example, recanting demonstrated in the Monitoring the Future followup panels might be explained by either a change in situation or a change in age. All respondents shift from an in-school self-administered survey given in a classroom to a self-administered survey sent by mail that usually is completed in the home. At the same time, respondents are

undergoing important developmental transitions as they mature, including the attainment of higher education, full-time employment, marriage, and parenthood.

Only a few other researchers, using interview methods, have investigated the recanting phenomenon in longitudinal studies of illicit drug use. Fendrich and Vaughn (1994) investigated recanting rates between the 1984 and 1988 waves of the National Longitudinal Survey of Youth. The most consistent demographic correlates of recanting of marijuana and cocaine use were race/ethnicity and educational status. Minority respondents (particularly African Americans) and dropouts were more likely to recant, even after controlling for other demographic variables. Earlier, Mensch and Kandel (1988) also reported that minority respondents in the National Longitudinal Survey of Youth were more likely than nonminorities to recant their previous reports of lifetime marijuana use (based on the 1980 and 1984 waves of data), even after controlling for educational status.

## METHODS

### Samples

All of the data presented in this chapter derive from the Monitoring the Future study, which included among its various design features large, nationally representative cross-sectional surveys of high school seniors each year beginning in 1975 (N = 16,000 to 18,000 annually). Representative subsamples of 2,400 target respondents have been selected from each graduating class cohort to comprise followup panels. These panels each receive seven followup surveys at 2-year intervals, with a random split-half sample receiving questionnaires in odd-numbered years and the other split-half receiving questionnaires in even-numbered years. For the current analyses, the split-halves were combined.

The analyses presenting cross-sectional statistics for respondents in the age range 18 to 32 in 1993 are based on approximately 16,300 respondent cases at age 18 (the seniors surveyed in school that year) and 8,900 weighted cases in the age range 19 to 32, all of whom were surveyed by mail in 1993. In the panel analyses of the several adjacent cohorts for whom data through age 32 are available (i.e., the classes of 1977 to 1979), the findings are based on approximately 5,300 weighted cases, which falls to 4,500 in the first followup

(reflecting an 85 percent retention rate at ages 19 to 20) and then gradually to 3,500 by the seventh followup (a 66 percent retention rate at ages 31 to 32).

### Field Procedures

The data from all senior classes were gathered using a 40-minute self-administered questionnaire distributed to classrooms of students by University of Michigan Survey Research Center interviewers. Identifying information for followup was gathered on tear-off cards that could not be connected with the respondent's questionnaires except through the use of randomly matched identifying numbers; these numbers in turn can be connected only through the use of a special computer file maintained under security at the University of Michigan. Similar random-number identifiers were used on the followup questionnaires, which contained no other individual identification when they were mailed back to the Survey Research Center.

The followup questionnaires were sent by certified mail to all panel respondents except those previously declining to be in the panel, accompanied by a check for \$5 payable to the respondent (\$10, beginning with the class of 1992). Respondents also received a self-addressed, postage-paid return envelope and a description of the confidentiality protection procedures. Roughly 6 to 9 months after each followup survey, respondents received a newsletter from the study, which also thanked them for their continued participation.

### Measures

The variables used in the analyses presented here were measured on all respondents. That is, they were common to all questionnaire forms, even though five or six different questionnaire forms are used with these age groups to permit the inclusion of a great many more variables in the study than could be contained in a single form. This chapter discusses the prevalence of use of five different drugs: marijuana, cocaine, LSD, tranquilizers, and barbiturates. A common measurement format was used for all of these substances by asking respondents: "On how many occasions (if any) have you used [drug]..." followed by three time periods: "...in your lifetime," "...in the past 12 months," and "...in the past 30 days." The respondent was given a 7-point frequency scale to answer separately for each of the three time periods. Nearly all analyses reported here focus on

prevalence, rather than frequency, rates—that is, whether the respondent used the drug at all in each of the time periods.

It is only with respect to lifetime use that it is possible to determine that a respondent has recanted; accordingly, most of the discussion here deals with lifetime prevalence. In a way this is unfortunate, because the annual and 30-day prevalence rates are probably more important for policy purposes. However, because annual and 30-day prevalences actually can decline over time, recanting cannot be determined for these rates (using the available measures), whereas lifetime prevalence logically cannot decline. (It would be possible, of course, to utilize retrospective reports in the followup surveys of use in earlier periods—for example, during senior year of high school—to allow for some estimate of recanting, but the study does not include such questions.)

## FINDINGS

Results relevant to recanting rates are presented for five drugs in figures 1 through 5; within each of these figures, three graphics (A, B, C) are provided. The top panel (A) in each figure displays the lifetime and annual prevalence rates for different age groups surveyed cross-sectionally in 1993 (using the single measurement taken in 1993). Adjusted lifetime prevalence rates are also provided in this graphic; they include respondents who had twice previously reported use of the drug, but who did not in the 1993 survey (the figures are presented in volume II of the study's annual monographs).

The middle graphic (B) in each figure displays lifetime and annual prevalence rates at different ages for a panel of several adjacent class cohorts surveyed eight times between ages 18 to 32 (the graduating classes of 1977, 1978, and 1979). Panel B gives a truer measure of change as a function of age—at least for these cohorts—than does the simultaneous cross-section of different age groups. Panel B also contains an adjusted lifetime prevalence rate, again correcting for respondents who had twice previously reported use of the drug but who did not do so when surveyed at the age indicated.

The bottom graphic (C) for each drug is based on the same panel of respondents as in B; it differs only in the criterion used to show recanting

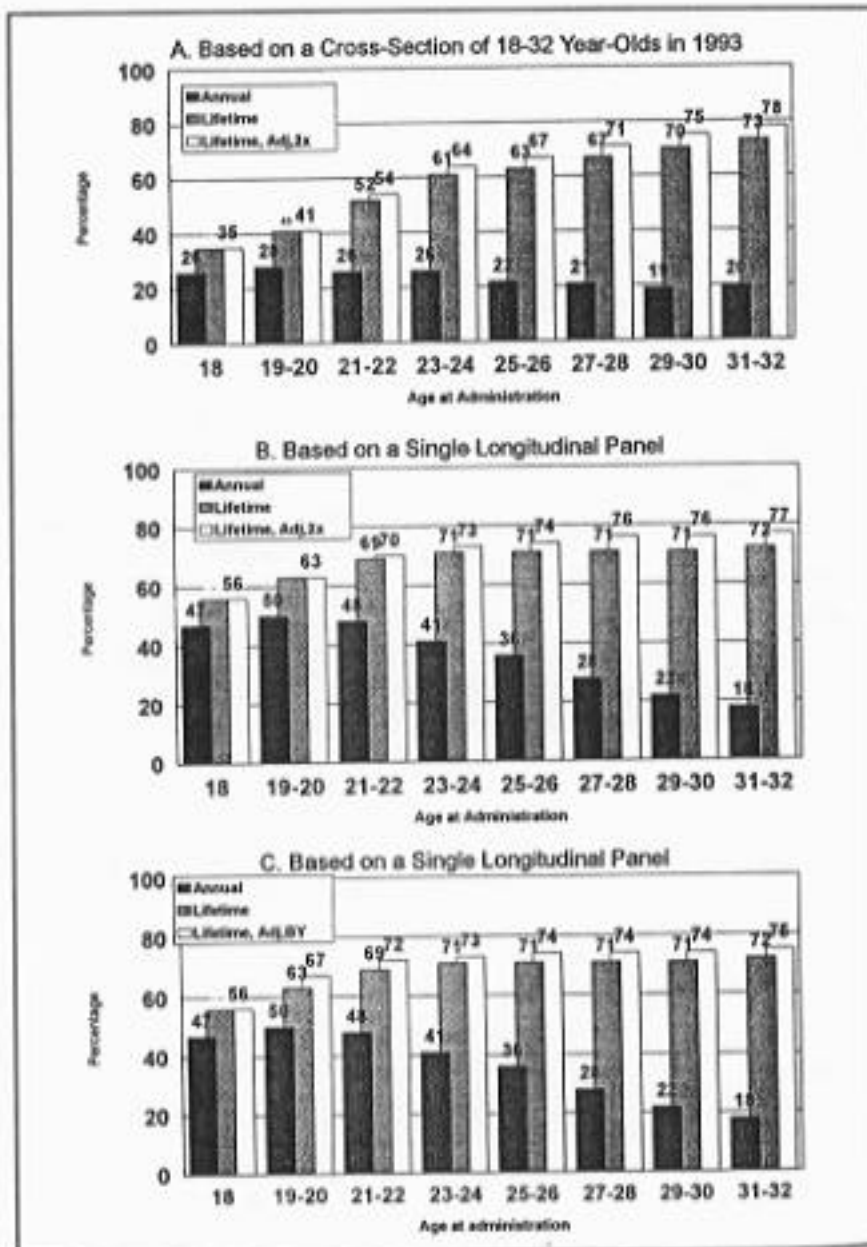
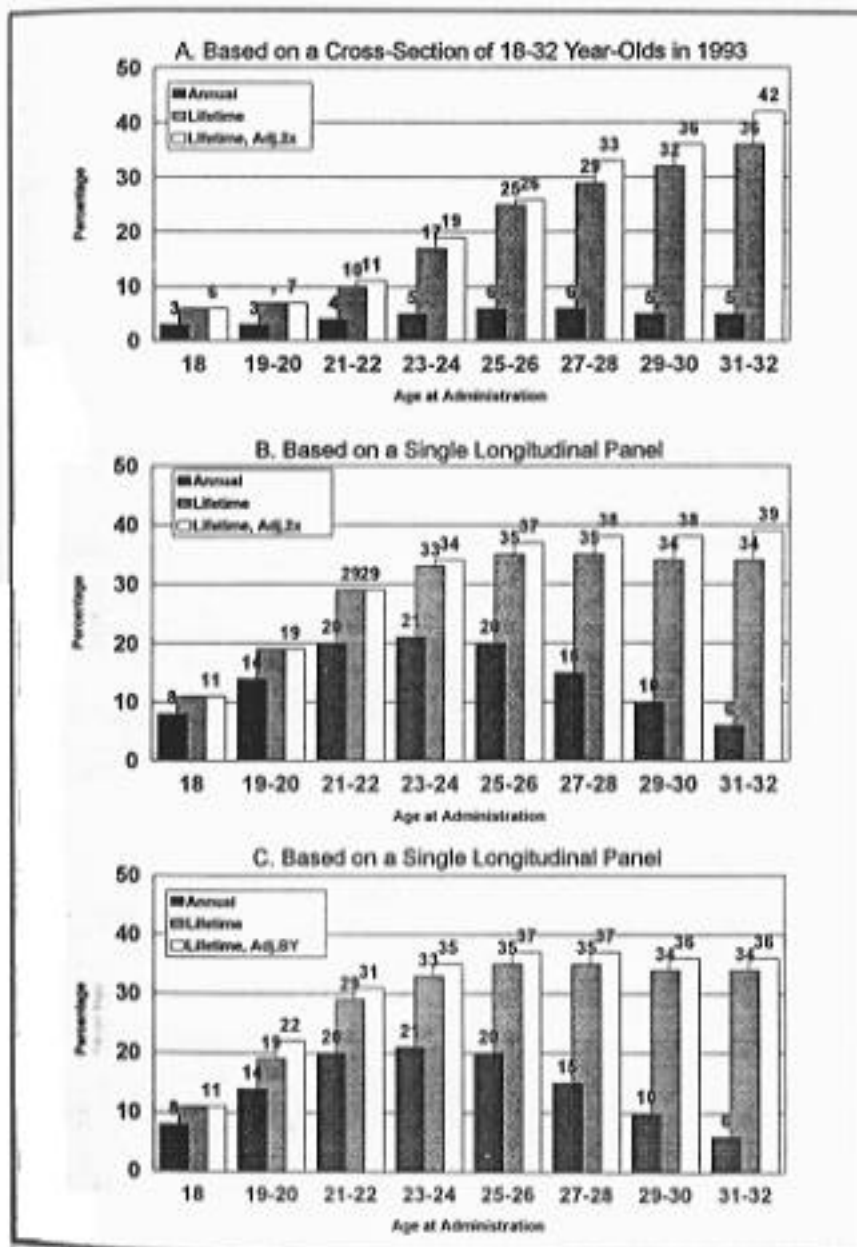


FIGURE 1. Marijuana use.

KEY: The adjusted bars in the two top graphs are based on those who had twice previously reported use; the bottom graph is based on only one previous report of use, specifically in the 12th grade.



**FIGURE 2.** Cocaine use.

**KEY:** The adjusted bars in the two top graphs are based on those who had twice previously reported use; those in the bottom graphs are based on only one previous report of use, specifically in the 12th grade.

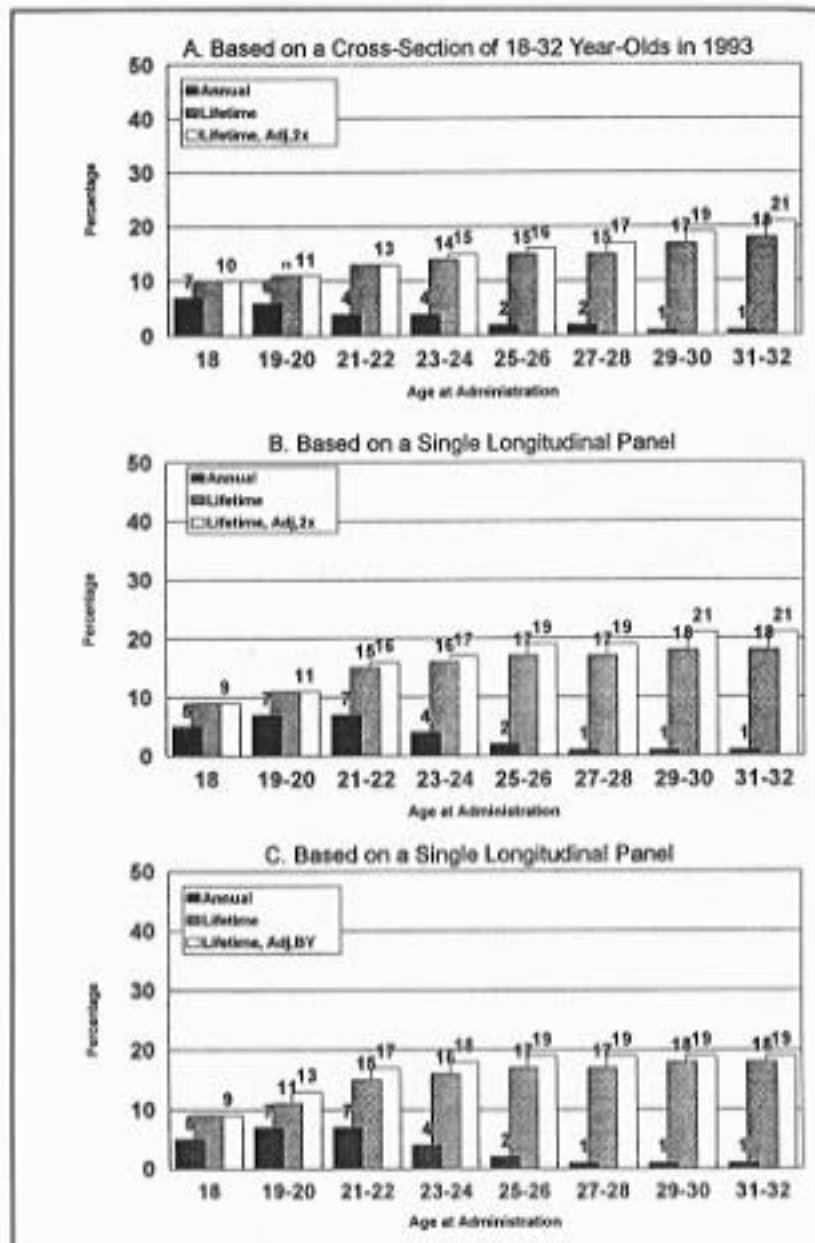
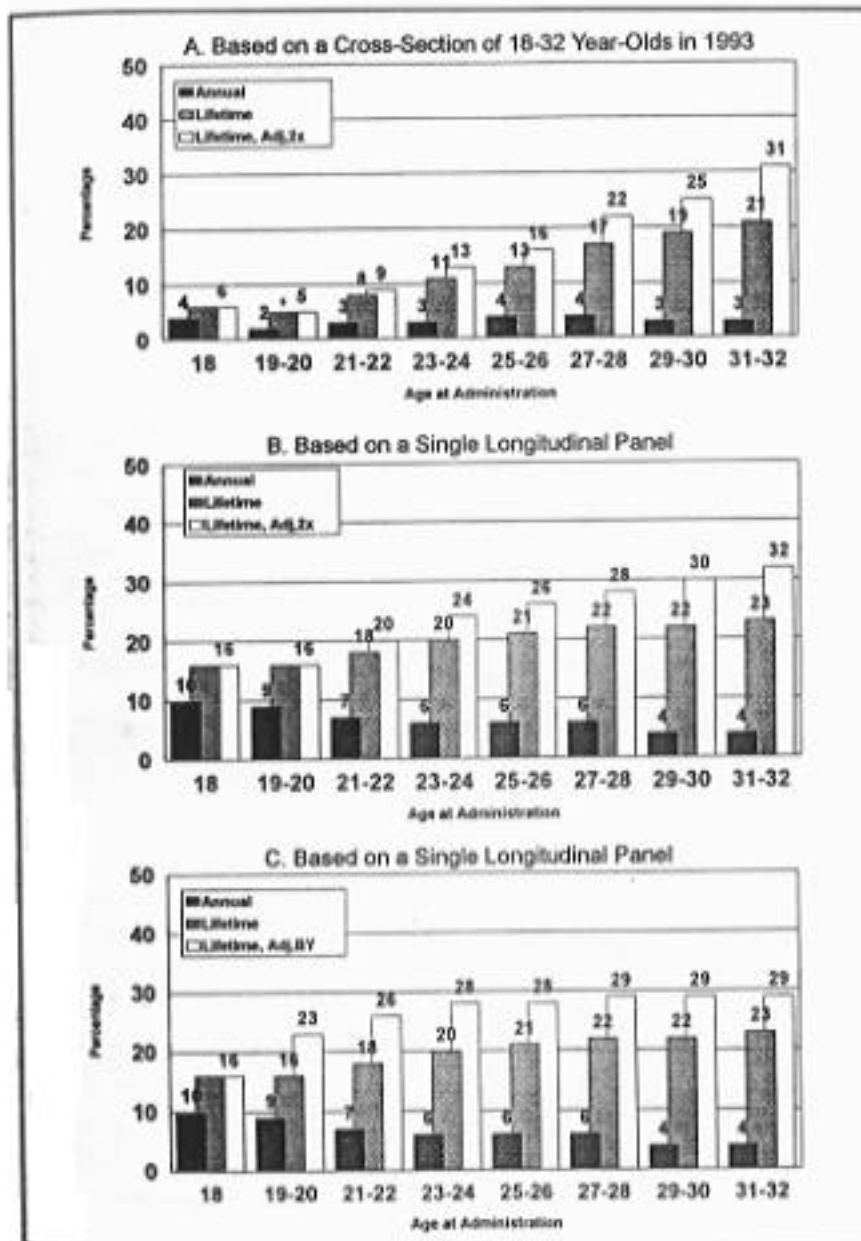


FIGURE 3. LSD use.

KEY: The adjusted bars in the two top graphs are based on those who had twice previously reported use; those in the bottom graphs are based on only one previous report of use, specifically in the 12th grade.





**FIGURE 4.** *Tranquilizer use.*

**KEY:** The adjusted bars in the two top graphs are based on those who had twice previously reported use; those in the bottom graphs are based on only one previous report of use, specifically in the 12th grade.

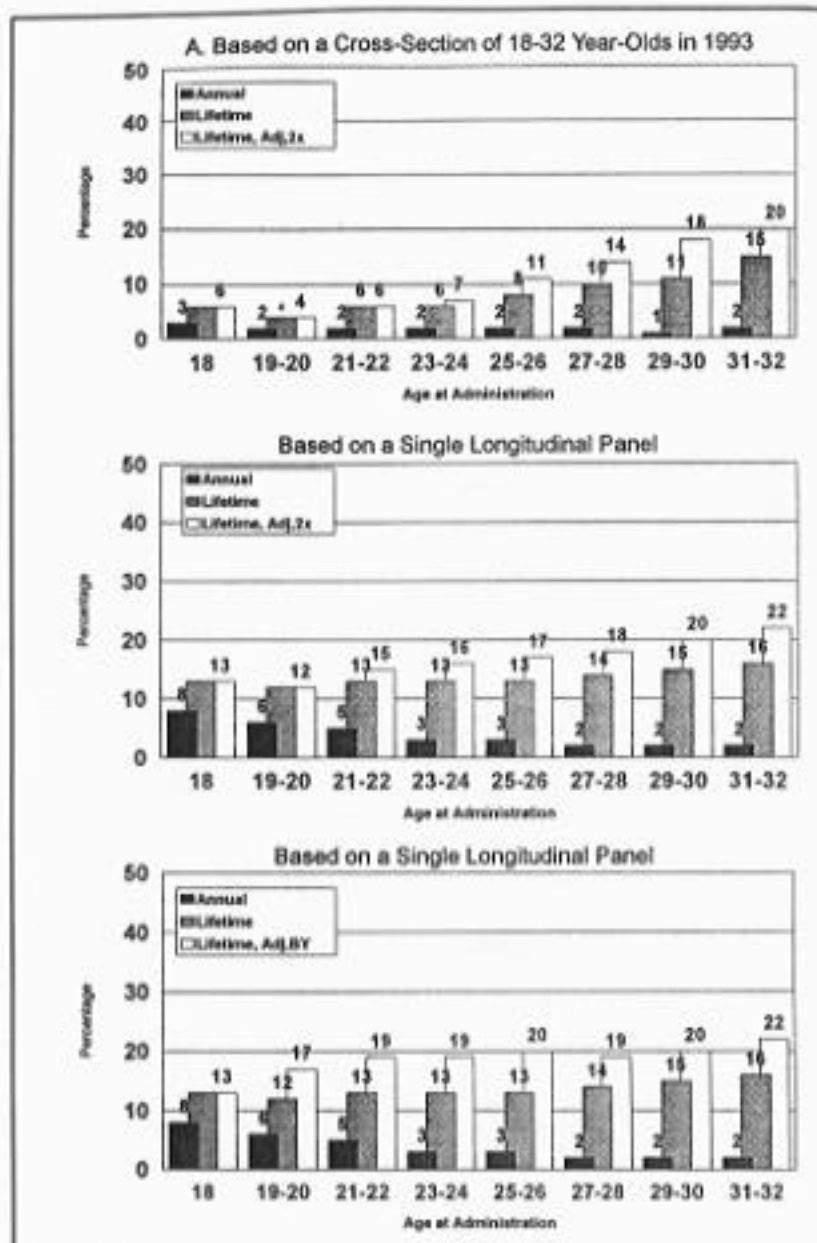


FIGURE 5. Barbiturates use.

KEY: The adjusted bars in the two top graphs are based on those who had twice previously reported use; those in the bottom graphs are based on only one previous report of use, specifically in the 12th grade.

at each followup. In this case, recanting is defined as denying use after a single previous mention, specifically in high school.

### The Illegal Drugs

Figure 1 presents these three data sets for marijuana, figure 2 for cocaine, and figure 3 for LSD. In all three cases, it may be seen that while lifetime prevalence rises with age, whether age is examined cross-sectionally or longitudinally, annual prevalence generally tends to decline with age. The increase in lifetime prevalence is particularly sharp for cocaine until respondents reach their midtwenties.

For both marijuana and cocaine, the cross-time age profile for annual prevalence is quite different when the panel data are used than when cross-sectional data are examined. The panels show a much sharper decline with age in past-year use because important downward secular trends were occurring in the use of both of these drugs in the 1980s. That is, 18-year-olds in the late 1970s (the cohorts used in the panel analyses) had much higher rates of marijuana and cocaine use than did 18-year-olds in 1993 (figures 1 and 2). Thus the declines with age in annual prevalence observed in these data exaggerate the true age effect because downward secular trends were also occurring as the panels aged and contributed to the steep decline with age. (See O'Malley et al. 1988 for an empirical estimation of the magnitude of these two effects.)

Because both the middle (B) and bottom (C) graphics are based on the same panel, their annual and unadjusted lifetime prevalence rates are identical. However, the adjusted lifetime prevalence rates differ somewhat because of different methods of adjustment: the middle graphic (B) counts a respondent at a given age as a user if that respondent twice previously reported use of the drug, even if the respondent did not report any lifetime use when surveyed at the given age. By way of contrast, the bottom graphic (C) counts a respondent as a user if that person reported use on just one previous occasion (specifically, in the senior year of high school), and shows slightly different adjusted prevalences. Corrections for recanting obtained with either correction method, however, are not very large.

For marijuana, adding the recanters of two previous mentions of use contributes only 5 percentage points to the panel estimates at age 27 to 28 (76 percent versus 71 percent), and the differential appears to remain unchanged thereafter. Correcting specifically for recanting of a mention of use in 12th grade adds 3 to 4 percentage points to the lifetime estimate, beginning with the first followup after high school

and continuing thereafter. Because the unadjusted prevalence rates are so high, these adjustments to the estimates of lifetime prevalence are extremely modest.

Corrections of a similar magnitude occur for the lifetime prevalence estimates for cocaine. Figure 2 shows that the size of the adjustment grows in the late twenties and early thirties, perhaps because the level of lifetime use rises considerably when respondents pass through their early twenties and, therefore, considerably more self-admitted users are able to recant. The adjustment rises slowly, from 1 percentage point at ages 23 to 24, to 5 percentage points by age 31 to 32 (raising the lifetime prevalence estimate from 34 to 39 percent). As figure 2 illustrates, the recanting of cocaine use first reported in the senior year of high school does not increase with age. The 2 percentage point adjustment from age 21 to 22 remains the same through age to 31 to 32.

A similar picture emerges for LSD. The panel B data in figure 3 show a gradually increasing adjustment with age, although a small one, growing from no adjustment at age 19 to 20 and rising to 3 percentage points by age 31 to 32 (raising the lifetime prevalence estimate from 18 to 21 per-cent). Lifetime experience with LSD rose considerably when those respondents were in their early twenties, as with cocaine, making more people available to recant reported use. Figure 3 shows that the recanting of LSD use first reported in high school did not increase with age, as it did with cocaine. The corrections at all ages in figure 3 amount to only 1 or 2 percentage points.

### The Psychotherapeutic Drugs

A number of prescription-controlled classes of drugs were included in the study, but, in the interest of brevity, the authors chose tranquilizers and barbiturates for illustrative purposes. The same three graphics are presented for each of these drugs as for the illegal drugs (see figures 4 and 5). It is immediately apparent in these figures that the adjustments in the lifetime prevalence rates for these drugs are larger than for the illegal drugs, in both absolute and proportional terms. For tranquilizers, by age 31 to 32 the adjustment for recanting twice previously mentioned use adds 9 percentage points to the lifetime prevalence rate, and increases the unadjusted estimate of 23 percent to an unadjusted level of 32 percent. This correction increases with age, but figure 4 indicates that this is primarily due to the recanting of use originally reported in high school. As early as

the first followup at age 19 to 20, 7 percent of the cohort recanted tranquilizer use that they had reported in the senior year. This correction is relatively unchanged thereafter.

The picture is much the same for barbiturates. Figure 5 shows a growth with age in the recanting correction, reaching 6 percentage points by age 31 to 32, when the unadjusted lifetime prevalence rate was 16 percent, and the adjusted prevalence 22 percent. Figure 5 shows that most of this is again due to recanting the use first reported in high school. The correction also reaches 6 percentage points by age 31 to 32.

### Subgroup Differences

Based on the literature cited above, the authors expected to find that race/ethnicity would be related to likelihood of recanting, as would the level of education attained (although the absence of dropouts in the current study would reduce the strength of the relationship). It was reasoned that respondents with higher levels of education should have higher comprehension levels and be more likely to complete their questionnaires carefully, resulting in less recanting. The authors further expected that occupational status level would be related positively to recanting, because respondents in higher status occupations would have more to lose if their drug use were exposed, and thus greater motivation to conceal it. In addition, the authors considered it likely that job setting and household composition might relate to rate of recanting. Specifically, it was expected that those in workplace settings that were least tolerant of drug use or more likely to invoke severe sanctions if drug use were revealed, would recant more often because of intentional concealment. The military and police were expected to meet this criterion. Finally, the authors expected that those living in households containing people (for example, the respondent's children and spouse) from whom the respondent might wish to conceal use would have higher recanting rates. Because these respondents might be concerned about these people seeing their answers, they would be more likely to conceal their use.

The following specific hypotheses were tested: (1) African-American respondents would have higher rates of recanting than white respondents; (2) those living with children or spouses would have higher rates of recanting than those who did not; (3) the more educated would have lower rates of recanting than those less educated; (4) those in high-status occupations would have higher rates of

recanting; and (5) those in workplace settings least tolerant of drug use would have higher rates of recanting.

Other demographic variables were chosen for these analyses without any particular hypotheses about the likely outcome—specifically, gender and community size.

Table 1 presents the recanting rates for different subgroups on reported use of marijuana, cocaine, LSD, tranquilizers, and barbiturates. Recanting rates are based on the data from the fourth followup, at ages 25 to 26, of the graduating classes of 1977 to 1987. The data from the fourth followup were used instead of those from longer term followups to increase the number of cases in the subgroups. Even so, the number of cases are somewhat limited in some of the subgroups discussed, and the reader is cautioned to note the weighted number of cases provided in table 1. Recanting rates are calculated as the difference between the adjusted and unadjusted lifetime prevalence rates, divided by the adjusted lifetime prevalence rates; in other words, the proportion recanting stated as a proportion of all of those who reported use at the time in question plus any who twice previously reported use but did not report use at the time in question.

The differences in recanting rates among categories on each variable were tested for significance using a chi-square analysis, which ignores ordinality in the relationship. The level of significance is shown under the recanting rate values for each set of answer categories in table 1.

Table 1 illustrates that some degree of recanting is found across virtually all of the subgroups, and in general the degree of recanting does not vary greatly from subgroup to subgroup. In sum, this appears to be a phenomenon which does not evidence great subgroup differences. The recanting differences between genders on marijuana and cocaine use are nonsignificant. They are fairly small, but statistically significant, on LSD, tranquilizers, and barbiturates.

Consistent with the first hypothesis, race/ethnicity shows some relatively large differences in recanting rates, with African Americans recanting more than white respondents for both marijuana and cocaine use.

Consequently, the prevalence rates for whites and African Americans for these drugs are more divergent on the unadjusted lifetime prevalence than after adjustment for recanting has occurred.  
Race/ethnicity

**TABLE 1.** *Lifetime prevalence of five drugs at the fourth followup by subgroups, classes of 1977-1987.*

	N(Wtd)	N(Unwtd)	Marijuana			Cocaine		
			Life-time, adjusted	Life-time	R.R.	Life-time, adjusted	Life-time	R.R.
Total:	13237	17276	70.4	66.9	+0.051	32.3	29.9	+0.074
Sex:								
Males	5894	7785	72.6	68.8	+0.052	37.4	34.8	+0.070
Females	7343	9491	68.7	65.3	+0.049	28.2	26.0	+0.078
Race:								
White	11070	14655	71.4	68.3	+0.043	33.6	31.4	+0.065
Black	1125	1280	66.2	58.8	+0.112	22.2	19.0	+0.144
Other	1077	1388	65.0	61.1	+0.060	30.1	27.0	+0.103
					**			**
Household composition:								
Live with spouse:								
yes	5811	7495	67.3	63.4	+0.058	26.2	23.6	+0.099
no	7405	9749	72.8	69.6	+0.044	37.1	34.9	+0.059
					**			**
Live with partner:								
yes	1342	1923	83.3	79.8	+0.042	48.6	45.9	+0.056
no	11874	15321	68.9	65.4	+0.051	30.4	28.1	+0.076
								*
Live with children:								
yes	3635	4836	69.6	65.2	+0.063	27.3	24.8	+0.092
no	9581	12408	70.7	67.5	+0.045	34.2	31.9	+0.067
					**			**
Live with parents:								
yes	2739	3524	67.6	64.2	+0.050	31.2	28.9	+0.074
no	10477	13720	71.1	67.5	+0.051	32.6	30.2	+0.074
Community size:								
Farm/country	1716	2204	62.8	58.2	+0.073	22.4	20.5	+0.085
Small-medium city	6498	8508	70.0	66.3	+0.053	31.8	29.5	+0.072
Large city	2820	3693	72.8	69.7	+0.043	34.5	31.7	+0.081
Very large city	2045	2658	74.3	71.8	+0.034	38.6	36.5	+0.054
					**			
Education level:								
High school	7110	9815	73.1	69.0	+0.050	35.4	32.8	+0.073
Associate degree	1575	2044	69.8	66.4	+0.049	31.0	28.1	+0.094
Bachelor degree	4082	4863	67.0	64.3	+0.040	28.4	26.6	+0.063
Master or Ph.D.	442	520	62.1	59.7	+0.039	24.5	23.6	+0.037
					*			
Occupation:								
Semi-skilled	2157	2992	75.3	72.0	+0.044	37.4	35.1	+0.062
Clerical	2988	3863	67.4	63.9	+0.052	28.1	26.2	+0.068
Police/Fire	217	266	68.3	62.7	+0.082	26.8	22.4	+0.164
Military	391	486	66.7	60.2	+0.097	28.0	24.3	+0.132
Skilled	980	1455	77.5	73.9	+0.046	45.0	42.0	+0.067
Mngr/Prfessnl/Ph.D.	4668	5811	69.4	66.7	+0.039	31.1	29.1	+0.064
					**			

Recanting rates are calculated as the percentage difference between lifetime users adjusted and lifetime users, divided by the lifetime users adjusted percentage. Lifetime users adjusted includes recanters; see text for full definition. Chi square analyses were performed distinguishing the recanters versus all users who did admit use at the fourth followup. Significant differences among subgroup categories are indicated by asterisks below the subgroups.

KEY: \* = significant at the 0.05 level, \*\* = significant at the 0.01 level, R.R. = Recanting Rate.

**TABLE 1.** *Lifetime prevalence of five drugs at the fourth followup by subgroups, classes of 1977-1987 (continued).*

	LSD			Tranquillizers			Barbituates		
	Life-time, adjusted	Life-time	R.R.	Life-time, adjusted	Life-time	R.R.	Life-time, adjusted	Life-time	R.R.
Total:	16.6	15.0	+0.093	20.9	16.7	+0.201	13.4	10.3	+0.237
Sex:									
Males	21.6	19.9	+0.079	21.1	17.4	+0.175	15.5	12.2	+0.213
Females	12.5	11.1	+0.112 *	20.7	16.1	+0.222 **	11.8	8.7	+0.263 *
Race:									
White	17.9	16.3	+0.089	22.2	17.9	+0.194	14.2	10.9	+0.232
Black	4.5	4.0	+0.111	9.3	7.5	+0.194	6.3	4.7	+0.254
Other	15.5	13.7	+0.116	19.0	14.5	+0.237	13.5	10.3	+0.237
Hshld comp; live w/:									
Spouse: yes	13.7	12.1	+0.117	19.8	15.2	+0.232	12.6	9.3	+0.262
no	18.9	17.4	+0.079 **	21.6	17.9	+0.171 **	14.1	11.0	+0.220 *
Partner: yes	26.5	24.8	+0.064	28.5	23.8	+0.165	20.4	16.4	+0.196
no	15.5	14.0	+0.097	20.0	15.9	+0.205	12.6	9.6	+0.238
Children: yes	14.9	13.1	+0.121	20.8	15.6	+0.250	14.2	10.8	+0.239
no	17.2	15.8	+0.081 **	20.8	17.1	+0.178 **	13.1	10.1	+0.229
Parents: yes	14.5	13.0	+0.103	18.5	14.6	+0.211	12.1	9.5	+0.215
no	17.1	15.6	+0.088	21.4	17.3	+0.192	13.8	10.5	+0.239
Community size:									
Farm/country	14.0	12.4	+0.114	19.3	15.4	+0.202	13.4	10.4	+0.224
Small-medium city	16.5	15.0	+0.091	20.9	16.5	+0.211	14.1	10.7	+0.241
Large city	17.6	15.7	+0.108	20.9	16.8	+0.196	12.5	9.3	+0.256
Very large city	17.4	16.5	+0.052 *	21.5	18.0	+0.163	12.4	10.1	+0.185
Education level:									
High school	20.1	18.1	+0.100	24.2	19.5	+0.194	17.2	13.3	+0.227
Associate degree	15.2	13.6	+0.105	19.7	14.9	+0.244	13.6	10.0	+0.265
Bachelor degree	11.9	11.0	+0.076	16.0	13.1	+0.181	7.8	5.9	+0.244
Master or Ph.D.	9.7	8.8	+0.093	16.4	12.7	+0.226	5.6	4.5	+0.196
Occupation:									
Semi-skilled	22.4	20.5	+0.085	25.8	21.3	+0.174	19.1	14.4	+0.246
Clerical	13.0	11.3	+0.131	20.0	15.5	+0.225	11.2	8.2	+0.268
Police/Fire	13.1	10.1	+0.229	16.6	12.8	+0.229	9.4	6.5	+0.309
Military	17.3	14.7	+0.150	15.9	12.4	+0.220	12.0	9.4	+0.217
Skilled	30.2	27.5	+0.089	28.1	23.1	+0.178	22.3	18.9	+0.152
Mngr/Prfessnl/Ph.D.	13.8	12.9	+0.065 **	18.6	15.1	+0.188	10.6	8.1	+0.236 *



differences for the other drugs are much smaller and not statistically significant.

The second hypothesis, concerning the effect of a spouse or children living in the household, also received empirical support. Those living with a spouse were more likely to recant use of all five drugs than those not living with a spouse; however, the differences are not very large. Similarly, differences were found in the recanting rates on four of the five drugs for those living with children versus those without children in the household. Those without children had lower recanting rates. Again, the differences were modest and of the same order of magnitude, suggesting that the effect of living with a spouse probably accounts for most of the apparent effect observed for living with children.

The third hypothesis was partially supported. Those who have the least schooling have the highest rate of recanting on marijuana use, but the relationship is very weak, with a recanting rate of 0.04 for those with only a high school education versus 0.06 for those who had attained a master's degree or more. For the other drugs, differences in recanting among categories are neither statistically significant nor ordinal. While there may be some tendency for the more educated to have lower recanting rates on the three illegal drugs (but not the psychotherapeutic drugs), the differences are hardly important. It should be noted in passing, however, that the absolute prevalence rates for all five drugs correlate negatively with the level of education attained, and that those differences are quite large in both absolute and proportional terms for LSD, tranquilizers, and barbiturates.

The fourth hypothesis, that those with high-status occupations would be more likely to recant because they have more to lose if their use were exposed, is not confirmed. Those in the top occupational category (defined as "managerial," "professional," or "requiring a Ph.D.") had among the lowest recanting rates.

Considerable support was found for the fifth hypothesis, that recanting would be highest among those working in the military or in police or firefighting (a combined category in the answer set) because the adverse consequences of possible exposure would be highest for them. The differences among the occupational groups were statistically significant for four of the five drugs examined (tranquilizers were the exception), and those in the military and police/firefighting professions had the highest rates of recanting on

the three illegal drugs. This occupational category also had the highest recanting rate for the psychotherapeutic drugs.

No hypothesis was offered about the effect of community size on recanting rates. Table 1 shows that for marijuana, recanting does decline very modestly with increasing community size. It also shows that those from the very large cities had the lowest rates of recanting across all five drugs; in general, however, the differences in recanting rates are not large across the community-size categories, nor are they very consistent.

## DISCUSSION

For certain of the drugs—particularly marijuana and LSD, and to a lesser extent cocaine—the relatively low level of recanting of earlier reported use, even over a 14-year interval, is reassuring. It suggests that there is relatively little erosion in truth-telling with age, even as people are well along in their career paths and family formation. It also indicates that gathering data in the home setting by means of a mailed questionnaire is a reasonable approach for this age group. The data do suggest, however, that there may be some increase in concealment with age, and that age comparisons in cross-sectional studies of the general population will likely reflect this bias. (The estimates could conceivably be adjusted to correct for it, however.)

For the two psychotherapeutic drugs examined, the results were somewhat less reassuring. The recanting rates were higher in both absolute and proportional terms. Because the illicit use of these drugs is generally seen as no more deviant than the use of illegal drugs (as indicated by disapproval rates for various drugs; see Johnston et al. 1995), one would assume no greater motivation to conceal because of the threat of exposure. An alternative explanation, favored by the authors, is that the definitions of these substances are much less clear to respondents. There are, after all, nonprescription substances, such as over-the-counter sleep aids and diet aids, as well as mail order look-alike drugs, that are often given the same slang terms as the prescription drug about which the questions ask.<sup>2</sup> That fact raises the possibility that young respondents—particularly when still in high school—may be overinclusive in their earlier answers about drug classes such as tranquilizers and barbiturates. In subsequently recanting some of those overly inclusive answers, perhaps because of a better understanding of the intended distinctions, respondents may actually be providing more accurate data in their later responses. (This

interpretation is supported by the fact that for these two drugs, much of the recanting seems to involve use originally reported in high school.) In fact, the cohorts under study here might particularly show this effect because the distribution and use of look-alikes peaked around the late 1970s and early 1980s (Johnston et al. 1995). Further, the wording of the question was later revised to emphasize that only use of prescription substances should be included. To the extent that the rewording had this effect, subsequent cohorts may show less recanting. Still, the definitions for the psycho-therapeutic drugs are difficult ones, and to the extent that the authors' hypothesis is true—namely, that young respondents tend to be overly inclusive in reporting their use—researchers surveying adolescents should be sensitive to the possibility that prevalence estimates may be high for these drugs. A further hypothesis is that the problem increases with even younger respondents, who may be less able to make some of the fine distinctions requested by the researchers. It is because of such concerns that the authors do not even report the prevalence rates for barbiturates and for narcotics other than heroin obtained from 8th and 10th grade respondents in the annual Monitoring the Future surveys.

### Subgroup Differences

The finding that the rate of recanting is not much affected by the composition of the household setting in which the respondent receives the questionnaire is reassuring in many ways. In particular, it suggests that declines in use associated with getting married, or increases in use associated with leaving the parental home, are not methodological artifacts. Both such changes have been reported previously from the panel data from this study (Bachman et al. 1984).

It should also be reassuring to investigators in the field that recanting is not strongly associated with most of the other variables assessed here. That means that relationships between drug use and these variables, when examined in cross-sectional surveys of adults, are probably not biased by such a methodological artifact.

The two exceptions are, however, reason for some concern. If African-American respondents do tend to deny past use more than whites, then racial comparisons in cross-sectional surveys may need adjustments. The higher-than-average recanting rates for those in military and police/fire-fighting occupational settings also caution about how literally one takes survey data gathered on these populations. The data on these two groups are only

suggestive at this point, given the small subgroup sample sizes, but the findings are certainly worth further investigation. They are, however, consistent with the hypothesis that people in these settings have the most to lose if drug use were revealed and, therefore, may be more likely than average to conceal use.

## CONCLUSIONS

Overall, recanting rates tend to be modest for the illegal drugs but less so for the illicit use of the psychotherapeutic drugs. This suggests that concealment effects are not strong, but that ambiguity in the definition of certain drug classes (clearly highest for the psychotherapeutic drugs) does lead to a modest amount of recanting. But, the "revised" answers may well be the more accurate ones, and the answers given at earlier ages for the psychotherapeutic classes of drugs may be inflated. In general, differences in recanting rates among subgroups are not large. The largest are the rates for African Americans who recant earlier reported marijuana and cocaine use (but not the use of the three other drugs), and those for young adults in the military or in police or firefighting occupations, who showed a tendency to recant more than other occupational groups. These findings raise some questions for those interpreting survey results based on these populations.

## NOTES

1. The authors chose to base the criterion for recanting on the respondent's twice previously reporting use of the drug, rather than once, because they judged that it constituted an unambiguous statement by the respondent of having used. Simple reporting errors due to haste or misunderstanding should be reduced substantially using this method, and, in correcting lifetime prevalence estimates on the population, it seemed a reasonable procedure.
2. The study contains questions in a single questionnaire form administered to 12th graders on over-the-counter and look-alike stimulants, and reports significant levels of use of these drugs. Unfortunately, the study does not yet contain questions about sedating or tranquilizing agents sold over the counter or by mail order, although such products clearly do exist. When questions about over-the-counter substances were last included in the study (1989), the 12-month prevalence rate for high school seniors was 16 percent for sleep aids and 5 percent for agents to "calm people down."

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