

Drug Use and Life-style Among College Undergraduates

Nine Years Later

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• A questionnaire study of drug use and life-style among college seniors, previously performed in 1969, was repeated at the same college in 1978 with identical methods. Moderate increases in marijuana use were found; cocaine use had increased dramatically; most other drug use changed only slightly. Differences between users and nonusers, already modest in 1969, had narrowed further by 1978: users and nonusers were indistinguishable on grades, athletics, other college activities, career plans, and subjective alienation. Only heterosexual activity and visits to a psychiatrist still distinguish users from nonusers.

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Drug use on the college campus has generated much research in the past ten years. Studies have attempted not only to estimate the proportion of students using specific drugs, but also to characterize groups of drug users in terms of their academic performance, personalities, attitudes, and life-styles.

In one such study, Walters et al¹ distributed anonymous questionnaires to 540 members of the senior class at a New England university. Several tests applied to this sample suggested that the sample was representative of the senior class as a whole. The study documented a high incidence of drug use: for example, 67% of the respondents reported use of marijuana or hashish on at least one occasion, and 16% reported use of marijuana once a week or more. About 15% stated that they had used LSD, and 24% claimed use of amphetamines. However, perhaps more interesting than the raw frequencies was the finding that even frequent drug users did not differ significantly from nonusers on grades, athletic participation, or other "official" college activities. Drug use did seem related to differences in values and attitudes, as suggested by greater subjective "alienation," less definite career plans, and broader sexual activity.

A number of similar studies of college drug use, also dating from the late 1960s, are reviewed by Berg.² Most of these studies indicate lower prevalence rates than the study of Walters et al, perhaps due to the fact that most were conducted a year or two earlier, many were in other parts of the country, and some may have been affected by inadequate measures to ensure anonymity of the respondents or randomness of sample.

The 1970s have produced increasing numbers of epidemiologic studies of college drug use, many of which also attempt to assess personality characteristics of drug users. However, the great majority of such studies have been cross-sectional, examining a given group of students at a given time. Only a few longitudinal studies are available.³⁻⁶ These combine to suggest a rise in the use of marijuana and hashish, hallucinogens, and amphetamines from the late 1960s through about 1973,³⁻⁶ with perhaps a plateau,^{3,6} or even some decline,⁶ thereafter.

The present study examines a longer interval than previous studies by comparing drug use in 1978 at the same university studied by Walters et al in 1969.¹ To maximize the accuracy of the comparison, the present study was performed by one of the investigators involved in the original study (H. G. P.) with identical methods and a virtually identical questionnaire. Thus, although the findings may not generalize to current college drug use in other localities, they would seem to promise an accurate assessment of trends in one locality during nearly a decade.

METHOD

Questionnaires were distributed to university seniors only at February (1978) registration: Of the 1,600 seniors, 740 received the questionnaire and 710 (507 men and 203 women) completed it. The questionnaire was identical to that used in the previous study, where it is shown in its entirety,¹ except for the addition of several new drug categories (methaqualone, tetrahydrocannabinol [THC], amyl nitrite, phencyclidine hydrochloride [PCP], nitrous oxide) and one added question on scholastic aptitude test (SAT) scores obtained prior to college.

Anonymity was assured by unmarked questionnaires and a sealed box into which they could be deposited immediately.

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(However, it should be noted that at least two recent studies^{7,8} have found that strict anonymity may not be crucial for accurate reporting of drug use by college students in surveys.)

To test the representative nature of the sample, its characteristics were compared with data for the entire senior class on five corresponding variables: sex, residence (on campus vs off campus), visits to a psychiatrist, grades, and SAT scores. The ratio of male to female respondents, residence, the number of students reporting a visit to a psychiatrist, and SAT scores all produced no significant differences by use of the two-tailed test method. Grades require further explanation. Respondents were asked to state their grade averages for each of their three previous college years, in one of six ranges (A to A-, A- to B+, B+ to B-, B- to C+, C+ to C-, below C-). Using this scale, the grades reported by the students in the sample were significantly higher ($P < .01$) in each of the three years than the grades recorded for the class as a whole. However, the absolute magnitude of this difference was very small—about 0.1 on the standard "grade point average" scale (A = 4, B = 3, C = 2, D = 1, E = 0). As the average student may have a grade variation in his college career ten or 20 times larger than this difference of 0.1, it represents a small error in the results, made significant only as a result of the large sample size. Thus, all available lines of evidence indicate that the sample in this study was a truly representative one.

RESULTS

The questionnaire used was essentially identical to that used in the 1969 study, with the addition of a few other questions covering additional drug categories and SAT scores. The original questionnaire is shown in the previous report¹ and will not be reproduced herein.

Rates of Drug Use

The figure compares reported incidence of use of various drug categories in 1969 and 1978. Perhaps the most striking feature of this figure is that many of the drug categories show little change during a decade. This tentatively suggests that a plateau of drug use may have already been reached at this university by 1969. However, the possibility remains that drug use may have risen to a higher peak somewhere between 1969 and 1978 and has now fallen back to its previous level.

In interpreting the Figure, other problems must be considered. First, incidence (having used the drug at least once at some time) must be distinguished from prevalence (currently using the drug). In the case of alcohol and marijuana, both rates are shown. It will be seen that although there is no change in the percentage of students who have tried alcohol and marijuana at least once, there is modest rise in regular users of alcohol (once a week or more) from 38% to 44%, and a striking rise in regular use of marijuana, from 16% to 26%. The latter is consistent with the generally accepted impression that marijuana is now gaining wider social acceptance.

Prevalence figures for other drugs are not shown, because too few individuals reported regular use: less than 1% of respondents claimed weekly use of LSD, other hallucinogens, amphetamines, opium, morphine, or heroin in either 1969 or 1978. However, weekly users of cocaine rose from 0% in 1969 to 1.6% in 1978, a significant increase ($P < .01$).

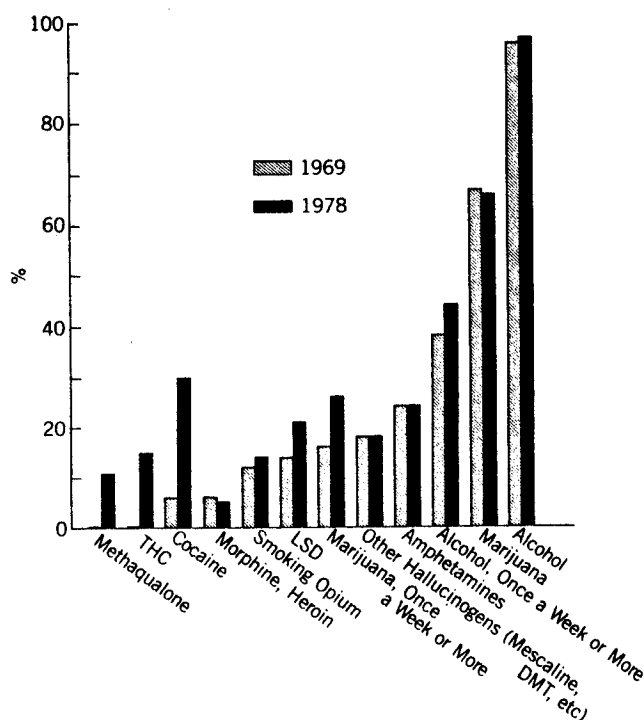
In the case of the hallucinogens, incidence figures may be particularly misleading. Although the proportion of students having tried LSD at least once has increased from 14% to 21%, it is possible that few of the 1978 students are using LSD currently and that many of them tried the drug years earlier when they were in secondary school. This is much less likely to have been the case with the 1969 students, since LSD was not widely available even a few

years before 1969. Thus, the prevalence of college LSD use may have remained the same or even declined, although its incidence has risen. Similar considerations would apply to the category "other hallucinogens." Unfortunately, the questionnaire did not provide the data necessary to confirm or refute these conjectures.

A second problem is that respondents may not have actually received the drugs that they believed that they had ingested. It seems likely, for example, that some students who claimed to have taken "mescaline" had unknowingly taken LSD or PCP.⁹ Similarly, the "THC" claimed by many respondents may have actually been PCP, LSD, hashish, or other substances. "Amyl nitrite" may have represented largely butyl nitrite, and "cocaine" may have been amphetamine, mixtures of amphetamine and procaine, or other substances. Thus, many categories should be more correctly regarded in this discussion as substances that the respondents thought that they had taken.

The categories of THC, methaqualone, and amyl nitrite did not appear on the 1969 questionnaire, since it was assumed at that time that they were too rare to merit a specific question. When asked to "write in" unlisted drugs, fewer than 1% of the 1969 respondents mentioned any of the three substances. Thus, in the Figure they are shown at 0% for 1969, although presumably a very slight incidence existed for all three substances even at that time.

Perhaps most astonishing is the use of cocaine in the nine-year period. In 1969, cocaine was considered sufficiently rare that it was combined with morphine and heroin in a single question. Of the 517 respondents in 1969, not one reported use of morphine, heroin, or cocaine on more than ten occasions. However, by 1978, 60 of 708 respondents (8.5%) claimed to have used cocaine more than ten times, and 215 respondents (30.4%) reported using it at



Percentage of respondents reporting use of various drugs in 1969 and 1978: THC, tetrahydrocannabinol; DMT, demethyltryptamine.

least once. This rise is made even more striking by the fact that it occurred in the absence of any significant change ($P > .3$) in the rates for morphine, heroin, or amphetamines.

It is remarkable to find that nearly a third of students claim to have tried cocaine, and that indeed it now ranks second only to marijuana of all illicit drugs used by this population. Is cocaine use rising rapidly among college students nationally, and, if so, what are its origins? These questions merit investigation.

It has been our experience that many individuals report stimulant effects lasting several hours from a single "snort" of what they believed to be cocaine. Since real

cocaine has a much briefer duration of action than this," it seems likely that much "cocaine," in New England at least, may be wholly or partly amphetamines or related drugs. Furthermore, on the street, cocaine commands a much higher price per dose than amphetamines, perhaps encouraging the dealer to relabel any sympathomimetic agent as cocaine in order to improve profits. Thus, the use of genuine cocaine in our student sample may be much less than the reported figures. However, this still leaves unexplained the great rise in reported cocaine use since 1969.

Attributes of Drug Users

As in the 1969 study, users of specific drugs and drug users as a whole were compared with nonusers on all of the remaining items of the questionnaire. Also examined were the subcategories of "hallucinogen users"—those who had used LSD or another hallucinogen at least once, and "old users";—those who had first tried marijuana or LSD at least three years earlier. Definitions of user categories and methods of analysis were identical to those reported in the earlier article.¹

Grades.—Virtually no significant differences were found between nonusers and any category of drug users on grades in freshman, sophomore or junior years, a finding similar to that in 1969. Students who used alcohol once a week or more received lower grades in all three years than students who drank less frequently or not at all, but this difference reached significance ($P < .05$) only in the sophomore year. No differences even approaching significance were found between regular users of marijuana (once a week or more) and nonusers. This is consistent with the finding of both the 1969 study¹ and other studies,¹¹ and would seem inconsistent with suggestions that marijuana may produce an "amotivational syndrome,"^{12,13} at least in the dosages used by the population in this study.

College Activities.—No significant relationship was found between any category of drug use and participation in college activities (varsity sports, intramural sports, political organizations, drama and music organizations, other organizations, or total time spent in such activities). This again coincides with the findings of the 1969 study, except for the fact that the 1969 study found a significant relationship between drug use and membership in campus political organizations. The decline in campus political activism in 1978 would seem likely to account for the disappearance of this finding in the current study.

Career Plans.—Virtually no significant differences were found between nonusers and any category of users on the career plans question. Only male "hallucinogen users" scored as somewhat less definite than students who had used no drugs at all ($P < .05$). This again coincides closely with the findings of the 1969 study. It is of interest to note that for the sample as a whole, only a slight shift occurred between 1969 and 1978 on career plans. About 41% of all male students reported "quite definite" or "very definite" career plans in 1978 as opposed to 34% in 1969—a difference that does not reach significance.

Visits to a Psychiatrist.—As in 1969, the various categories of drug users were much more likely to have seen a psychiatrist while in college than were the nonusers. However, this difference reached significance only in the male group (Table 1). It is difficult to estimate how frequently drug use was actually a cause of psychiatric problems, but this would appear to be quite rare. Only three (2.0%) of the 148 users who had seen a psychiatrist responded "yes" to the question asking whether or not they felt that their psychiatric problem was related to drugs;

Table 1.—Visits to a Psychiatrist vs Drug Use

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	Non- users	All Users	Hallucinogen Users	Old Users
Men				
No.	104	398	110	263
Never visited or visited once, %	98.1	85.7	80.9	83.3
Visited a few times or more, %	1.9	14.3	19.1	16.7
$P(\chi^2)$	< .001 < .001 < .001			
Women				
No.	46	154	27	100
Never visited or visited once, %	84.8	76.0	66.7	73.0
Visited a few times or more, %	15.2	24.0	33.3	27.0
$P(\chi^2)$	NS NS NS			

Table 2.—Heterosexual Activity vs Drug Use

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	Non- users	All Users	Hallucinogen Users	Old Users
Men				
No.	100	375	104	249
Not had intercourse, %	49.0	16.0	4.8	11.2
Had intercourse with at least one part- ner, %	51.0	84.0	95.2	88.8
$P(\chi^2)$	< .001 < .001 < .001			
Women				
No.	41	149	28	99
Not had intercourse, %	53.7	10.7	7.1	8.1
Had intercourse with at least one part- ner, %	46.3	89.3	92.9	91.9
$P(\chi^2)$	.001 .001 .001			

another eight (5.4%) responded "possibly," and 137 (92.6%) responded "no." Thus, unless the users are grossly underestimating the role of drug use in their psychiatric problems, it appears to be a relatively minor factor. It is not even possible to conclude that drug users suffer from a greater number of psychiatric problems; they might, for instance, feel that there is less stigma attached to seeing a psychiatrist than the nonusers.

Subjective Alienation.—The questions "Would you say that you are alienated from American society?" elicited highly significant differences between nonusers and the various categories of users in 1969, but generally failed to do so in 1978. Among the female students in 1978, no significant differences were found between any groups, and among the male students, only the "hallucinogen users" reported significantly more subjective alienation than the nonusers ($P < .001$). This change between 1969 and 1978 appears largely due to the fact that alienation was far less frequently reported by 1978 respondents than by 1969 respondents. Of the 504 respondents in 1969, 31.9% answered "a good deal" or "definitely yes" to the alienation question, as opposed to 15.9% of the 684 respondents in 1978, a difference that is highly significant ($P < .001$). Indeed, a number of the 1978 respondents wrote comments in the margin to indicate that they were not certain of how to interpret the word "alienation," whereas this virtually never occurred in 1969. Alienation appears to have declined from a common phenomenon, a part of the vocabulary of virtually every 1969 student, to a much more infrequent one today. Thus, the correlation between drug use and alienation, widely reported in earlier studies,^{1,14-16} seems feeble in 1978.

Sexual Activity.—As in 1969, dramatic differences were found between users and nonusers in levels of heterosexual activity (Table 2). Among both male and female students, about half of the nonusers reported having intercourse with at least one partner, whereas the various categories of users ranged from 84.0% to 95.2%. These figures closely resemble those reported by the sample in 1969. A 1970 study¹⁷ of drug use and sexual activity in another college produced similar results. Although increased heterosexual activity was characteristic of all drug users, homosexual activity was not significantly more common among any category of users as opposed to nonusers.

Looking at the total samples without regard to drug use, heterosexual activity increased modestly between 1969 and 1978. In 1969, 69.6% of the male students reported having intercourse with at least one partner, as opposed to 77.0% in 1978 ($P < .02$). The corresponding figures for female

students are 69.3% in 1969 and 80.0% in 1978 ($P < .10$). At least one homosexual experience to orgasm was reported by 5.2% of the male students in 1969 and 5.8% in 1978 (difference not significant). For female students, the figures were 0% in 1969 and 2.2% in 1978 (not significant).

COMMENT

Despite the large number of studies of student drug use published since 1969, it is difficult to infer specific trends that may have occurred during the past decade. By using an identical method at the same college in 1969 and 1978, this study and its predecessor¹ provide some data on this subject.

First, in examining frequency of use of specific drugs, it is not surprising to find that the prevalence of marijuana use has risen considerably, although even in 1978 it is used weekly by only one fourth of the students. Several new drugs have become prominent since 1969, particularly PCP and methaqualone, but both these have been used more than ten times by only about 1% of the sample. By far the most striking change is the rise in cocaine use: nearly one third of the 1978 students report using cocaine at least once. The causes of this phenomenon remain to be explained.

Second, in examining the attributes of users as opposed to nonusers, it appears that the differences, already modest in 1969, have narrowed further in 1978. On most indices of college life—grades, sports, and other activities—even the heaviest drug users were essentially indistinguishable from the nonusers. In addition, three variables that significantly distinguished users from nonusers in 1969—membership in political organizations, subjective alienation, and career plans—failed to distinguish the two groups in 1978. Thus, it appears that drug use has merged even further with "normal" college life in the last nine years.

Only on the variables of visits to a psychiatrist and heterosexual activity do users remain distinguishable from nonusers. Neither of these two variables appears likely to be related to drug use in a direct cause-and-effect sense. It seems more likely, as it did in the 1969 study, that it is differences in self-concept, attitudes, and values in the user, and not the drug use itself, that creates these differences.

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