

Alcohol and Polydrug Use Among College Undergraduates

Mixing drugs is discussed.

The abuse of alcohol and other drugs has long been recognized as a problem on many college campuses. Recent evidence suggests that college personnel are faced with a new menace: polydrug use (Carrol, Malloy, and Kendrick, 1980). Polydrug use refers to the simultaneous or sequential use of two or more mood altering drugs from different pharmacological categories to achieve different affects. Unfortunately, polydrug use has created new and unique problems without eliminating the old ones. During the 1974-75 school year, for example, representatives from the National Institute on Alcohol Abuse visited 62 college campuses and found that most health officials in those institutions were already aware that serious alcohol abuse problems existed on their campuses. Since that time, the problem has increased. Former U.S. Secretary of Health and Human Services, Schweiker, recently told a San Francisco audience that alcohol abuse among young people has reached epidemic proportions (*San Francisco Chronicle*, 1982).

Authorities now estimate that 50 percent of the traffic deaths, 40 percent of the suicides, and 50 percent of the homicides in the United States each year are alcohol related (Kinney & Leaton, 1982). This means that last year there were approximately 10,000 traffic deaths, 2,000 suicides, and 2,700 homicides in the 15-to 24-year-old age group related to alcohol use.

While alcohol represents the number one killer of young people in the nation today, the loss of lives is only part of the picture. Alcohol abuse has repeatedly been linked to poor health, human misery, crime, and delinquency. The problem is complicated by the fact that while alcohol use has remained heavy over the past decade (Favazza & Connell, 1977; Kaplan, 1979; Wright & Moore, 1982), Marijuana, cocaine, and other stimulants (uppers) have grown even more popular (Johnston et al., 1982; Fishburn, Abelson, & Cisin, 1979).

The most consistent information concerning drug use among young people comes from the National Institute of Drug Abuse (NIDA). The NIDA has surveyed high school seniors yearly since 1975 (Johnston et al., 1982). These surveys indicate that from 1975 to 1981 the proportion of students using marijuana during the previous year rose from 40 to 46 percent, and the proportion using stimulants rose from 16 to 26 percent. Other than marijuana, stimulants were the most widely used class of illicit drugs during this period. In addition, they were the only type of drug to show a statistically significant increase in reported use between 1980 and 1981. From 1975 to 1981 cocaine jumped from the seventh to the third most popular illicit drug, while the number of students using it during the previous year doubled from 6 to 12 percent. The use of sedatives (downers) also continues to cause great concern. Although their use has not increased since 1975, downers continue to account for almost twice as many deaths from overdoses as heroin, hallucinogens, cocaine, and other stimulants together (Richards, 1981).

The high school seniors surveyed by NIDA who went to college appear to have taken their drug use habits with them. Fishburn, Abelson, and Cisin (1979) reported in the *National Survey on Drug Abuse* that in the two years from 1977 to 1979 the percentage of college students who had used marijuana jumped from 59 to 68 percent. A recent survey by the *Chronicle of Higher Education* (1982) found that 41 percent of the deans questioned reported increased cocaine use among students on their campuses.

Because most drugs remain in the body for hours, or even days after ingestion, the use of different drugs in sequence can be deceptively dangerous. One of the major dangers involved in polydrug use is related to the synergistic effect of some drugs. This occurs when two or more chemicals interact to create a more complex chemical with properties unlike the original components and with a total effect that is greater than the sum of the original component. This effect has been associated with the following problems: (1) increased and often unpredictable complexities in detoxification (Wesson, 1972); (2) increased risk of cerebral, physical, or psychological damage, or a combination of these factors (Adams et al., 1975); and (3) increased risk of overdose (Gay, 1972). Fatalities have occurred in polydrug users when the blood concentration of each drug ingested was at less than lethal concentrations (Cohen, 1981).

Another danger involved with polydrug use is related to the cross-tolerance effect. This effect occurs when the use of one drug increases not only the tolerance for that drug, but the tolerance for certain other drugs as well. For example, heavy long-term use of alcohol may increase an individual's tolerance for barbiturates; thus, the amount of barbiturates required to obtain the desired result must be increased. But the lethal level of the drug has not increased and therein lies the danger (Coleman, 1976).

How many college students are polydrug users? Hochhauser (1976) surveyed 365 undergraduates and found that 42 percent of those surveyed used combinations of mood altering drugs. Of these polydrug users, 84 percent said they combined alcohol and marijuana, while 30 percent indicated they used one of these drugs with amphetamines, barbiturates, or hallucinogens. Hochhauser found that alcohol was often the first drug used, but noted that those students who turned to other drugs seldom abandoned alcohol. Since the problems associated with alcohol abuse are often exacerbated when alcohol is combined with other drugs, and since polydrug use is on the increase on many college campuses today, a study was undertaken to obtain a current, objective picture of this type of drug use among college students.

OBJECTIVES

A survey of 770 undergraduates enrolled in freshman level psychology classes at a state-supported university was conducted to provide the following information about their alcohol and drug use:

1. The frequency and intensity of alcohol use by sex of respondents;
2. The frequency of marijuana, uppers, downers, and cocaine use by sex of respondents;
3. The frequency of alcohol and drug use by place of residence (on campus, off campus) for both sexes;
4. The percent of the male and female students population which could be classified as heavy, moderate, light, or nondrinkers;
5. The frequency with which heavy, moderate, light and nondrinkers reported seriously considering suicide during the previous six months; and
6. The frequency with which heavy, moderate, and light drinkers combined alcohol with the daily or regular use of marijuana, uppers, cocaine, and downers.

METHODS AND PROCEDURES

All students who were present on the days the self-administered questionnaires were distributed agreed to participate in the study. Participants were told that the survey was being conducted to determine what their drinking habits were and the frequency of their alcohol and drug use.

Questionnaire. The questionnaire contained 70 items pertaining to drinking habits and drug use. The questions in this study were related to sex of respondents; place of residence; number of alcoholic drinks usually consumed per sitting (a drink was defined as one beer, one mixed drink, or 5 oz. of wine); frequency of alcohol, marijuana, uppers, downers, and cocaine use; and suicidal thoughts.

Respondents were classified as heavy, moderate, light, or nondrinkers according to the number of drinks usually consumed per sitting and the frequency of use. Heavy drinkers included those who reported drinking four or more drinks per sitting at least weekly. Moderate drinkers drank fewer than four drinks daily or

four to eight drinks per sitting at least weekly. Light drinkers drank weekly or less and usually consumed three or less drinks per sitting.

Sample. Responses from 29 of the 770 participants were eliminated from the analyses because of gross inconsistencies in their responses or because they failed to complete significant portions of the questionnaire. Of the remaining respondents, 335 were males and 406 were females.

RESULTS

Data reported in table 1 indicate that more than 65 percent of the males and 30 percent of the females said they usually drank four or more drinks at a sitting. Males were more than five times as likely as females to report consuming eight or more drinks per sitting ($p < .0001$).

Table 1
Number of Alcoholic Drinks Usually Consumed Per Sitting
by Sex for the Spring 1982 Semester

Number Usually Consumed	Sex	
	Males (N = 304)	Females* (N = 380)
One	4.9%	14.5%
Two or Three	27.6%	47.4%
Four to Eight	54.9%	35.8%
More than Eight	12.5%	2.4%

*Chi square (3 df); $p < .0001$

Note. A drink was defined as one beer, one mixed drink, or 5 oz. of wine.

Table 2 shows significant differences between males and females with respect to frequency of alcohol, marijuana, uppers, downers, and cocaine use. While alcohol was by far the most popular drug (daily and weekly use combined), both males and females reported daily use of marijuana more frequently than daily use of alcohol. The four most popular drugs were alcohol, marijuana, uppers, and cocaine in that order. During the month before the survey, approximately 88 percent of both sexes used alcohol, 37 percent of the males and 21 percent of the

females used uppers, and 15 percent of the males and 12 percent of the females used cocaine. Downers were not popular with either sex.

Table 2
Frequency of Reported Alcohol and Drug Use by Sex
of Respondents for Spring 1982

Type of Drug	Frequency of Use				
	Daily	Weekly	Monthly	Not Recently	Never
Alcohol					
Males ^a	11.7%	62.3%	13.5%	4.8%	7.8% *
Females ^b	4.4%	62.7%	21.2%	5.9%	5.7%
Marijuana					
Males	13.9%	16.0%	17.2%	22.7%	30.2% *
Females	8.1%	9.4%	13.3%	24.9%	44.3%
Cocaine					
Males	0.9%	3.3%	10.4%	19.1%	66.3% *
Females	1.2%	1.7%	9.2%	8.7%	79.2%
Uppers					
Males	0.6%	5.1%	11.9%	23.9%	58.5% *
Females	1.2%	2.7%	9.8%	13.3%	73.0%
Downers					
Males	0.6%	2.4%	6.5%	17.9%	72.6% *
Females	1.2%	1.6%	5.8%	12.8%	78.8%

*Chi Squares (4 df); $p < .05$.

^an = 335

^bn = 406

Place of residence—on campus or off—was also related to alcohol and drug use (Table 3). Males who lived off campus were more than twice as likely to report the daily use of marijuana and almost twice as likely to report the daily use of alcohol as males who lived on campus. Among females who lived on campus, little difference existed between the percent reporting daily alcohol use and the percent reporting daily marijuana use; however, those living off campus were almost four times as likely to report daily marijuana use as daily alcohol use. To put it another way, the percent of females using alcohol daily did not differ substantially between those who lived on campus and those who lived off; however, the percent of females using marijuana daily was four times greater among those who lived off campus than among those who lived on campus.

Table 3
Daily and Weekly Use of Alcohol and Marijuana
by Sex and Place of Residence

Frequency of Drug Use	Sex			
	Males		Females	
	On Campus (N = 182)	Off Campus (N = 78)	On Campus (N = 269)	Off Campus (N = 73)
Alcohol				
Daily	10.1%	19.0%	4.1%	5.6%
Weekly	67.0%	60.7%	66.3%	62.5%
Marijuana				
Daily	9.9%	23.1% *	5.2%	21.9% *
Weekly	17.6%	19.2%	10.4%	9.6%

*Chi Squares (1 df) revealed significant differences ($p < .05$) in daily marijuana use between those who lived on and off campus for both sexes.

Using the previously reported criteria (see Methods and Procedures), Table 4 shows that males were over four times more likely to be classified as heavy drinkers than females, while females were more than twice as likely to be classified as light drinkers than males ($p < .001$).

Table 4
Percent of Males and Females Who Were Determined to be
Heavy, Moderate, Light, and Nondrinkers

Sex*	Type of Drinker			
	Heavy	Moderate	Light	Nondrinkers
Males (N = 304)	19.4%	42.8%	29.3%	8.6% *
Females (N = 378)	4.8%	30.2%	59.0%	6.1%

*Chi square (3 df); $p < .05$

*Twenty-one males and twenty-eight females did not fall into any of these categories and remained unclassified. They were treated as missing data for this analysis.

Table 5 shows significant differences among heavy, moderate, and light drinkers of both sexes with respect to the incidence of suicidal thoughts ($p < .05$). Among the males, heavy drinkers were approximately three times as likely as moderate and light drinkers to report that they had seriously considered suicide in the previous six months. Among moderate drinkers, females were three times more likely than males to report suicidal thoughts. This latter finding suggests that the criteria for heavy drinking should be different for females than for males.

Table 5
Percent of Heavy, Moderate, Light, and Nondrinkers Reporting Serious Suicidal Thoughts^a by Sex of Respondents

Type of Drinker	Percent Indicating Suicidal Thoughts	
	Males	Females
Heavy	13.6% (8 of 59)	11.8% (2 of 17)
Moderate	4.7% (6 of 128)	14.2% (16 of 113)
Light	4.7% (4 of 86)	6.0% (13 of 218)
Nondrinkers	4.3% (1 of 22)	0% (0 of 21)

Note. Pearson correlations revealed that suicidal thoughts were significantly related to heavy drinking for both males and females ($p < .05$).

^aAnswering "yes" to the following question was considered indicative of suicidal thoughts: "Have you seriously considered attempting suicide during the last six months?"

Significant differences ($p < .01$) were also found among heavy, moderate, and light drinkers with respect to other drug use (Table 6). Heavy drinkers were more likely to use all four types of drugs than were moderate drinkers, while moderate drinkers were more likely to use them than light drinkers. The most important finding was the large percentage of heavy drinkers who used other drugs at least weekly. Among heavy drinkers, almost 44 percent used marijuana, 12 percent used cocaine, and about 11 percent used uppers at least once a week. Since most of these heavy drinkers by definition are drinking daily, they are probably combining alcohol with these other drugs at least once a week.

Table 6
Percent of Heavy, Moderate, and Light Drinkers Who Reported
Daily and Weekly Use of Other Drugs

Type and Frequency of Drug Use	Type of Drinker		
	Heavy (N = 77)	Moderate (N = 244)	Light (N = 312)
Marijuana			
Daily	23.3%	13.6%	6.0%
Weekly	<u>20.5%</u>	<u>17.4%</u>	<u>8.9%</u>
At Least Weekly	43.8%	31.0%	14.9% *
Uppers			
Daily	1.4%	2.1%	0.0%
Weekly	<u>9.5%</u>	<u>4.2%</u>	<u>2.1%</u>
At Least Weekly	10.9%	6.3%	2.1% *
Downers			
Daily	1.3%	1.7%	0.0%
Weekly	<u>4.0%</u>	<u>2.1%</u>	<u>0.4%</u>
At Least Weekly	5.3%	3.8%	0.4% *
Cocaine			
Daily	4.0%	1.3%	0.0%
Weekly	<u>8.0%</u>	<u>1.3%</u>	<u>2.2%</u>
At Least Weekly	12.0%	2.6%	2.2% *

*Chi squares (2 df); $p < .05$.

DISCUSSION

The differences found between males and females with respect to alcohol consumption reflects numerous earlier studies (Straus & Bacon, 1953; Hanson, 1977; Weislogel, 1978; and Hill & Bugen, 1979). One of the most alarming findings in those studies, as well as in the present investigation, was the large proportion of both males and females who said they usually consumed four or more drinks per sitting. Since three to four drinks when consumed on an empty stomach within a one-to two-hour period is enough to intoxicate most college-age females, and five to six is enough to intoxicate most males, a substantial number of both males and females in our sample appear to be consuming enough to become legally intoxicated each time they drink. The fact that heavy drinking was related to suicidal thoughts suggests that many college students do not drink for social reasons only—many drink to escape their problems or to signal others for help. This finding underlines the need for comprehensive services and programs designed specifically to help students, particularly heavy drinkers, to cope with alcohol and drug problems.

While alcohol was by far the most popular drug used weekly or monthly, the daily use of marijuana was reported more often than the daily use of alcohol for both males and females. In fact, among female students living off campus, daily

marijuana use was four times more prevalent than daily alcohol use. Why marijuana is the drug of choice among daily users is unclear. But whatever the reason, it is obvious that the laws intended to curtail marijuana use are not effective, and that there is the need for alcohol and drug abuse programs on college campuses

The finding that over 14 percent of male participants used cocaine, over 17 percent used other stimulants, and over nine percent used downers at least monthly is also evidence for the need for such programs on college campuses. The reason this finding is disturbing is that the tolerance for both stimulants and downers increases quickly, meaning it takes more and more to maintain the desired effect. Beyond that, cocaine withdrawal often results in depression, which is frequently combated with more cocaine or other drugs with potentially lethal results. According to NIDA reports, almost 300 people in the U.S. died from stimulant and cocaine overdoses in 1978, and approximately four times that many died from overdoses of depressants (Richard, 1981).

Equally disturbing was the widespread use of other drugs in combination with alcohol. Because it takes up to 30 days for THC (the major psychoactive substance in marijuana) to be eliminated from the body (Kreuz & Axelrod, 1973), those who smoke marijuana more than once a month and drink occasionally are by definition polydrug users. Among the heavy drinkers, 44 percent used marijuana at least weekly, 12 percent used cocaine, 11 percent used uppers and 5 percent used downers.

The finding that frequency and intensity of alcohol consumption is directly related to the use of other drugs parallels the result of earlier studies. The growing tendency to combine alcohol with other drugs is likely to increase the number of discipline problems, the number of college dropouts, and the number of students killed in drug-related incidents.

The trend among student toward mixing drugs to obtain synergistic effects—and using different drugs in sequence to either wake up, calm down, or sleep—suggests that the current tendency on many college campuses to focus on the use of individual drugs rather than on the polydrug problem should be reevaluated. In the words of former Secretary Schweiker: "Every year, thousands of young people never get the chance to grow into maturity, to develop good judgement, to learn how to say, 'No!' This is no time to play Russian roulette with young lives by looking the other way (Mogagnini, 1982, p. 22)." Schweiker's warning is clear. The evidence has been presented and the case for comprehensive alcohol and drug abuse programs on the college campus has been made. Unless we heed his warning, many potentially good students could end up as socially, emotionally, and intellectually damaged citizens.

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