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College Students' Knowledge of Alcohol and Drinking*

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Abstract

Alcohol abuse during the past few years has been seen by college administrators, student health and counseling personnel, and educators to be a major problem. To encourage colleges to examine knowledge, attitudes, and behaviors of their students regarding the use of alcohol and to develop alcohol awareness programs on their campuses, the National Institute of Alcohol Abuse and Alcoholism (NIAAA) and its National Clearinghouse for Alcohol Information (NCALI) began a program in 1975 called the University 50 plus 72 Project. (1)

During the initial phase of this program, staff and students from 62 selected universities were invited to a conference at Notre Dame in the fall of 1975 to discuss campus drinking problems and to share ideas about alcohol education programs. Among these participants there was a definite feeling that students adhered to a variety of drinking myths and had a minimal amount of factual information concerning the effects of alcohol on the body. They also felt that students lacked basic objective information for making responsible decisions concerning drinking to become responsible drinkers, if they chose to drink.

This group felt that basic information concerning students' knowledge of alcohol for comparison and as an aid in developing alcohol awareness and education programs should be determined. It was also felt that various demographic characteristics, which in the past have been related to drinking patterns such as sex, race, and parental drinking, should be obtained so that programs could be developed for particular subgroups if relationships were found between these variables and alcohol knowledge.

Introduction

In the past few years several studies including Jessor,(2) Hanson,(3,4) Penn,(5) Glassco,(6) and Engs, (7,8) have investigated the drinking behaviors of college students; however, in recent years few studies have been reported which have investigated the knowledge of the effects of alcohol and drinking of college students.

A few studies have indicated that students on the whole have a general lack of knowledge concerning mood modifiers including alcohol. Only one study was found which indicated that students had an adequate knowledge of alcohol and drugs. This was the School Health Education Study (9) in 1963 which examined the health knowledge and practices of students in the public schools. This study found that about 82% of high school students correctly answered questions concerning alcohol and drugs. Rankin, et al (12) with 720 male and 317 high school seniors in 1969 found that only 10% of the total group had adequate knowledge about alcohol and its effects. Pollock (13) studying 465 college students' drug and alcohol knowledge in California found that out of 62 questions there was a mean of about 35, or less than 50% answered correctly by the total group. In 1975, Evans et al (14) with a sample of 635 students on the West Coast reported that the mean or correct response concerning questions about alcohol was about 41%. Most of the authors in these previous studies concluded that knowledge about alcohol and drugs was not very good and recommended adequate educational programs in mood- modifying substances.

The results of studies examining the knowledge of alcohol of males and females have been mixed. The School Health Education Study indicated that in all subject areas, including mood modifiers, female students scored higher than male students.

Campbell and Early,(10) in 1968, using the Kilander Health Knowledge Test with 49 Texas college students, found that females had a significantly higher level of knowledge of alcohol and drugs than males. Engs,(11) however, in 1973, using this same instrument with 100 volunteers for crisis intervention centers, primarily composed of students in a southern state, found that males had significantly higher scores in the area of alcohol and drugs than females.

Purpose

A purpose of this study was to survey students at institutions involved with the 50 plus 12 project to determine their knowledge about alcohol so as to provide information for college health educators as an aid in program development. Another purpose was to determine the relationship of knowledge about alcohol to selected demographic factors.

Methodology

Sample Selection and Limitations of the Study

Thirteen of the 62 schools in the University 50 plus 12 Project agreed to participate in this study during the academic year 1975-76. Of the total schools, 23% (14) were in the eastern, 24% (15) the western, 25% (16) the north central, and 27% (17) from the southern part of the country.* The percentage of the 13 schools from these areas in the study sample was 23% (3), 30% (4), 23% (3), and 23% (3), respectively. Most of the schools (86%) involved with the project were large universities (10,000 students or more), as was also true for the schools (85%) in this study sample. Among the total schools, 31% were located in areas with populations of 500,000 or more, 20% in populations between 100,000 and 500,000 and the remaining (49%) were located in populations under 100, 000. For the schools in this sample, these percentages were 38.5%, 23%, and 38.5%, respectively. Two of the four primarily black colleges in the total group participated in the study. This resulted in an overrepresentation of black students in the sample as compared to the total group. However, this was thought to be important so as to obtain a sample large enough for statistical analysis.

Each school had a designated person from either student personnel, student health service, or the department of health education to select the sample and administer this question- naire on the campus. These individuals were asked to obtain a sample of approximately 100 undergraduate students prefer- ably by random sample, or if this were not possible, from undergraduate classes such as first aid and general survey courses in which students from any major class level or ethnic group would have an equal chance of participating.**

There are some limitations to this study which may have introduced biases in the sample. The institutions included in the study were part of a project to stimulate alcohol awareness on their campuses. The institutions were not randomly selected. The students were, for the most part, not randomly selected. It is possible that students in this sample had more "alcohol awareness" as compared to students in general. It is also possible that only certain types of institutions or students agreed to participate in the study and they might not be representative of colleges or students as a whole in the total population or in this country. However, there appears to be representation of different types of colleges from the four geographic regions, differently sized schools and community sizes in which the school was located.

The Instrument

An instrument called the Student Alcohol Questionnaire (SAQ) was developed.(16) It included both knowledge and behavior scales.*** The behavior part of the study has been reported elsewhere.(8) The 36 alcohol knowledge, true/false questions were based on information found in pamphlets published by the American Medical Association, Alcoholics Anonymous, and the National Council of Alcoholism. The questions contained items regarding: facts about alcohol (e.g., "Alcohol is usually classed as a depressant."); the effect of alcohol on the body (e.g., "A blood alcohol concentration of .02% usually causes a person to be in a stupor,"); myths about drinking (e.g., "An effective way to sober up is to drink black coffee and to take a cold shower,"); and facts about alcoholic beverages (i.e., "Beer usually contains about 3 to 6% alcohol by volume.").

*NIAAA geographic definition. NIAAA Information and Feature Service, HEW 1:1, 1975

**Only one school used a random sampling procedure. From an undergraduate population of about 13,000, 200 students were randomly selected to participate in the study. From this group, 93 or 41% completed usable questionnaires. The other institutions collected their samples from classrooms with virtually all students completing the questionnaires.

***The Behavior Scale may be obtained from the author and/or gleaned from information presented in reference 8.

Table 1
THE STUDENT ALCOHOL QUESTIONNAIRE[®]
PART B: KNOWLEDGE

We would like to ask you some information about alcohol.

The questions will either be True or False. If you do not know the answer to the question DO NOT GUESS. Mark a line in space "e".
If you think the answer is True, mark the "a" for true.
If you think the answer is False, mark the "b" for false.
If you do not know the answer, mark the "e".

Mark on your IBM answer sheet, beginning with question 1.

1. Wines are made by fermenting grains. (f)
2. It is estimated that approximately 85% of the adult Americans who drink misuse or abuse alcoholic beverages. (f)
3. In America drinking is usually considered an important socializing custom in business, for relaxation, and for improving interpersonal relationships. (t)
4. Gulping of alcohol beverages is a commonly accepted drinking pattern in this country. (f)
5. Alcoholic beverages do not provide weight increasing calories. (f)
6. Alcohol is not a drug. (f)
7. A blood alcohol concentration of .1% is the legal definition of alcohol intoxication in most states in regards to driving. (t)
8. Approximately 10% of fatal highway accidents are alcohol related. (t)
9. Eating while drinking will have no effect on slowing down the absorption of alcohol in the body. (f)
10. A person cannot become an alcoholic by just drinking beer. (f)
11. It takes about as many hours as the number of beers drunk to completely burn up the alcohol ingested. (t)
12. Many people drink to escape from problems, loneliness, and depression. (t)
13. Distilled liquors usually contain about 15-25% alcohol by volume. (f)
14. A blood alcohol concentration of .02% usually causes a person to be in a stupor. (f)
15. Drinking milk before drinking an alcoholic beverage will slow down the absorption of alcohol into the body. (t)
16. A 150-pound person, to keep his blood alcohol concentration below the legally intoxicated level, means that he would have to drink less than 3 beers in one hour. (f) *(sic)*
17. Responsible drinking can result in relaxation, enhanced social interactions, and a feeling of well-being. (t)
18. An ounce of whiskey contains about 60 calories. (f)
19. Many people drink for social acceptance, because of peer group pressures, and to gain adult status. (t)
20. Proof on a bottle of liquor represents half the percent of alcohol contained in the bottle. (f)
21. There is usually more alcoholism in a society which accepts drunken behavior than in a society which frowns on drunkenness. (t)
22. Table wines contain about 8-14% alcohol. (t)
23. Wines throughout history have been commonly drunk at religious ceremonies and family gatherings. (t)
24. Liquor taken straight will affect you faster than liquor mixed with water. (t)
25. The most commonly drunk alcoholic beverages in the United States are distilled liquors (whiskey, gin, vodka). (f)
26. To prevent getting a hangover one should sip his drink slowly, drink and eat at the same time, space drinks over a period of time, and don't over drink for your limit. (t) *(sic)*
27. Moderate consumption of alcoholic beverages is generally *not* harmful to the body. (t)
28. The United States lacks a national consensus on what constitutes the responsible use of alcoholic beverages. (t)
29. Liquor mixed with soda pop will affect you faster than liquor drunk straight. (f)
30. Alcohol has only been used in a very few societies throughout history. (f)
31. Liquors such as gin, scotch, and whiskies are usually distilled from mashes made from fermenting grains. (t)
32. Beer usually contains from 2-12% alcohol. (t)
33. Drinking of alcoholic beverages has been common in the U.S.A. since the Puritans first settled here. (t)

Table 1. (Continued)

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- | |
|--|
| 34. Drinking coffee or taking a cold shower can be an effective way of sobering up. (f) |
| 35. Alcohol was used for centuries as a medicine in childbirth, sedation, and surgery. (t) |
| 36. Alcohol is usually classified as a stimulant. (f)* |
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The knowledge part of the instrument is included in Table 1, and its use is encouraged for pre-course evaluations and for campus alcohol education program planning.

In the administration of the test for the study, students were directed to answer each question on a commonly used IBM five-stem answer sheet. They were asked to mark either "True," "False," or "Don't Know." The directions for completing the questionnaire called for anonymous responses so as to minimize either "faked good" or "faked bad" answers.

Eleven demographic variables which have been found to be related to drinking were also included in the instrument.(17) Content validity was obtained by having a panel of individuals presently working in the field of alcohol education and research* comment on various items and questions under consideration for the instrument. A questionnaire was then assembled and presented to a group of students for comments and suggestions. The questionnaire was revised and again submitted to the students for final evaluation.

The questionnaire was administered to 122 students initially and then one month later. The test-retest reliability of the questionnaire was .79. Also, the Kuder-Richardson reliability of the questionnaire was found to be .79 for the total sample of 1,128 students.

Results

The respondents (1,128 students) had the following demographic characteristics: 48.1 % were males and 51.9% females, 79.3% whites, 17.2% blacks and 3.7% included Orientals, Spanish Americans, American Indians and other racial groups; 34.6% were freshmen, 22.2% sophomores, 21.5% juniors, and 17.5% seniors and 3_6% other class levels; 51.5% were from home communities less than and 48.5% from communities greater than 50,000 people; 71.4% reported that their parents belonged to religious organizations which permitted drinking, while 14.4% were from backgrounds which did not, and 14.2% indicated "other" religious groups.

Mean Scores for Questionnaire

Out of 36 possible correct answers the total group obtained a mean score of 20.08 which represented 56% or a little over one-half of the questions being answered correctly. Many students adhered to common myths about alcohol. Approximately 32% subscribed to the myth

that alcohol is a stimulant; 48% thought if one mixed distilled liquor with soda pop it would affect one faster than if the liquor had been drunk straight and unmixed; and 48% thought that drinking coffee or taking a cold shower was an effective way of sobering up.

*Appreciation is expressed to R. F. Borkestein, H. C. Jones, H. Seffrin, S. C. Wilsnack for assistance with developing the questionnaire and to T. A. Baumgartner and P. Frye for assistance in the research design.

There were many misconceptions concerning the action of alcohol on the body or facts about beverages. About 81 % of students did not know that the legal definition for intoxication in most states regarding driving was 0.1 % Blood Alcohol Concentration (BAC). Sixty-two percent did not know that proof on a liquor bottle represents twice the percent of alcohol in the product; and about 60% did not know that drinking milk or eating before consuming an alcoholic beverage could slow down the absorption of alcohol.

These results appear to confirm the opinions of faculty and student health and counseling personnel that there is indeed, among college students, a lack of knowledge about alcohol and its effects. It also appears to indicate that past efforts of alcohol education have been fairly fruitless.

Demographic Information and Mean Scores

To determine possible relationships of knowledge scores to demographic characteristics, the scores were divided into approximately one-half standard deviation interval levels on either side of the mean. The mean score was 20.2 and the standard deviation was 5.4. Chi-square analysis of these different interval levels with the various demographic variables was then employed. (See Table 2.)

Sex

The data appear to indicate that there is a highly significant ($p < .0001$) relationship between scores and sex with a higher percentage of male students scoring above the mean than female students. This may mean that in classes or schools primarily composed of female students, more emphasis should be placed on information about alcohol due to their apparent greater lack of knowledge about the subject.

Class

There appears to be a slight significant relationship between class level and alcohol knowledge scores with a trend for more juniors and seniors to obtain more of the higher scores than freshmen and sophomores. Perhaps students do learn some information from college classes and the college experience about drinking. As part of planning health education courses dealing

with alcohol, it might be important to determine the class level breakdown so as to include more information for classes containing many freshmen and sophomores.

GPA

Chi-square analysis of the scores and grade point average (GPA) do not appear to indicate a significant relationship. However, if one examines the scores, there does appear to be a trend for the students with the higher GPA's to obtain the higher scores and the students with the lower GPA's to obtain the lower scores.

Race

When Chi-square analysis is accomplished with the score intervals and race, there appears to be a highly significant relationship ($p < .001$) between scores and race with a much higher percentage of white students obtaining scores above the mean than black students. Perhaps classes or schools with a majority of black students should make an extra effort to include factual information concerning drinking and alcohol to help increase the knowledge level of alcohol among black students.

Table 2
CHI SQUARE RESULTS OF DEMOGRAPHIC VARIABLES AND INTERVAL SCORES OF THE KNOWLEDGE AND ALCOHOL AND DRINKING

	N	Rounded mean score	Score interval					
			Under 14	14 to 16	17 to 19	20 to 22	23 to 25	26 and above
Sex*								
Males	508	21%	8%	9%	17%	24%	21%	21
Females	610	19	13	18	19	23	16	11
Class #								
Freshmen	380	20	11	11	21	26	19	12
Sophomores	250	19	12	20	19	19	17	13
Juniors	246	20	13	13	15	23	18	18
Seniors	199	21	8	10	17	26	19	20
GPA								
4.0	56	21	7	13	27	13	27	13
3.5	288	21	9	14	14	25	22	17
3.0	425	20	11	14	17	23	19	16
2.5	273	20	12	13	21	24	15	15
2.0	61	18	19	19	22	19	12	9
<2.0	14	18	21	7	29	29	7	7
Race*								
White	887	21	5	12	19	25	21	18
Black	194	16	34	19	20	14	9	4
Religion								
Roman Catholic	295	21	7	14	16	26	21	16
Jewish	75	21	4	10	24	18	28	16
Protestant (allows drinking)	422	20	8	16	18	23	16	19
Protestant (does not allow drinking)	166	19	19	12	17	25	18	9
None or other	162	19	20	15	20	19	15	11
Total Group	1128	20	11%	14%	18%	23%	19%	15%

* $p < .0001$

$p < .02$

Religion

Chi-square analysis of scores and religion indicate a significant ($p < .001$) relationship. A greater percentage of students with a background of Roman Catholicism, Judaism, or Protestantism, which allow drinking, appear to have higher scores than students from backgrounds which do not allow drinking or who indicated "other" or "none." It might be noted that many students who checked "other" also wrote in Mormon, Pentecostal, Mohammadism, and other nondrinking religious affiliations.

Summary and Recommendations

Many college educators and staff feel that students have a minimal amount of information concerning the effects of alcohol and that students subscribe to a variety of drinking myths which could cause irresponsible drinking or lead to alcohol abuse or alcoholism. Gathering information about students' knowledge of alcohol is important to aid in planning alcohol education programs at the college level.

The results of this study appear to confirm the opinions that factual information held by students concerning alcohol and drinking is lacking. In relating knowledge scores to various demographic characteristics, it was found that there were significant differences in several variables. Males, whites, students with religious backgrounds which allowed drinking, and upperclassmen were found to have significantly higher scores on the knowledge questionnaire than females, blacks, students with religious backgrounds which did not allow drinking, and lower classmen.

It is recommended that in classes or schools containing mainly females, blacks, or lower classmen students, extra effort be made to help these groups obtain a greater understanding about alcohol and drinking.

It is also recommended that campus alcohol awareness programs include factual information as part of their program so as to increase the students' general knowledge about alcohol and to give them basic facts for making responsible drinking decisions.

Before a campus program is planned, a campus survey needs to be done to determine the level of knowledge concerning alcohol and drinking, along with the usual behavior questionnaires to obtain baseline data for the campus. Areas in which there is much misinformation should then be emphasized in the program to eradicate erroneous myths and to help the students gain a better understanding about alcohol and its effects.

It is also suggested that more research be done in the area of college students' alcohol knowledge, attitudes, and behaviors in order to help students make responsible choices concerning alcohol and to become responsible drinkers if they choose to drink.

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