
Screening for Harmful and Hazardous Drinking by Chiropractic Students

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Objective: The purpose of this study was to determine the percentage of chiropractic students who exhibit hazardous and harmful alcohol behavior. **Method:** The preintern students of Los Angeles College of Chiropractic, Southern California University of Health Sciences, were surveyed with the Alcohol Use Disorders Identification Test (AUDIT). **Results:** Of the 287 students, 225 (78.4%) completed the AUDIT survey. Scores from the AUDIT showed that 20.3% scored 8 or more, which indicates hazardous and harmful drinking. There was a significant relationship for male students. Those at risk were more likely to spend more money on a night out drinking. **Conclusions:** One-fifth of chiropractic students surveyed exhibited hazardous and harmful drinking behaviors. Alcohol prevention and awareness should be presented to chiropractic students for personal and professional growth. (The Journal of Chiropractic Education 19(2):85-91, 2005)

Key words: alcohol, alcohol drinking, alcoholism, AUDIT, chiropractic student

INTRODUCTION

Binge drinking is defined as the consumption of five drinks in a row for men or four drinks in a row for women in the past 2 weeks (1). Using this criterion, approximately two in five (44.4%) college students reported binge drinking in 2001. College students consume at the five-drink level more often than age-matched peers who do not attend college (1,2). Statistics taken from the National Highway Traffic Safety Administration and the Centers for Disease Control show the magnitude of the problem (see Table 1). There is an urgent need for expanding prevention and treatment programs to reduce alcohol-related harm among U.S. college students (3). One in five drinkers reported experiencing five or more problems related to their alcohol use in the previous 30 days (1).

A survey of 14,000 students at 119 4-year U.S. colleges reported 31% met the DSM-IV criteria for alcohol abuse and 6% for alcohol dependence (4). Recognizing binge drinking as a national health problem, the U.S. Surgeon General and the U.S. Department of Health and Human Services have established in *Healthy People 2010* the goal of reducing heavy episodic or binge drinking among college students (5). This comes at a time when extreme drinking style (four or more drinks on an occasion) has significantly increased from 1993 and 2001 (6).

The consequences of alcohol abuse during college years do not end with graduation. Bennett et al., with three age cohorts (ages 18–25, 21–28, 24–31) of 1,073 subjects, showed most young adults displayed continuity of problem behaviors associated with their drinking patterns, particularly in males (7). Memberships with fraternities and sororities (Greek) have been shown to be associated with heavy alcohol use during college; however, Greek affiliation is not predictive of postcollege heavy drinking 1 year after college (8).

Table 1. Consequences of College Drinkers

Death. 1,400 college students between the ages of 18 and 24 die each year from alcohol-related unintentional injuries.

Injury. 500,000 students between the ages of 18 and 24 are unintentionally injured under the influence of alcohol.

Assault. More than 600,000 students between the ages of 18 and 24 are assaulted by another student who has been drinking.

Unsafe Sex/Sexual abuse. 400,000 students between the ages of 18 and 24 had unprotected sex and more than 70,000 students are victims of alcohol-related sexual assault or date rape.

Academic Problems. About 25% of college students report academic consequences of their drinking, including missing class, falling behind, doing poorly on exams, and receiving lower grades overall.

Health Problems/Suicide Attempts. More than 150,000 students develop an alcohol-related health problem and between 1.2% and 1.5% of students indicate that they tried to commit suicide within the past year due to drinking or drug use.

Drunk Driving. 2.1 million students between the ages of 18 and 24 drove under the influence of alcohol and over 3 million rode with a drinking driver last year.

Alcohol Abuse and Dependence. 31% of college students met criteria for a diagnosis of alcohol abuse.

In medical schools the pattern of use persists. In the United Kingdom, 45% of 1-year medical students ($n = 194$) reported drinking above the recommended limits for alcohol consumption (21 units for men and 14 units for women, per week) (9). Associated with the use of alcohol were problem behaviors such as missing study, becoming sexually involved, and getting into physical fights or arguments. Another study had similar findings in that 53% of men and 51% of women exceeded the recommended safe weekly limits of alcohol (10). Subjectively, the students reported that their performance had been affected on at least one occasion by binge drinking. Interestingly, high scores for anxiety and depression did not correlate with high levels of alcohol intake.

At issue in health care is not only the concern for the provider, but also the health of the patients cared for by those having harmful and hazardous drinking behavior. It is not known if alcohol behavior and

use transfer to other health care universities such as chiropractic. The purpose of this study was to determine the use of alcohol by chiropractic students.

METHODS

A cross-sectional study was conducted in the fall of 2001 with a sample of the 287 preintern students at Los Angeles College of Chiropractic, Southern California University of Health Sciences. The students attending class in terms 1–7 on the day of administration were asked to participate. They were instructed that the purpose of the screening was part of the health promotion event on alcohol awareness and the results were to determine alcohol behavior. They were further instructed that agreement to participate was voluntary and would not affect any course grade.

The survey instrument used for the study was the Alcohol Use Disorders Identification Test (AUDIT), a 10-item screening instrument developed by the World Health Organization (WHO) (Table 2). The AUDIT incorporates questions about drinking quantity, frequency, and binge behavior along with questions about consequences of drinking. Each choice is assigned a numerical value from 0 to 4. Totaling the points for all answers (range, 0–40) arrives at the total score. A cutoff score of 8 was used, which has been shown to have high sensitivity (92%) and specificity (94%) for harmful and hazardous drinking (11–13). Additional demographic information was collected.

The AUDIT scores were compared to age, trimester of enrollment, and gender. AUDIT data were treated categorically, with scores below 8 as low risk and scores 8 or greater as high risk. Age data were treated categorically, distributed into ranges of 20–25, 26–30, 31–35, 36–40, and 41 or greater. All comparisons between AUDIT scores and demographic data utilized the chi-square test.

RESULTS

Of the 287 students eligible to participate, 225 (145 men, 69 women, and 11 without stated gender) completed the survey, for a response rate of 78.4%. Demographic data including age, sex, and current enrollment are available in Table 3.

Results of the AUDIT survey showed that 48 students (21%) scored 8 or more for hazardous

Table 2. Alcohol Use Disorders Identification Test

The following questions are about the past year:	Score
1. How often do you have a drink containing alcohol?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Monthly	1
<input type="checkbox"/> 2 to 4 times a month	2
<input type="checkbox"/> 2 to 3 times per week	3
<input type="checkbox"/> 4 or more times a week	4
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	
<input type="checkbox"/> None	0
<input type="checkbox"/> 1 or 2	1
<input type="checkbox"/> 3 or 4	2
<input type="checkbox"/> 5 or 6	3
<input type="checkbox"/> 7 or 9	4
<input type="checkbox"/> 10 or more	5
3. How often do you have six or more drinks on one occasion?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
4. How often during the last year have you found that you were unable to stop drinking once you had started?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
<input type="checkbox"/> Never	0
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2

(Continued)

Table 2. (Continued)

<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
9. Have you or someone else been injured as the result of your drinking?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4
10. Has a relative, friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?	
<input type="checkbox"/> Never	0
<input type="checkbox"/> Less than monthly	1
<input type="checkbox"/> Monthly	2
<input type="checkbox"/> Weekly	3
<input type="checkbox"/> Daily or almost daily	4

Table 3. Group Demographics

Demographic data	Frequency	Percent
Term		
1	61	27
3	29	13
4	59	26
6	38	17
7	38	17
Total	225	
Sex		
Male	145	64
Female	69	31
Missing	11	5
Total	225	
Age		
20–25	114	51
26–30	74	33
31–35	21	9
36–40	10	4
>41	6	3
Total	225	

Table 4. AUDIT Score 8 or Higher by Age

Age	AUDIT <8	AUDIT ≥8	Total
20–25			
Count	86	28	114
Percent within risk factor	49%	58%	51%
26–30			
Count	61	13	74
Percent within risk factor	35%	27%	33%
31–35			
Count	18	3	21
Percent within risk factor	10%	6%	9%
36–40			
Count	7	3	10
Percent within risk factor	4%	6%	4%
>41			
Count	5	1	6
Percent within risk factor	3%	2%	3%
Total count	177	48	225
	Value	df	Asymp. Sig. (2-sided)
Chi-square	2.480	4	.648

and harmful drinking. Chi-square tests showed no significant association between at-risk drinkers (as measured by 8 or higher score on AUDIT) and age or current term of enrollment (see Tables 4 and 5). There was, however, a significant association between gender and AUDIT at-risk drinkers. Findings indicate that almost 90% of at-risk drinkers were male (see Table 6).

No significant correlation was found between persons scoring 8 or greater (high risk) on the AUDIT survey and having a biological relative in

Table 5. AUDIT Score 8 or Higher by Term Enrollment

Term	AUDIT <8	AUDIT ≥ 8	Total
1			
Count	48	13	61
Percent within risk factor	27%	27%	27%
3			
Count	24	5	29
Percent within risk factor	14%	10%	13%
4			
Count	44	15	59
Percent within risk factor	25%	31%	26%
6			
Count	28	10	38
Percent within risk factor	16%	21%	17%
7			
Count	33	5	38
Percent within risk factor	19%	10%	17%
Total count	177	48	225
	Value	df	Asymp. Sig. (2-sided)
Chi-square	2.953	4	.566

Table 6. AUDIT Score 8 or Higher by Gender

Sex	AUDIT <8	AUDIT ≥ 8	Total
Male			
Count	103	42	145
Percent within risk factor	62%	89%	68%
Female			
Count	64	5	69
Percent within risk factor	38%	11%	32%
Total count	167	47	214
	Value	df	Asymp. Sig. (2-sided)
Chi-square	12.868	1	.000

the last two generations known to be an alcoholic. Figure 1 shows those who exhibit hazardous alcohol behavior were more likely to spend more money on a typical night out drinking compared with those falling in the nonhazardous behavior range.

DISCUSSION

The results suggest that hazardous and harmful drinking patterns are present in a postgraduate chiropractic university. The findings are similar to medical schools that have found nearly half of 1-year students' drink above the recommended limits. The rate for chiropractic students appears to be lower, but because different survey instruments were used, it is difficult to make accurate comparisons.

The location of student drinking has changed between 1993 and 2001, from on-campus parties at fraternities and sororities to attendance and heavy drinking at off-campus parties (6). Off-campus drinking is the more likely choice of chiropractic students who do not have an on-campus residence or Greek houses at the university where the study was conducted.

Like other alcohol surveys, male chiropractic students were more likely to exhibit hazardous and harmful drinking. This information must be interpreted with caution because there are significantly more male than female chiropractic students.

Chiropractic students rely on student loans to finance their education. Students not exhibiting hazardous and harmful drinking are not spending as much money on a typical night out not known how much money is saved over a 4-year period of chiropractic education for students who abstain or do not exhibit harmful behavior.

At the undergraduate level, efforts are being made for alcohol awareness and prevention. Students in 2001 were more likely to have attended lectures, meetings or workshops, and special college courses than in 1993 (6). The effectiveness of these programs has been questioned. Studies suggest that important components include how the information is delivered as well as the need for the program to be individualized (14,15). A multisite study of 94 institutions showed a decrease of binge drinking behavior by 33% using a three-construct binge drinking prevention model (16). The model specifically focused on changing the campus social environment with student participation, using educational and informational processes, and engaging in campus regulatory and physical change efforts.

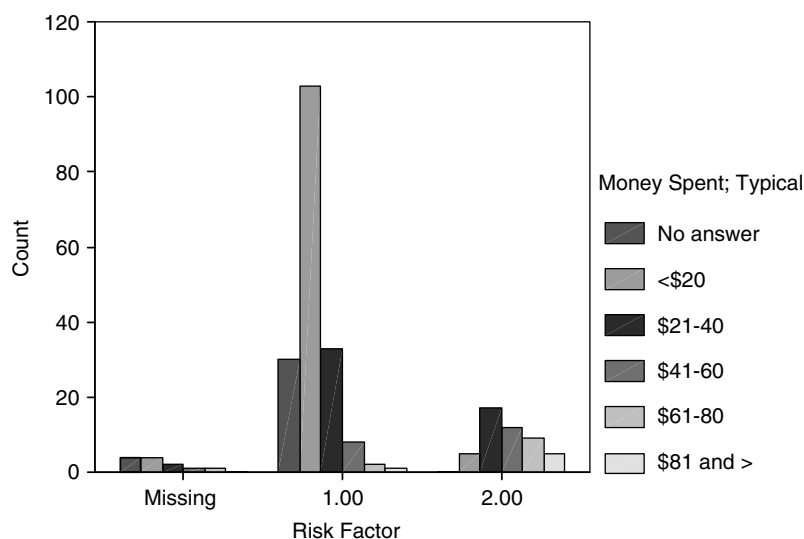


Figure 1. Money spent on typical night out.

All chiropractic colleges are members of the Association of Chiropractic Colleges and to date there have been no alcohol prevention programs collectively planned. Therefore, it is left to the individual colleges to implement any prevention programs. At the university where the survey was conducted, no formal prevention program has been implemented, but there has been an alcohol awareness campaign through student health services. Certainly, if the percentage of chiropractic students having harmful and hazardous alcohol behavior is correct, then there appears to be a need to provide educational opportunities. This not only would assist in improving understanding about their own behavior but may also be beneficial education for future health care practitioners.

The data presented in the current report should be interpreted with caution. A survey design is subject to sources of error from response distortion. It relies on the students truthfully answering the questions. Those not answering the survey were either not in class on the day of administration or declined. Their attitudes may be different than those participating in the study. The study cannot be generalized to all chiropractic students at all universities.

CONCLUSION

The present study is the first to report on the alcohol behaviors of chiropractic students. It has demonstrated that harmful and hazardous behavior at a postgraduate chiropractic university is similar

to that reported for undergraduate students and less than that reported for medical students. Future study should include students from other chiropractic colleges and universities.

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