



Distinguishing between Positive and Negative Social Bonding in Problem Drinking among College Students

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ABSTRACT

Background: To reduce problem drinking, interventions must be directed toward those factors associated with problem drinking. **Purpose:** This study examined how perceptions of the role of alcohol related to problem drinking among a convenience sample of 301 college students. **Methods:** Fifteen items concerned with drinking behavior or perceptions regarding the effects of alcohol and were subjected to factor and multiple regression analyses. **Results:** Three factors emerged: problem drinking, social bonding and sexual attractiveness. Adjusted multiple regression analysis by gender, using problem drinking as the dependent variable, indicated that for both males and females the perception that alcohol facilitates social bonding and the perception that alcohol enhances sexual attractiveness together accounted for a significant ($P < 0.0001$) amount of the variation in problem drinking ($R^2 = .312$ for females and $R^2 = .204$ for males) with social bonding as the more important factor ($R^2 = .283$ for females and $R^2 = .202$ for males). **Discussion:** Programs to address problematic drinking should consider incorporating strategies designed to: (1) help students identify ways to promote healthy social bonding, and (2) demonstrate that problem drinking can often be detrimental to social bonding. **Translation to Health Education Practice:** Health educators should help college students identify positive ways to promote social bonding that avoid problem drinking.

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BACKGROUND

In the United States, 71% of all deaths among youth and young adults ages 10-24 years result from only four causes: motor vehicle crashes (31%), other unintentional injuries (14%), homicide (15%), and suicide (11%).¹ Although many of these deaths are attributable to multiple causes, the use and misuse of alcohol has been conclusively linked to a long list of social problems (e.g., traffic fatalities, assaults, suicide), health problems (e.g., risky sexual behavior, illicit substance use, cancer, cirrhosis), as well as academic performance and job difficulties.²⁻⁹

Drinking among college students is a part of the college culture.¹⁰ Transitioning

away from the structure of the high school environment to the independent nature of the college environment can be stressful for students¹¹ thereby leading them to cope with the increased stress by misusing and abusing alcohol.^{12,13} During this transition, students continue on a trajectory of alcohol use,¹⁴ such that estimates suggest four out of five college students drink, and half of them engage in heavy episodic drinking.^{15,16} This “college effect,” or observed increase in alcohol use among drinkers during their college years, has led researchers to focus on the motives for the initiation and continuation of problematic alcohol use on American college campuses.¹⁷

Some of the issues related to problem drinking are: the definition and measurement of problem drinking, identification

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of risk factors for problem drinking and the development of intervention programs that reduce problem drinking and/or help students reduce the negative outcomes associated with problem drinking. This paper briefly reviews definitions and measurement of problem drinking, provides a brief review of related research that has identified risk factors for problem drinking, reports the results of a study conducted addressing two such factors and their relationship to problem drinking among college students and discusses how these results might be used to develop interventions to reduce problem drinking among college students.

PROBLEM DRINKING AMONG COLLEGE STUDENTS – DEFINITION AND MEASUREMENT

Problem drinking has been measured in various ways. However, data are most often collected by means of self-report, which has been shown to be a valid approach in previous research of alcohol use in college students.¹⁸ Examples include questionnaire items designed to elicit information: regarding the quantity and/or frequency of alcohol consumed; toward the number of standard drinks consumed in a given time frame (last week, last month) or typical time frame (in a typical week); concerning the number of days in a given frame on which alcohol was (or typically is) consumed; about the frequency with which the respondent has “gotten drunk;” and have sometimes also asked about the frequency of “binge drinking” or “heavy episodic drinking.”¹⁹

Because alcohol consumption among college students occurs most often within a social context,²⁰ measures of problem drinking may also include items which address the respondents’ perception of social norms that refer to the drinking behavior of close friends.^{21,22} Finally, because of the tendency of some to excuse their own negative behavior or the behavior of others, as simply a result of too much to drink, measures of problem drinking may address the respondents’ view of the responsibility of individuals for their behavior while under the influence of alcohol.

PSYCHO-SOCIAL RISK FACTORS FOR PROBLEM DRINKING

A number of psycho-social factors have been found to be related to problem drinking among college students. These include certain demographic factors. For example, male Anglo students seem to be at greatest risk for problem drinking.²³ Drinking experience prior to college has also been shown to be an important predictor of problem drinking among college students with earlier onset of drinking^{24,25} and occurrences of moderate to heavy drinking in high school¹⁴ related to increased drinking and drinking problems in college. In addition, several personality factors, such as sensation seeking,²⁶ neuroticism and extraversion,²⁷ depression²⁸ and anxiety disorders²⁹ have been shown to be risk factors for problem drinking among college students.

Some researchers have suggested that motives for drinking alcohol may be based on outcome expectations of drinking.³⁰ These motives may include: (1) enhancement motives (consuming alcohol to increase positive affect); (2) social motives (positive reinforcement based on social contingencies); (3) coping motives (to escape from negative affect); and (4) conformity motives (to avert rejection; negative reinforcement based on social contingencies).³¹ Specifically, enhancement motives and social motives have been shown to indirectly forecast negative alcohol related-consequences through the amount of alcohol consumed.^{32,33} When alcohol expectations are positive, it has been posited that individuals are more likely to consume alcohol in order to become more sociable, most likely to reduce social and sexual inhibitions.

Thus, the current study does not attempt to explain all of the variation in problem drinking among college students. Instead, it focuses on two specific factors: (1) perceptions/expectations of alcohol as a facilitator of social bonding, and (2) perceptions/expectations of alcohol as a facilitator of increased sexual attractiveness. Previous research has addressed both of these issues.

SEXUAL EXPECTATIONS AND SOCIAL MOTIVES FOR ALCOHOL CONSUMPTION

There is evidence that those who view alcohol as a mechanism for enhancing sexual attractiveness, sexual arousal, sexual pleasure, or as a means to reduce sexual inhibitions, experience more problem drinking behavior than those who do not have these expectations. For example, research suggests both men and women who have consumed moderate amounts of alcohol are more likely to rate opposite sex faces as more attractive when compared to ratings given by non-drinkers.³⁴ This effect has been demonstrated to be particularly strong, at least for men, as the perceived physical attractiveness of a potential sexual partner increases after consuming a moderate amount of alcohol (mean blood alcohol concentrations of approximately 0.05%).³⁵

Additionally, Carey’s³⁶ research involving college undergraduates revealed that the degree to which students expected alcohol use to contribute to sexual enhancement predicted the frequency of intoxication over a one month period. In not unexpected findings, researchers also identified one of the motives for participating in drinking games was the intent to get another player intoxicated in order to increase the chances of engaging in sexual intercourse.^{37,38} Additionally, researchers also found that among female college students who have experienced sexual victimization, there were also higher levels of both expectation of sexual enhancement from the use of alcohol and higher levels of alcohol use than among those who had not experienced sexual victimization.³⁹ Ham and Hope⁴⁰ concluded that while there is evidence of a relationship between sexual enhancement expectations and greater problem drinking, more research in this area is needed.

Thus, sexual enhancement expectations and social motives appear partially intertwined with the social bonding alcohol is perceived to afford users and the possibilities to influence sexual arousal/opportunities. For example, Johnson and Sheets⁴¹ examined college students’ motives for playing drink-



ing games and found what they referred to as “Competition and Thrills” accounted for the largest proportion of variance (34%) in motives in their model. Motives for playing drinking games involve complex social interactions ranging from intent to get another player intoxicated in order to increase chances of engaging in sexual intercourse^{37,42} to more positive interactions, such as fostering group cohesiveness and strengthening group bonds.^{43,44}

PURPOSE

The Johnson and Sheets⁴¹ study, when combined with other research, highlights an important gap in the extant problematic alcohol use literature among college students. This gap is the determination of which factor, social bonding or sexual arousal motives, account for greater variation in college students’ decisions to engage in potentially risky drinking. If these factors can be disentangled, then addressing the primary factor may be an important consideration in efforts to reduce problematic drinking. Therefore, the purpose of this study was to: (1) determine whether a set of social bonding and sexual factors explain a significant and substantial amount of the variation in problem drinking among college students, and (2) determine which factor, social bonding or sexual attractiveness, explains the greater amount of the variation in problem drinking.

METHODS

Participants

Undergraduate college students from a single southern university (n=301), who were taking health education classes, participated in this study. Because the sample is from one U.S. university, some demographic information concerning the general university student population is important. The referent university is a public four-year university, located in the southern United States, with a total enrollment of approximately 17,000. Undergraduates comprise 76% of the enrollment total. Approximately equal numbers of males (50.4%) and females

(49.6%) are enrolled. Caucasian students comprise just over 80% of the enrollment, followed by African Americans (5.7%) and international students (5.2%). The population also contains Asian/Pacific Islanders, American Indians, and Hispanics.

In this study, completed questionnaires were received from 301 students who were single and under the age of 25. Not all of these students indicated their race or gender. The study sample was proportionately similar to university wide figures with more females (N=174 -57.8% to 49.6%) and fewer males (N=127 -42.2% to 50.4%) than in the total university enrollment. Of those who indicated their race (N=288), the sample was 85.7 % (N=247) White (compared to 80% university wide), 9.7 % (N=28) African American (compared to 5.7% university wide), with Asian/Pacific Islanders, American Indians, Hispanics and international students also represented.

Instrumentation

The questionnaire used in this study included 15 items concerned with drinking behavior or perceptions regarding the effects of alcohol based on a review of literature and previous research. Problem drinking questions addressed frequency of drunkenness and overall frequency of drinking, as suggested by Dawson and Room,⁴⁵ as well as addressing drinking habits of friends²⁶ and individual responsibility for drinking. Sexual attractiveness questions addressed three “groups” – men, women and self. Social bonding questions addressed male, female and peer bonding, as well as having fun, and providing something to do. Items addressing sexual attractiveness and social bonding were from the Core Alcohol and Drug Survey, of which both scales have demonstrated adequate validity and reliability in previous research.⁴⁶ Specific psychometric data on the Alcohol and Drug Survey can be retrieved at: <http://core.siuc.edu>. Click on “Library” tab.

These 15 items were organized into three hypothesized scales. They included: (1) a seven-item “problem drinking” scale which consisted of six items designed to elicit in-

formation concerning personal drinking behavior, two items regarding friends’ drinking behavior and one item concerning personal values concerning the use of alcohol; (2) a five-item “social bonding” scale which consisted of items designed to elicit information concerning perception of the role alcohol plays in facilitating social interactions; and (3) a three-item “sexual attractiveness” scale which consisted of items designed to elicit information concerning perception of the role alcohol plays in making people more sexually appealing.

Response options for items comprising the problem drinking scale differed by item. “Have you ever gotten drunk?” was scored “Yes” = 1, “No” = 0. Items referring to the “Number of times – drunk in last 12 months, in last month drank alcohol, drunk in the last month” were scored “0 times” = 0, “1-2 times” = 1, “3-9 times” = 2, “10-19 times” = 3, “20 or more times” = 4. Items referring to the “Number of friends who get drunk – once in a while, almost every weekend” were scored “None” = 0, “One or two” = 1, “Some (more than 2)” = 2, “Most of them” = 3. “The value you hold for yourself regarding the use of alcohol” was scored “Drinking is never a good thing to do” = 0, “Drinking is all right, but you should not get drunk” = 1, “Getting drunk is ok as long as it does not interfere with grades or responsibilities” = 2, “Getting drunk is ok even if it does occasionally interfere with grades or responsibilities” = 3. Prior to any other analyses scores for all items in the Problem Drinking factor were converted to standard scores.

All items for the social bonding and sexual attractiveness factors were scored “Yes” = 2, “No” = 1. Scores for each of the three scales were calculated by summing the responses for the items comprising the respective scales. All items for all three scales are shown in Table 2.

PROCEDURE

Students voluntarily completed the questionnaire in their regular classroom setting anonymously with participation close to 98%. Data were analyzed using SAS version 9.1. In addition to frequency counts, explor-



atory factor analysis was used to confirm the existence of three factors: (1) a “problem drinking” factor, (2) a “social bonding” factor, and (3) a sexual attractiveness factor. For these analyses, Kaiser’s eigenvalue rule of 1⁴⁷ and Cattell’s⁴⁸ scree test established factor extraction criteria. Multiple regression was used to determine whether the social bonding and sexual attractiveness factors accounted for a statistically significant and substantial amount of the variation in problem drinking. The University’s Institutional Review Board approved the study prior to the beginning of data collection.

RESULTS

Demographics

Results from Table 1 indicate that among female students, 134 (77.5%) reported having ever been drunk, 39 (22.5%) reported having been drunk more than 20 times in the last year, and 86 (49.7%) indicated that they had been drunk in the last month. For male students, 108 (85.7%) reported having ever been drunk, 58 (46.0%) reported having been drunk more than 20 times in the last year, and 82 (66.3%) indicated that they had been drunk in the last month.

Factor Analyses

To assess scale construct validity, the 15 items concerned with drinking and perceptions of alcohol were entered into a factor analysis, with a varimax (orthogonal) rotation. Construct validity measures the underlying concepts of a scale and whether items composing that scale act in predictable manners toward each other. The hypothesis was this factor analysis would yield three factors, one concerned with problem drinking, a second factor related to alcohol’s influence on social bonding, and a third factor related to sexual attractiveness. Using an eigenvalue cut-off of 1.0 and requested scree plot, these three factors were identified. A series of three confirmatory factor analyses were then conducted to confirm the existence of a seven item problem drinking factor, a five item social bonding factor, and a three item sexual attractiveness factor resulting in a simple factor structure (i.e., items loaded

Table 1. Frequency Counts: Alcohol Behavior By Gender

Variable	Males	Females
Ever Been Drunk		
Yes	108 (85.7%)	134 (77.5%)
No	18 (14.3%)	39 (22.5%)
Number of Times Drunk in Last Year		
Zero	27 (21.4%)	48 (27.8%)
1 to 2	15 (11.9%)	23 (13.3%)
3 to 9	10 (7.9%)	33 (19.1%)
10 to 16	16 (12.7%)	30 (17.3%)
20 or more time	58 (46.0%)	39 (22.5%)
Number of Times Drunk in Last Month		
Zero	44 (34.9%)	87 (50.6%)
1 to 2	21 (16.7%)	31 (17.9%)
3 to 9	37 (29.4%)	36 (20.8%)
10 to 16	14 (11.1%)	17 (9.8%)
20 or more time	10 (7.9%)	2 (1.2%)

Table 2. Factor Loadings for Problem Drinking, Social Bonding and Sexual Attractiveness

Factor and Factor Items	Factor Loadings	
Problem Drinking Factor	Exploratory	Confirmatory
Have you ever gotten drunk?	0.615	0.651
Number of times drunk in last 12 months	0.895	0.921
Number of times in last month drank alcohol	0.841	0.839
Number of times drunk in last month	0.851	0.842
Number of friends who get drunk once in a while	0.637	0.697
Number of friends who get drunk almost every weekend	0.740	0.774
The value you hold for yourself regarding the use of alcohol	0.635	0.735
Social Bonding Factor	Exploratory	Confirmatory
Alcohol facilitates a connection with peers	0.886	0.884
Alcohol facilitates male bonding	0.908	0.915
Alcohol facilitates female bonding	0.736	0.810
Alcohol allows people to have more fun	0.632	0.734
Alcohol gives people something to do	0.769	0.794
Sexual Attractiveness Factor	Exploratory	Confirmatory
Alcohol makes women sexier	0.701	0.807
Alcohol makes men sexier	0.854	0.826
Alcohol makes me sexier	0.842	0.853



on only one factor). All items for all factors loaded at .61 or above (Table 2).

Reliability

Internal consistency reliability measures the homogeneity of items comprising a specific scale. Scale internal consistency reliability estimates for the subscales (Table 2) were all acceptable at .89 (problem drinking), .88 (social bonding) and .77 (sexual attractiveness).

Regression Analysis

Multiple regression was used to determine whether the social bonding factor and sexual attractiveness factor accounted for a significant and substantial amount of the variation in scores for the problem drinking factor. Separate analyses were conducted for males and females. Results indicated that for both males and females, the two predictor variables together accounted for a significant ($P < 0.001$) amount of the variation in problem drinking ($R^2 = .385$ for females and $R^2 = .235$ for males). Social bonding was the more important of the two predictor variables ($R^2 = .359$ for females and $R^2 = .232$ for males). As Table 3 shows, sexual attractiveness accounted for a small ($R^2 = .096$) but statistically significant ($P = 0.008$) amount of the variation in problem drinking for females, but not for males ($R^2 = .057$, $p = .524$).

DISCUSSION

This study focused on the relationship of problem drinking to two factors, social bonding and sexual attractiveness. Of the two factors, results, for both males and females, indicated social bonding was the more important predictor. Sexual attractiveness did account for a small, but statistically significant amount of the variation in problem drinking for females. The relationship between the sexual attractiveness factor and problem drinking was non-significant for males. It is not clear why the sexual attractiveness factor played a role in problem drinking for females, but not for males. While there is research that provides evidence indicating those who expect alcohol to enhance sexual attractiveness or sexual

Females			
F = 53.28		P ≤ 0.0001	
		R ² = 0.385	
Variable	t	P	R ²
Social Bonding	-8.94	< 0.001	.359
Sexual Attractiveness	-2.70	0.008	.096
Males			
F = 18.60		P ≤ 0.0001	
		R ² = 0.235	
Variable	t	P	R ²
Social Bonding	-5.30	<0.001	.233
Sexual Attractiveness	-0.64	0.524	.057

expectations are more likely to consume greater amounts of alcohol,^{36-38,40} the results of this study do not provide strong support for that position. Because greater, and more direct, negative outcomes are associated with consuming alcohol to increase the chances of engaging in sexual intercourse,⁴¹ this appears to be a positive finding.

The results did show that the perception of the role alcohol plays in facilitating social bonding was related to problem drinking. Consistent with Copper and colleagues³² and Read and coworkers³³ research, social bonding accounted for more of the variation in problem drinking for females ($R^2 = .359$) than for males ($R^2 = .232$). Because negative outcomes are also indirectly associated with social motives (i.e., bonding), depending, in part, on the quantity of alcohol consumed,^{32,33} study findings suggest that programs to reduce the harm associated with problem drinking may wish to address the issue of alcohol and social bonding.

It seems prudent for practitioners to educate students on the biphasic effect alcohol consumption produces. This effect differentially influences one's subjective experience, cognition and behavior in any discussion of alcohol and social bonding. Alcohol is a central nervous system depressant. Light-to-moderate consumption of alcohol depresses inhibitions that individuals tend to

experience as a "stimulant" effect of alcohol, producing feelings of positive affect which result in greater sociability for most. Increased consumption results in greater blood alcohol levels, with individuals experiencing sedative effects.^{49,50} However, inexperienced drinkers may incorrectly perceive that by increasing the intake of alcohol, the initial stimulant effect of alcohol (and subsequent sociability) can be maintained for longer periods of time. This is highlighted in recent research where students reported that the quantity of alcohol consumed was positively related to enjoyment.⁵¹ Unfortunately, the initial euphoria and sociability decrease as individuals move toward the sedative, descending limb of the blood alcohol curve, which may result in decisions that involve less extensive cognitive processing.³⁵

Limitations

Interpretation of these results should take the limitations of the study into account. Participants consisted of a convenience sample of undergraduate college students enrolled in health science classes at one university, but an analysis of the demographics of the larger university suggest the sample is relatively representative. Although the study was based on self-report data and may carry the limitations often associated with this approach to data collection, recent research suggests self-report to be a valid approach



for data collection of alcohol use in college students.¹⁶ The study only included students who were not married because of concern that scores for the study variables might be influenced by marital status. The study did not, however, address whether scores for the problem drinking, social bonding and sexual attractiveness variables differed by students' dating/relationship status.

Additionally, some of the individual items used in the three scales had "yes-no" response options. It may have been an advantage to have used a four-point scale rather than "yes-no" scale. It would have increased the potential variability of the responses and may have done a better job of explaining variation in the dependent variable (problem drinking). Even so, the social bonding scale did account for a significant and substantial amount of the variation in problem drinking. Finally, the current study was cross-sectional. Thus, social bonding was identified as an important correlate, rather than antecedent, of problem drinking behavior. In spite of the limitations associated with the study, these results do provide insight into the role social bonding and sexual motivation may play in problem drinking among college students.

TRANSLATION TO HEALTH EDUCATION PRACTICE

The results of this study carry several implications for health education practice. First, concerned college personnel, including health education faculty and campus health promotion staff, should help emerging adults identify positive ways to promote social bonding that avoid problem drinking (or avoid alcohol altogether). For example, Murphy et al.⁵¹ found that students who reported engaging in alcohol-free activities that included peers or dates, found these to be more enjoyable than solitary activities. They also found that students reported alcohol-free activities, such as socializing with friends at restaurants, and other creative activities, could be just as enjoyable as drinking.

Social bonding can take many forms, and groups of friends may interact differ-

ently, depending on the social situation that bonds the group. As a result, different patterns of behavior and expectations may be established and promoted as socially acceptable among various groups of students. For instance, assisting students in examining and distinguishing between "true friends" and "drinking buddies" may carry many advantages, as prior research has demonstrated that changing relationships and priorities are central to why students cease to engage in problem drinking.⁵² Thus, students could be challenged, within a health education course, to analyze the reasons for engaging in various social relationships among groups of friends, to help discover the underlying bonding issue. Students could then be challenged to question how these various friendships contribute to their personal goals and ambitions to facilitate change among emerging adults. Campus health promotion programs can contribute to this message by emphasizing healthy social bonding takes place in situations where no alcohol or low levels of alcohol are consumed.

Second, helping students realize that problem drinking can often be detrimental to social bonding seems especially important. Drunken behavior can be disruptive to both the user and those related to the user. These disruptions can range from alcohol-fueled aggression and sickness to poor academic performance to unwanted sexual advances and experiences.^{9,53,54} Moreover, students might not be aware that enabling behaviors such as caring for friends who have been drinking or driving in a car with someone who has been drinking may inhibit positive social bonding by allowing the dysfunctional behavior to continue. Both classroom health education instruction and campus health promotion programs should encourage students to examine whether high levels of alcohol consumption and problem drinking actually makes positive contributions to those social relationships that they will most value in the future.

Based on the results of this study, it appears that the perception of the role of alcohol in facilitating social bonding accounts is a significant correlate of problem drinking

among college students, accounting for a substantial amount of the variation in both male and female problem drinking. Future research should determine whether social bonding is a significant antecedent of problem drinking behavior. In addition, future research should examine the impact of interventions that attempt to reduce problem drinking by (1) addressing the relationship of problem drinking and social bonding and (2) promoting participation and enjoyment in alcohol-free activities.

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