

Drunk in Public, Drunk in Private: The Relationship Between College Students, Drinking Environments and Alcohol Consumption

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Abstract: This study examines environmental differences in public (bars) and private (parties) drinking settings among of-age (21 and up years of age) and underage (18–20 years of age) college students attending college near the US/Mexico border. A random telephone survey of graduate and undergraduate students attending two large public universities in the southwestern United States was conducted during the 2000–2003 academic years. A university-based social science research laboratory conducted the telephone interviews with respondents who reported an occasion in the past 28 days where alcohol was being consumed (N = 4,964). The data were analyzed using ordinary least squares multiple regression. The results suggests that drinking settings contributed to the amount of alcohol consumed by respondents. Additionally, environmental factors contributing to drinking vary by setting. In general, having many people intoxicated at an event, BYOB parties, playing drinking games, and having illicit drugs available contribute to heavier drinking.

Keywords: Environment, alcohol, bars, parties

Drinking occurs frequently within the college environment. Johnson and associates (1) reported 87.3% of college students had tried alcohol while

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nearly 50% reported engaging in heavy drinking in the past year (1–4). Such heavy use can result in a variety of negative consequences, ranging from mild problems such as hangovers to severe problems such as suicide attempts and death (3). Although mild problems like hangovers are most common (5), the heavy use of alcohol among college students has been estimated to result in approximately 1,400 deaths and another 500,000 alcohol-related traumas each year (6).

Straus and Bacon (7) were the first to find that college students drank frequently in both public (bars) and private (apartments) settings in their study of college drinking habits. Almost a half-century later, at the aggregate level, student drinking events are almost evenly distributed between bars and private parties (8, 9). Such contexts are particularly common among heavier drinkers (10).

Although some researchers have examined environmental predictors of heavy drinking events reported by college students, little is known about how environmental factors related to drinking in bars and parties might vary—both within and between settings. In an earlier study (11), for instance, we identified the following as predictive of heavy episodic drinking events: having many people intoxicated at the drinking event, having illicit drugs available at the event, “bring your own beverage” (BYOB) events, and the playing of drinking games at the event. Our analyses, however, did not focus on the differences among settings as they related to heavy drinking. It is likely that bars and parties have unique environmental characteristics that relate to alcohol consumption.

The relative influence of environmental setting as it relates to drinking is confounded by the minimum legal drinking age (MLDA) in the United States. In a traditional college-aged population (18–22 years), over half of all students would be too young to legally consume alcohol. Given this, the type of setting (i.e., bar or party) frequented by students is likely to be influenced by age; students under 21 years of age would be most likely to attend parties and least likely to patronize bars. Fraudulent identification cards and/or proximity to either of the United States’ borders (the legal drinking age in Mexico is 18 and age 19 in some of Canada’s provinces), however, would give under-age students at least limited access to public drinking establishments. Of age students theoretically can attend bars or parties.

College drinking environments located on the US/Mexico border may be particularly wet drinking environments. Along these border communities there are bars that actively promote heavy consumption to underage drinkers (12). Romano and associates (13) indicated that bars in Mexico attempt to attract customers by displaying drink discounts such as “All You Can Drink” or themed nights as “College Night,” that offers single drinks priced as low as 25 cents each.

McKinnon and associates (14) identified that 75% of the college students in El Paso, Texas who had reported ever consuming alcohol admitted to drinking in Juarez, Mexico. Lange and Voas (12) found that more than 35% of all 21–25 year-old pedestrians and 30% of all 18–20 year-old pedestrians returned to the United States from Tijuana, Mexico with a blood alcohol concentration in excess of 0.08. Similarly, Meritz (15) indicated approximately 40% of all 18–20 year-olds returned to the United States from Juarez, Mexico with a blood alcohol concentration above 0.08. In another study, San Diego area students reported approximately 6.5 trips across the Tijuana, Mexico boarder to drink during the past year and indicated that they consumed greater amounts of alcohol when drinking in Mexico (more than 6 drinks) than when drinking in the United States (4.5 drinks) (16).

This study builds on the above literature by examining environmental differences in public (bars) and private (parties) drinking settings among of-age (21 and up years of age) and underage (18–20 years of age) college students attending college near the US/Mexico border. This unique setting allows us to examine public (bars) drinking environments even among students under age-21, and thus provides a more general comparison between these contexts and private parties by age.

METHODS

A random telephone survey of graduate and undergraduate students attending two large public universities in the southwestern United States was conducted during the 2000–2003 academic years. A university-based social science research laboratory conducted the telephone interviews. At least 400 students were selected randomly from registration records and interviewed at each school, each semester. For both schools, a sample of 400 students allows for $\pm 5\%$ estimating margin (95% confidence) for population parameters. Preliminary analyses of the data from the two universities indicated the schools did not differ on any of the last drinking event or drinking variables assessed in this study. As such, the data from the 2 schools were pooled for analysis.

SUBJECTS

Only respondents who reported an occasion in the past 28 days where alcohol was being consumed were included in the study ($N = 4,964$).¹

¹Respondents did not have to personally consume alcohol to answer this question; they only had to have been at an event where alcohol was being consumed.

More than half (54.8%) of the sample was female and white (56.4%). The average age of the respondents was 24.58 years ($SD = 7.85$).

MEASURES

An original interview schedule was developed for this study. We included a series of questions measuring contexts of student drinking (8). We drew several of the context items from the College Alcohol Risk Assessment Guide (17). Finally, we developed several original items designed to assess environmental characteristics of student drinking events (5, 8). Clapp and associates (11) established the predictive validity of several of these original items in an earlier study.

Respondents were asked questions about their most recently attended social event where alcohol was present. Features of the context as well as the respondents behaviors at the event were the focus of the questions. Thus, in addition to personal characteristics of the respondents, we obtained a self-report sample of drinking contexts among this college-student sample. Context items then became predictor variables for the concurrent drinking behaviors reported occurring at the last drinking event.

DATA ANALYSIS

The data were analyzed using ordinary least squares multiple regression. Cases with missing data were dropped from each analysis. Tolerance, VIF, and Durban Watson values were examined for each model. These diagnostic variables indicated that the data used in the respective models met the basic assumptions of the regression method we employed.

The first model examined whether drinking location (private parties vs. public venues) improved the prediction of self-reported drinking beyond what is predicted by covariates such as gender, marijuana use, other drug use, and the number of occasions during the past 2 weeks that 5 or more drinks were consumed. For these models, these covariates were entered into the first step of the model followed by drinking location in the second step.

We also modeled the relationship between environmental drinking predictors (e.g., number of intoxicated drinkers at event, etc.) and self-reported drinking separately for underage and legal drinkers at each drinking location (private parties vs. public venues).

The environmental predictors included in these analyses could be classified into 2 categories: 1) variables influenced almost entirely by

the environment (i.e., the presence of food in a bar) and 2) variables influenced by both the environment and by the individuals within the environment (i.e., the number of intoxicated people at an event).

Because individual factors such as heavy episodic drinking or drug use will heavily influence the environmental predictors in the later category, it is likely that these individual factors are colinear with the environmental factors. For example, events with many intoxicated people are likely to be comprised of individuals with a history of drinking heavily. Thus, we did not include individual covariates of drinking (e.g., marijuana use, number of previous binge episodes) into these models because these factors would likely account for much of the variance in the environmental predictors heavily influenced by individual drinking factors.

RESULTS

Overall, students under 21 reported drinking significantly more at their last drinking occasion ($M = 5.0$) than students 21 and over ($M = 4.64$), $t(1, 5608) = 2.10, p < 0.05$.

Drinkers in both age groups were more likely to report that their last drinking event was at a party than at a bar, $\chi^2 = 220.98, p < .01$. Specifically, nearly 9 out of 10 participants under the age of 21 reported that their last drinking event was at a party (87.1%) as opposed to a bar (12.9%). This is in contrast to those of legal drinking age, where the percent reported drinking at parties and bars was more equally distributed (65.8% for parties and 34.2% for bars).

Table 1 presents the bivariate relationships among, environmental characteristics, age, and setting. The availability of illicit drugs was relatively low for both types of events and for each age group; however, almost one in 5 participants under the age of 21 reported the availability of drugs at private parties. Interestingly, very few legal and underage drinkers reported being at a no-host (i.e., BYOB) private party (12.3%). A greater percentage of underage drinkers reported observing someone get sick at either a private or public event compared to legal drinkers.

A majority of respondents reported the availability of food at private parties but fewer than 25% of underage respondents reported the availability of food at a public event. More than three-quarters of underage drinkers reported the presence of intoxicated individuals at a public venue. Observing a fight was relatively rare with the exception of underage respondents at public events who were drinking almost exclusively at bars/clubs in Mexico.

Table 1. Percentage of respondents reporting presence of environmental variable by event type and age of respondent

Environmental variable	Private events (parties)				Public events (bars/clubs)			
	Under 21		21 and over		Under 21		21 and over	
	%	(n)	%	(n)	%	(n)	%	(n)
Food at last event	67.4	918	86.0	1330	23.8	30	52.3	397
Many intoxicated at last event	48.0	653	24.6	377	86.0	111	57.7	422
Illicit drugs available at last event	22.5	298	13.4	205	10.7	13	7.4	52
Witnessed a physical fight at last event	3.8	52	1.7	26	21.5	28	5.4	42
Last event was BYOB	16.7	228	8.3	124	—	—	—	—
Played drinking games at last event	35.4	476	38.1	563	1.5	2	1.3	10
Saw someone get sick at last event	27.1	369	12.3	183	46.2	60	15.8	122

Self-Reported Drinking as a Function of Drinking Location

Almost 95% of underage respondents reported drinking at parties in the United States or at bars in Mexico. Thus, we only compared self-reported drinking between these two locations in our regression models. Table 2 presents the results of a hierarchical regression that models self-reported drinking as a function of drinking location and drinking covariates for underage drinkers. Both gender (males) and the number of times a respondent drank five or more drinks in the past two weeks were positively related to drinking. The addition of the drinking location variable to the model significantly increased the prediction of self-reported drinking and showed that underage drinkers consumed significantly more drinks when drinking in Mexico than when drinking at parties in the United States.

Nearly every drinker (98.2%) of legal drinking age reported his or her last drinking event to be a private party or a bar/night club in the U.S. Thus, for this model we compared self-reported drinking for legal drinkers at private parties or bars/night clubs in the United States. Similar to underage drinkers, gender (males) and the number of binge episodes in the past 2 weeks were positively associated with drinking; however, smoking marijuana also was positively correlated with

Table 2. Results of hierarchical regression models (standardized coefficients) of drinking by age and location of event

	Age group	
	Under 21 (β)	Over 21 (β)
Step 1		
Gender	0.063*	0.120**
Smoked marijuana at last event	0.036	0.058*
Used other drugs at last event	0.035	0.001
No. of times drank 5 or more drinks in past 2 weeks	0.519**	0.453**
Adjusted R-Square	0.301**	0.255**
Step 2		
Location of event (1-private; 2-public)	0.146**	0.085**
R-Square Change	0.021**	0.007**
Adjusted R-Square	0.322**	0.263**
Sample (n)	1,468	2286

*p < 0.05.

**p < 0.001.

increased consumption. Again, the prediction of alcohol consumption was significantly increased with the addition of the drinking location term. Specifically, respondents of legal drinking age reported drinking significantly more in public locations in the United States (i.e., bars or clubs) than at private parties.

Environmental Predictors of Drinking

Table 3 presents the results of four regression models examining the environmental predictors of drinking stratified by age (under 21 and 21 and over) and drinking event location (public and private).

When drinking at private parties, underage and legal drinkers reported drinking more when illicit drugs were available at the last event or when many people at the event were intoxicated. Attending no-host parties (i.e., BYOB) and playing drinking games also was positively associated with increased drinking for both groups of drinkers. Observing someone get sick and the availability of food at the party was predictive of increased drinking only for underage respondents. Witnessing a fight was not significantly associated with drinking for either group (see Table 3).

For both underage and legal drinkers, the presence of many intoxicated people in a public drinking venue (bars/clubs in the United States

Table 3. Results of regression models (standardized coefficients) of drinking by age group and type of event

	Age group	
	Under 21 (β)	Over 21 (β)
Private parties		
Food at last event	0.055*	0.018
Many intoxicated at last event	0.170**	0.305**
Illicit drugs available at last event	0.112**	0.055*
Witnessed a physical fight at last event	- 0.040	- 0.021
Last event was BYOB	0.078**	0.049*
Played drinking games at last event	0.277**	0.284**
Saw someone get sick at last event	0.069*	- 0.041
Adjusted R-Square	0.178**	0.219**
Sample (n)	1,262	1,407
Public (bars)		
Food at last event	- 0.134	0.012
Many intoxicated at last event	0.212*	0.255**
Illicit drugs available at last event	- 0.034	0.018
Witnessed a physical fight at last event	- 0.015	- 0.017
Played drinking games at last event	0.164	0.182
Saw someone get sick at last event	- 0.040	0.021
Adjusted R-Square	0.049	0.098**
Sample (n)	117	657

* $p < 0.05$.** $p < 0.001$.

or in Mexico) was associated with increased drinking; however, no other environmental predictors were significant for either group of respondents.

DISCUSSION

This study examined the relationship between drinking behavior and drinking environments as it relates to legal drinking status. One unique characteristic of the present study was our ability to examine drinking behavior in public (bars) and private (parties) drinking environments for both legal and underage drinkers. That is, our data are unique in that the underage respondents in our study had access to a quasi-legal public drinking environment in Mexico.

Several of our findings are consistent with the general findings in the current literature concerning college students' drinking contexts. The findings of the present paper, however, tend to further specify these general findings.

Similar to previous studies (5, 8, 11) having many people intoxicated in a drinking environment significantly contributed to drinking variance in all the models. As suggested earlier, young adults often seek out such uncontrolled drinking environments (12). Across environmental settings a "wet" atmosphere (perceived or real) appears to consistently increase drinking.

For private parties, our finding that the availability of illicit drugs (in both party models) significantly contributed to drinking is also consistent with previous research (11). Conceptually, the presence of illicit drugs might be indicator of lower social control. In contrast, the presence of illicit drugs was not related to drinking levels in public venues. Illicit drugs are probably less visible—if not less prevalent—in public drinking settings. The presence of drinking games also significantly contributed to the prediction of self-reported drinking for both age groups, however this variable was not predictive in the private party models. Similar to illicit drugs, drinking games are probably less acceptable in public settings.

BYOB parties were less prevalent than hosted parties. Consistent with past research (8), however, BYOB events were associated with heavier drinking. This finding may be related to the availability of alcohol or alcohol control at hosted parties. That is, in BYOB events, students might have more access to alcohol than they do at hosted parties. Future research should examine this issue in greater detail.

While these analyses are unique in their ability to shed light on the contextual features of public drinking contexts of those under age, it is also clear that the unique features of Mexican bars and nightclubs make generalizing these findings beyond the border region difficult. However, taken as a snapshot of the underage drinking scene, these descriptive elements of public features, compared with private contexts, begins to shed light on an otherwise understudied environment for young people in the United States.

Future research also is needed to better understand public drinking in bars. The present study was limited in the range of variables that likely contribute to drinking in bars. Variables such as price per drink, drink such as specials, and rate of service probably all contribute to drinking in bar settings.

Measuring drinking environments is complex. Although there has been increasing attention to student drinking environments, both conceptually and from a prevention standpoint, much work is needed to better understand this issue. Conceptually, the complex relations

among factors within unique settings need to be better defined. Methodologically, self-report measures of college drinking environments need to be complemented with observational and biological measures. Once risk and protective factors are better understood, environmental prevention efforts targeting specific settings can be tested. Given that drinking environments represent the most proximal setting to actual drinking behavior such efforts have great potential import.

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