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Cross-border college drinking

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Abstract

Problem: Universities have a major problem with binge drinking by students. This problem is greater for universities near national borders where underage students can cross into areas where the legal drinking age is younger than in the United States. **Method:** A telephone survey of students at two large universities, within an hour drive of the Mexican border, was conducted to determine the extent of the cross-border drinking problem. **Results:** On average, the students reported about 6.5 trips across the border to drink in the past year and indicated that when drinking in Mexico they consumed greater amounts of alcohol — more than six drinks compared to 4.5 in the United States. **Summary:** The study indicated that young males drank the most (8.7 drinks) when in Mexico compared to 4.7 drinks for those older than 21 years and 4.5 drinks for women younger than 21 years. Thus, young male students who are more likely to be drivers than their female comparisons drink twice as much, when in Mexico, creating a significant risk for both. **Impact on Industry:** Unknown, but companies near the border may wish to consider special education programs aimed at underage male employees. © 2001 National Safety Council and Elsevier Science Ltd. All rights reserved.

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1. Problem

Much has been written recently concerning heavy episodic and other forms of high-risk drinking by college students in the United States (Johnson, Lange, & Voas, 2000; Presley, Leichliter, & Meilman, 1998; Wechsler, Kelley, Weitzman, San Giovanni, & Seibring, 2000; Wechsler, Lee, Kuo, & Lee, 2000). This research illustrates that heavy episodic or binge drinking and alcohol-related consequences are very common among college students. Epidemiological in nature, these studies have documented demographic and regional differences in the distribution of heavy episodic drinking and alcohol-related problems within the national college population. For instance, in their most recent study, Wechsler, Lee, et al. (2000) found that males, younger drinkers, and fraternity/sorority members tended to report heavy episodic drinking more frequently than other college demographic groups. Further, Wechsler et al. reported that binge-drinking prevalence rates have remained steady between 1993 and 1999 in the United States.

Based on these findings, one current stream of research in this area has begun to examine the relationships among heavy episodic drinking, drinking problems, and environmental factors common to drinking events in an effort to identify environmental etiological factors for alcohol problems within this population (Clapp & Shillington, 2000; Clapp, Shillington, & Segars, 2000).

Several of these studies have used last-drinking-event data to identify risk and protective factors associated with specific drinking contexts. For instance, Clapp et al. (2000) found that the presence of food at the students' last drinking events was protective of alcohol-related problems, while the presence of illicit drugs at such events increased risk for alcohol problems. In another study, Clapp and Shillington (2000) found that playing drinking games was associated with increased risk for heavy episodic alcohol consumption. One limitation of these studies has been their inability to examine the level of environmental control of alcohol availability and sales. This paper directly addresses this issue of environmental control and availability in student drinking environments by examining students' last-drinking-event data in the United States and Mexico.

The National Highway Traffic Safety Administration (NHTSA, 2000) estimates that minimum legal drinking age (MLDA) laws have saved 19,121 lives from 1975 through 1999. These laws divide the student body of a university into those that can and those that cannot drink legally. This presents a challenge to administrators in their attempts to regulate on-campus use of alcohol. To permit drinking events on campus, they must develop regulations that prevent serving students younger than 21 years. More difficult is the problem of influencing the sales practices of off-campus alcohol outlets.

In the United States, the MLDA law provides some support for controlling off-campus drinking locations. Universities near the U.S. borders face a special problem because Canada has some provinces with an age 19 drinking limit and others with age 18 limit, while Mexico has an age 18 drinking limit. Underage students who reside near or within driving distance of the border can cross to Mexico or Canada and drink legally. When large numbers of

underage youth are brought together near a border by military bases or universities, bars catering to that age group tend to congregate near the border crossing. Such concentration of outlets increases the attractiveness of the location to young drinkers and competition among the bars leads to the acceptance of more acting-out and less controlled behavior on the part of their youthful patrons. This type of drinking environment exists at both the north and south borders of the United States, but has been particularly well documented at the Mexican border (Baker, 1997; Lange & Voas, 2000).

Although there are many upscale drinking establishments in Mexican border communities, whose service is similar to comparable outlets in the United States, there are also bars in Mexico that congregate near the border crossings and actively promote heavy consumption to underage drinkers; on the other hand, U.S. bars must be circumspect about serving anyone younger than 21 years. This is illustrated in Tijuana and El Paso, Mexico, where, a short distance from the border, there is a cluster of youth-oriented bars that employ “barkers,” aggressive street marketers who attempt to entice young patrons into the establishment by offering an array of low-cost drink specials. Specials such as “all you can drink for US\$5.99,” “women drink free,” and “no ID” are common. Because cheap liquor is sold (Tequila is less expensive than beer), there is little attempt to measure servings of alcohol in drinks. In fact, one practice of serving alcohol, “poppers,” has wait staff pour tequila and margarita mix directly down the throats of patrons (Lange & Voas, 2000).

A study of blood alcohol concentrations (BACs) of drinkers returning from Tijuana (Lange & Voas, 2000) 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 with BACs in excess of 0.08. In addition, of those crossing late at night as pedestrians, more than 23% identified themselves as college students and more than 26% of these students returned with BACs higher than 0.08. With 6,000–7,000 drinkers crossing the border each weekend night, these analyses indicate that hundreds of intoxicated college students return to area campuses after drinking in Mexico each weekend night.

Compounding the risk of heavy alcohol consumption, most of the students drinking in Mexico reach the border by vehicle (Lange & Voas, 2000). Although some cross the border in their vehicles, most park on the U.S. side and walk across into Mexico. Those 21 years of age and older are subject to arrest if they drive with a BAC of 0.08 or higher; students younger than 21 years can be arrested for driving with a BAC of 0.02. Because the campuses in this study are within an hour of the border, students face a significant risk of both arrest and alcohol-related crash involvement.

Although the levels of intoxication documented by these studies are alarming, to date, no study has directly compared drinking on the Mexican side versus drinking on the U.S. side of the border by a U.S. college population. To address this issue, this study compares the number of drinks consumed during the students' last U.S. and Mexican drinking events, while testing for age and gender effects.

2. Method

2.1. Sample

This relational study uses survey data collected as part of a federally funded alcohol prevention trial being conducted at two large public universities located in the southwestern United States within 30–60 min drive from the border. A total of 803 (University 1: $N=401$, University 2: $N=402$) students were randomly selected from registration records at the two universities. Students refusing to participate were randomly replaced. Cooperation rates were 74.5% and 83%, respectively, at the two universities. For both schools, a sample of 400 students allows for 95% ($\pm 5\%$) confidence when estimating population parameters.

For the purposes of this study, this larger sample of the two universities was decreased to an N of 130 (16.2% of the total sample), which was the number of respondents who reported consuming alcohol during their last visit to Mexico and had also consumed alcohol during the past 28 days in the United States.

The universities did differ statistically on race/ethnicity ($\chi^2=20.9$, $df=5$, $P=.001$): 48.4% of the respondents were White and 37.4% were Hispanic. These percentages were comparable at each school. The two study universities differed on percentages of African Americans (9.0% vs. 1.0%), Asians (11.6% vs. 0%), and Native Americans (2.0% vs. 0%). Despite these differences, preliminary analyses of the data from the two universities indicate that the schools do not differ on any of the last drinking event or drinking variables of interest assessed here. As such, the data from the two schools were pooled for analysis.

2.2. Interviews

A university-based social science research laboratory conducted telephone interviews with respondents during the spring semester of 2000. Trained interviewers conducted the interviews. Professional research staff randomly monitored interviews to ensure data quality.

An original interview schedule was developed for this study. The instrument included several items from the short form of the Core Survey (Presley, Meilman, & Lyerla, 1995) including measures of alcohol and other drug (AOD) use and related problems. Presley et al. (1995) established the psychometric properties of the Core. In addition to the standard questions taken from the Core Survey, a series of questions measuring environmental contexts of student drinking including location of the last drinking event, reason for the event, duration of the event, with whom one was drinking, what one was drinking, and other pertinent topics were included (see Clapp et al., 2000). Several of the context items were drawn from the College Alcohol Risk Assessment Guide (Ryan, Colthurst, & Segars, 1994) and were used in a study by Clapp et al. (2000).

2.3. Measures

Four interview items were used for analyses in this study: age, gender, total number of drinks consumed during respondents' last drinking event in Mexico during the past 12 months, and total drinks consumed during respondents' last drinking event during the past 28 days in the United States. The data set was structured so that all Mexican drinking events occurred within the last month before the interview to correspond to the U.S. data. For the analysis, age was stratified into two categories: 18–20 years and 21 years and older.

2.4. Analysis

The total number of drinks consumed by each subject during their last U.S. and Mexican drinking events was compared using a repeated measures general linear model (GLM). Age and gender interactions were also tested.

3. Results

The 673 students that did not report visiting Mexico during the last year, and therefore were not included in the study, reported drinking 2.3 drinks (S.D. = 2.5) per occasion. Of the 673 students, 18% reported consuming five or more drinks on a single occasion in the 2 weeks before being surveyed. In contrast, the 130 students who did cross the border to drink consumed more, averaging 3.5 drinks per occasion (S.D. = 3.1, $t = 5.8$, $df = 697.9$, $P < .001$). They were also more likely to be binge drinkers with 40.3% ($\chi^2 = 21.2$, $df = 1$, $P < .001$) reporting that they had consumed five or more drinks at a single session in the 2 weeks before being surveyed. Overall, one in three of the binge drinkers in the total survey sample reported drinking in Mexico.

Table 1 presents the descriptive statistics for the sample of students included in this study. Whereas men and women were equally represented among the telephone respondents, males were slightly overrepresented in the border-crossing sample. Although the mean age of students in the telephone sample is slightly older than 21 years, the majority of students in the crossing sample were younger than 21 years. Consistent with this, freshman and sophomores represented 54% of the students visiting Mexico.

On average, the sample reported about 6.5 visits to Mexico during the past year. However, there was considerable variation within the sample in the number of visits, with a standard deviation of almost 11 visits per year. On average, the students reported drinking more than six drinks during their last visit to Mexico. In contrast, the mean number of drinks consumed during the last drinking event in the United States was about 4.5 drinks.

Table 2 reports the results from the repeated measures GLM analysis. As shown in the table, respondents consumed significantly more drinks during the

Table 1
Descriptive statistics: demographics and alcohol consumption

Variable	N (%)	Mean (S.D.)
Gender		
Males	74 (56.9)	
Females	56 (43.1)	
Enrollment status		
Full-time	123 (94.6)	
Part-time	7 (5.4)	
Class level		
Freshman	43 (33.1)	
Sophomore	27 (20.8)	
Junior	20 (15.4)	
Senior	34 (26.2)	
Graduate	6 (4.6)	
Visits to Mexico		6.6 (10.7)
Total drinks last US drinking event		4.4 (3.4)
Total drinks last Mexico drinking event		6.0 (4.0)
Age		21.2 (4.2)
< 21	71 (54.6)	
≥ 21	59 (45.4)	

last visit to Mexico than they did during the last U.S. drinking event. Gender and age interactions were not statistically significant, indicating that regardless of age and gender, respondents drank more in Mexico than they did in the United States.

Univariate GLM models were computed to assess between subject comparisons for drinking in Mexico (see Table 3). As shown in the table, there were gender, age, and gender by age, differences in the number of drinks consumed in Mexico. On average, males consumed 6.7 drinks (95% CI=5.9–7.6) during their last visit, and females consumed 4.5 drinks (95% CI=3.6–5.5). Underage (U.S.) students drank 6.6 drinks in Mexico (95% CI=5.8–7.5) compared to 4.6 drinks (95% CI=3.8–5.6) consumed by students 21 years or older. When examining the cells for the interaction of age and gender, males younger than 21 years drank the most during the last Mexican drinking event (8.7 drinks), followed by males and females 21 years or older (each with a mean of 4.7).

Table 2
Repeated measures general linear model of last U.S. and Mexican drinking events

Effect	F value	Error degrees of freedom	Probability
U.S. vs. Mexican drinking event (Factor 1)	29.3	126	.001
Factor 1 × Age	0.87	126	NS
Factor 1 × Gender	0.07	126	NS
Factor 1 × Age × Gender	1.4	126	NS

Table 3
Univariate general linear models of drinking in Mexico: age, gender, and interactions

Source	Sum of squares	df	F value	Probability
Model	496.1	3	13.6	.001
Gender	177.7	1	14.6	.001
Age	156.0	1	12.9	.001
Age × Gender	145	1	12.0	.001

Females under the legal drinking age consumed 4.5 drinks on average during the last Mexican drinking event.

4. Discussion

This study compared drinking rates for students' last drinking events in Mexico and the United States. Students who crossed into Mexico to patronize the border bars were heavier drinkers than those who did not report drinking in Mexico during the last year. Nevertheless, when in Mexico, these heavy drinking students drank more than when drinking in the United States. This heavier consumption in Mexico was true regardless of age or gender. Particularly striking is the heavy consumption of underage males while in Mexico. With an average of 8.7 drinks per visit, they drink considerably more than older males and both younger and older females. With the exception of males aged 21 years or older, students patronizing border bars consumed alcohol on average at "binge" (Wechsler, Lee, et al., 2000) or heavy episodic levels in Mexico.

Two explanations for the higher consumption levels in Mexico are suggested. The border bars may be seen as the best location for drinking when the individual's intention is to consume more than the normal amount. This possibility is supported by surveys of youths entering Mexico to patronize border bars, half of whom say their intention is to get drunk. This statement of intention is validated by higher BACs when they return across the border after a night of drinking (Lange & Voas, 2000). A second possibility is that the drinking environment in the border bars stimulates additional consumption that would otherwise not occur. Some evidence for this proposition is provided by Lange and Johnson (2000). Most likely, it is a combination of both factors that leads to excessive consumption, particularly for males younger than 21 years.

A key issue for university administrators working with officials in their local communities is what actions might be taken to reduce student cross-border bingeing. In San Diego, increased traffic enforcement that included sobriety checkpoints near the border and an intensive media campaign resulted in a decrease in the number of youths crossing into Mexico and reduced BACs among those returning from a night of drinking south of the border (Voas, Lange, & Johnson, 2001). Working with the cross-border community also offers good opportunities to reduce the binge-drinking problem. When a policy change in Juarez, Mexico resulted in the closing of the border bars in that city at 2 a.m.

rather than their remaining open all night, the number of youthful crossers and their average BACs were reduced (Voas et al., 2001, under review). If such measures can be expanded and institutionalized, real reductions in college student binge drinking in border states may result.

5. Summary

This study examined college students' last drinking events in Mexico and the United States. GLM analyses determined that students drank more in Mexico than they did in the United States, regardless of their age or gender. Drinking in Mexico was at the binge level for both males and females. This finding is particularly troubling given that Mexico is a 45–60-min drive from the college campuses studied and given that previous research (Lange & Voas, 2000) has found that the majority of students drive to Mexico. Colleges in the U.S. border region need to develop programs to address this serious public health issue.

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