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The association between alcohol-related arrests and college football game days

Lisa J. Merlo,

University of Florida Department of Psychiatry, P.O. Box 100183, Gainesville, FL 32610

Jisu Hong, and

University of Florida Department of Psychiatry, P.O. Box 100183, Gainesville, FL 32610

Linda B. Cottler

Washington University Department of Psychiatry, 40 N. Kingshighway, Suite 4, St. Louis, MO 63108

Abstract

Binge drinking has been tied to specific occasions, such as certain holidays and sporting events. However, previous research has relied almost exclusively upon self-reports of university students to document these associations. In order to address this limitation, the present study examined patterns of alcohol-related offenses occurring within the context of holidays and collegiate football games. Public arrest records from a university town with a successful NCAA Division I football program were examined for 30 days: 10 holidays, 10 college football "home game" days, and 10 control days. In total, 944 arrests were associated with the 30 study days. Results indicated football game days were associated with the highest number of arrests ($F = 24.76$, $2/27$ df, $p < .001$). Specifically, on average there were 70.3 ($SD = 35.4$) arrests on each football game day, compared to 12.3 ($SD = 8.8$) arrests on non-game "control Saturdays," and 11.8 ($SD = 6.3$) arrests on holidays. Offenses committed on game days generally occurred closer to the football stadium than crimes committed on holidays or control days ($F = 165.05$, $2/941$ df, $p < .001$). Though efforts have been made to combat excessive drinking on holidays, more effort is needed to address the significant binge drinking among students and other spectators that is associated with high profile collegiate sporting events.

Keywords

Alcohol; Substance abuse; Crime prevention; Sporting events; Binge drinking

Corresponding author: Lisa J. Merlo, Ph.D., McKnight Brain Institute, University of Florida, P.O. Box 100183, Gainesville, FL 32610-0183, lmerlo@ufl.edu.

Contributors

Lisa J. Merlo designed the study, wrote the protocol, conducted the statistical analyses, and wrote the first draft of the manuscript. Jisu Hong collected and entered the data, managed the preliminary literature searches, and composed summaries of previous related work. Linda B. Cottler participated in the revision of the first draft of the manuscript and provided guidance regarding additional analyses to conduct. All authors contributed to and have approved the final manuscript.

Conflict of Interest

All authors declare they have no conflicts of interest.

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1. Introduction

The relation between alcohol consumption and the celebration of various holidays is well-known. For example, New Year's Eve is often considered an occasion for champagne and cocktails; whereas, green beer and whiskey flow freely on St. Patrick's Day. Research has demonstrated higher rates of binge drinking and alcohol-related deaths during holiday festivities (Mäkelä, Martikainen, & Nihtilä, 2005). In addition, studies have shown that deaths from motor vehicle accidents occur most frequently on holidays, including New Year's and the 4th of July (Farmer & Williams, 2005), with speculation that alcohol is an important factor in these deaths. As a result, public education efforts have targeted holiday drinkers to inform them of the dangers of binge drinking and driving while intoxicated, and public safety officials have increased patrols and driver check-points to deter drunk driving (DeJong & Hingson, 1998).

However, alcohol consumption in general, and binge drinking in particular, are not limited to annual holiday celebrations. Rather, other situations may be equally high-risk and warrant similar public health interventions. For example, several studies have documented a correlation between excessive alcohol consumption and sporting events that draw a large number of spectators. Wolfe et al. (1998) found 41% of spectators at a major league baseball game tested positive for alcohol. In addition, universities report a significant association between high-profile collegiate sporting events and alcohol consumption among students. Indeed, the percentage of college students who self-report binge drinking correlates .28 ($p < .01$) with the percentage of students who identify as "sports fans" (Nelson & Wechsler, 2002). The highest-profile collegiate sporting events, may be associated with even higher rates of drinking. For example, one study demonstrated that students whose school team was participating in the semi-final and final games of the NCAA basketball tournament reported much heavier drinking on the game days than was typical for them on those days of the week (Neal et al., 2005).

Research has suggested that being a spectator of college football games may represent a significant risk factor for binge drinking, with spectators reporting higher consumption on game days than during other parties or social activities (Glassman et al., 2007). This may be particularly problematic at schools in which the football program is highly emphasized and/or successful. Indeed, one study of rugby spectators showed that post-game alcohol consumption is associated with aggression (not celebration), but that team success may increase aggression among fans (Moore et al., 2007). Another study demonstrated that students' self-reported alcohol consumption on football game days paralleled their self-reported alcohol consumption on holidays (Neal & Fromme, 2007). Despite these findings, interventions to deter excessive alcohol consumption, drunk driving, and aggression during football games or other sporting events have not been widely implemented. Though some universities have adopted policies and programs aimed at curbing student drinking in general (for reviews see Toomey & Wagenaar, 2002; Turrise, Mallett, Mastroleone, & Larimer, 2006), programs do not typically focus on alcohol consumption related to collegiate sporting events. In addition, programs and policies targeting non-student sports spectators among the general public are completely lacking in most areas.

Excessive alcohol consumption represents a significant public health concern due to its social, psychological, and medical consequences (Institute for Health Policy, 1993), as well as legal consequences including arrest, incarceration, fines, or loss of privileges (e.g., licensure). Yet, in order to promote programs and policies to decrease spectator-sport-related binge drinking and its associated consequences, more information is needed to document the problem. Previous research has been limited by almost exclusive reliance on self-reports of alcohol consumption, as well as samples that were wholly comprised of university students. The present study was conducted to extend the results of previous research by examining objective public

record data to document the rates of alcohol-related arrests for both student and non-student offenders in a college town with a successful NCAA Division I football program. Specifically, the goal was to compare the number of alcohol-related arrests associated with college football game days to the number occurring on holidays and control days.

2. Method

2.1 Procedures

With approval from the University of Florida Institutional Review Board, public arrest records were examined for 10 holidays typically associated with increased alcohol consumption, 10 home football game days, and 10 control days from July 2005 to March 2007. After informally consulting with a number of undergraduate students regarding popular local “drinking holidays,” selected holidays included New Year’s Eve, St. Patrick’s Day, Memorial Day, the 4th of July, Labor Day, and the night before Thanksgiving (i.e., “biggest bar night of the year”). Given that data were collected over 20 months, most holidays were included twice. Selected “football game days” included Saturdays in the autumn of 2005 and 2006, on which the local university had a football game played at home. Selected “control” days included Saturdays that occurred during the 2005 and 2006 college football seasons, on which the local university had no football game (home or away) scheduled.

The decision was made to focus on the frequency of arrests and offenses for crimes that are likely to be associated with alcohol consumption (e.g., unlawful possession of alcohol, drugs, or false identification; public intoxication; driving under the influence; assault and battery; resisting arrest; burglary/theft; trespassing, etc.). Upon examination of the records, the type of offense and where it took place were recorded for all arrests made during the 24-hour period beginning on noon of the target date and extending to noon the following day. Arrest records were de-identified and included offenses committed by both college students and non-students who were in town on the day under study.

2.2 Data Analysis

Frequency counts were computed for each type of offense. Given that the local university team was undefeated at home during the period of study, we were unable to assess variance in the number of arrests on game days according to whether the team had won or lost that day. One-way ANOVAs with Tukey’s HSD post hoc tests were utilized to compare between-group differences in the mean number of arrests per day. These were computed for the total number of arrests, as well as for offenses with high enough frequency to support the comparison.

In order to calculate the distance of the crimes from the stadium, the address of the stadium and the address listed on the arrest record for each crime were entered simultaneously into an online mapping site. Distances computed by the online mapping site were used for the analyses. Then, one-way ANOVAs with Tukey’s HSD post hoc tests were used to compare groups on the mean distance between the football stadium and the location of the crimes.

3. Results

3.1 Number of arrests across type of day

In total, 944 arrests were associated with the 30 days under study. When examining the mean number of arrests per day, results indicated that home football game days were associated with a higher average number of arrests ($F = 24.76$, $2/27$ df, $p < .001$). On average, there were 70.3 ($SD = 35.4$) arrests on each football game day (range = 14–132), compared to 12.3 ($SD = 8.8$) arrests on control Saturdays (range = 4–34), and 11.8 ($SD = 6.3$) arrests on holidays (range = 4–22).

3.2 Group differences across specific crimes

Significant group differences were observed on the omnibus tests for several specific crimes, including Alcohol Possession by a Minor ($F = 7.79$, $2/27$ df, $p = .002$), Driving Under the Influence ($F = 9.60$, $2/27$ df, $p = .001$), Open Container Violations ($F = 25.99$, $2/27$ df, $p < .001$), Alcohol Possession at the Stadium ($F = 6.30$, $2/27$ df, $p = .006$), Non-Violent Resisting of Arrest ($F = 8.67$, $2/27$ df, $p = .001$), and Battery ($F = 3.27$, $2/27$ df, $p = .05$). Specifically, when comparing football game days to holidays, there were more arrests for Alcohol Possession by a Minor (mean difference = 8.00; $p = .002$), Driving Under the Influence (mean difference = 1.60, $p < .001$), Open Container Violation (mean difference = 41.50, $p < .001$), Alcohol Possession at the Stadium (mean difference = 2.70, $p = .01$), and Non-Violent Resisting of Arrest (mean difference = 0.70, $p = .02$). When comparing football game days to control Saturdays, there were more instances of Alcohol Possession by a Minor (mean difference = 5.60, $p = .03$), Driving Under the Influence (mean difference = 0.90, $p = .05$), Open Container Violation (mean difference = 40.60, $p < .001$), Alcohol Possession at the Stadium (mean difference = 2.70, $p = .01$), Non-Violent Resisting of Arrest (mean difference = 1.0, $p = .001$), and Battery (mean difference = 1.60, $p < .05$). Table 1 displays the mean number of arrests per type of day for selected crimes.

3.3 Location of crimes across type of day

Results of analyses examining the location of the arrests also produced significant results. In general, offenses committed on game days occurred significantly closer to the football stadium than crimes committed on holidays or control days ($F = 165.05$, $2/941$ df, $p < .001$). Arrests made on game days occurred an average of 0.69 miles from the stadium (range = 0.0 miles to 5.1 miles); whereas, arrests occurred an average of 2.1 miles from the stadium on holidays (range = 0.3 miles to 4.6 miles), and 1.7 miles from the stadium on control days (range = 0.2 miles to 4.14 miles).

4. Discussion

4.1 Importance of primary findings

Previous research has demonstrated that college football game days are associated with increased drinking by college students (Glassman et al., 2007; Neal & Fromme, 2007) and other spectators (Merlo et al., 2009). Results of the present study suggest that this binge drinking may be associated with increased legal consequences when judged against control Saturdays or traditional “drinking holidays.” Increases in the number of arrests for ordinance violations (e.g., open container violations or unlawful possession of alcohol) contributed significantly to the differences in absolute number of arrests across groups (i.e., football game days compared to holidays and control Saturdays). However, serious offenses (e.g., battery and driving under the influence) were also significantly more common on game days. This has important implications for public health and safety, as driving under the influence can lead to serious, often fatal, accidents and serious social and economic costs.

4.2 Limitations

The results should be interpreted with in the context of some limitations. First, this study was conducted in only one NCAA Division I university town in which virtually all the football games are high-profile events, so results may not generalize to other locations/populations. Second, some of the holidays studied occur during times when many university students may leave town. As a result, it is possible that the lower rates of arrest may be related to the smaller number of individuals in the town. However, in order to address this concern, we compared the average number of arrests on holidays when students would likely be in town (e.g., St. Patrick’s Day, Labor Day) to the average number of arrests on holidays when many students

may not be in town (e.g., 4th of July, New Year's Eve). Results indicated no significant differences in the rates of arrest ($t = -0.51$, *ns*) for these two groups of holidays, suggesting that this did not have a significant effect on the study results. A third limitation is that there was no evidence documenting the contribution of alcohol consumption to a number of the crimes. Though several offenses (e.g., driving under the influence, public intoxication, minor in possession of alcohol, etc.) were, by definition, related to alcohol, some crimes (e.g., battery, theft, etc.) may not have been. Finally, many offenses occurred too infrequently to support analyses specifically comparing their prevalence by type of day (e.g., domestic violence-related arrests). Future research should include larger samples (i.e., more university towns with a larger number of comparison days) in order to better assess these differences.

4.3 Implications of the findings

Despite these limitations, results of the present study have important implications for public health and safety. Though efforts have been made to combat excessive drinking on holidays (e.g., Public Service Announcements, television and radio commercials, signs posted along major roadways, random driver checks, etc.), more efforts are needed to address the significant levels of binge drinking associated with high-profile collegiate sporting events. These events contribute to a “drinking culture” in university towns that extends beyond the students themselves. Indeed, the present results included arrests of both student and non-student offenders. Given that rates of alcohol-related crimes on high-profile sporting event days may exceed those seen on holidays, additional prevention and intervention programs should be implemented to decrease this risky behavior and its associated consequences.

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Table 1

Select Results Comparing Average Number of Arrests Across Type of Day

Arrest Type	Football Day [F] M (SD)	Holiday [H] M (SD)	Control Day [C] M (SD)	sig
Total #	70.3 (35.4)	11.8 (6.3)	12.3 (8.8)	F > H = C
Alcohol Possession by a Minor	8.9 (7.5)	0.9 (1.3)	3.3 (2.7)	F > H = C
Driving Under the Influence	1.8 (1.0)	0.2 (0.4)	0.9 (0.9)	F > H = C
Open Container Violation	42.5 (25.2)	1.0 (1.2)	1.9 (3.3)	F > H = C
Non-Violent Resisting Arrest	1.1 (0.7)	0.4 (0.5)	0.1 (0.3)	F > H = C
Simple Battery	2.0 (1.9)	0.9 (1.4)	0.4 (0.7)	F = H F > C
Possession of Alcohol in the Stadium	2.7 (3.4)	0.0 (0.0)	0.0 (0.0)	F > H = C