Event-Specific Drinking in the General Population

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ABSTRACT. Objective: It has been well established that college students engage in heavy drinking during specific social events; however, within the general population, evidence of event-specific drinking has been largely indirect. The present study therefore aimed to investigate the temporal variability in daily alcohol consumption in the winter holiday months among residents of a large metropolitan area. **Method:** A random-digit-dialing telephone survey was conducted of residents who drank alcohol at least once per month. During a 5-week period beginning December 1, 2009, the number of drinks consumed on each day within the past week was collected for 578 participants. **Results:** Weekly variation in alcohol consumption peaked on Fridays and Saturdays and was particularly high on Christmas and New Year's Eve. Mean drink consumption was significantly higher on Christmas and New Year's Eve compared with most weekends within the sampling period. **Conclusions:** The present findings provide the first direct evidence, with temporal specificity, that alcohol consumption within the general population is highly event specific. Targeted intervention strategies similar to those used within college student samples may be appropriate for reducing or preventing alcohol-related harmful events on a population level. (*J. Stud. Alcohol Drugs, 75,* 968–972, 2014)

IT IS NOW WELL ESTABLISHED that specific social events are associated with heavy alcohol consumption and alcohol-related problems (Del Boca et al., 2004; Mäkelä et al., 2005; Neighbors et al., 2005, 2011; Poikolainen et al., 2002). College students have been the most examined population of event-specific drinking, showing elevated drinking patterns on holidays (New Year's Eve, 4th of July, St. Patrick's Day), on special occasions (21st birthdays and graduation), and at various sporting events (Beets et al., 2009; Greenbaum et al., 2005; Lee et al., 2006; Neighbors et al., 2005, 2011; Nelson and Wechsler, 2003; Tremblay et al., 2010). Their drinking trajectories have shown that heavy episodic drinking is particularly higher on some events (New Year's Eve, 21st birthday) compared with others and that the number of drinks and proportion of students drinking heavily are much higher during the start of each semester (Del Boca et al., 2004; Nelson and Wechsler, 2003).

In the general population, however, evidence of event-specific heavy alcohol consumption has been largely extrapolated from alcohol sales data and the temporal variation of alcohol-related hospital admissions and deaths. Findings from Finland have shown that increases in alcohol sales are closely related to increases in fatal alcohol poisonings, which peak during national holidays of May Day, Midsummer Day, and Christmas (Lee et al., 2006; Poikolainen et al., 2002). Other research, from Australia, has found that ambulance attendances, emergency department presentations, and hospital admissions related to acute alcohol intoxication were more pronounced in the lead up to national public holidays (Lloyd et al., 2013).

Although combined these findings are an indication of heavy alcohol consumption–related harmful events, they do not provide a first-hand account of the amount consumed or frequency of consumption. To date, self-reported event-related alcohol consumption among nonstudent samples has been documented only a few times and with limited temporal specificity. Although these studies have shown that a much higher proportion of the population reports drinking during December and January, with consumption during the last 2 weeks of December about 70% higher than during other weeks of the year (Lemmens and Knibbe, 1993; Uitenbroek, 1996), research has previously not examined general population drinking patterns in relation to specific holidays or social events. The present study therefore aimed to investigate the temporal variability in daily drinking among residents of a large metropolitan area in the winter holiday months.

Method

A general-population telephone survey of adults (19 years and older) was conducted in the greater Toronto metropolitan area. The survey, which used random-digit dialing to select households, was conducted to recruit participants for a randomized controlled trial to evaluate the impact of a pamphlet-based normative feedback intervention for problem drinkers (see Cunningham et al., 2008, for detailed method). A total of 101,122 households were contacted. Participants were selected from all adult residents in the household who drank alcohol at least once per month by surveying the potential participant with the most recent birthday. Of the contacted households, 29,790 provided immediate refusal

to participate, 42,077 claimed that no adult in the household drank once per month or more, and of the 29,555 remaining households, 14,009 had an adult who agreed to participate. The survey collected information on respondents' current drinking, including alcohol consumption on each day of the week preceding the survey, and severity of alcohol misuse using the abbreviated Alcohol Use Disorders Identification Test–C (AUDIT-C) questionnaire (Babor et al., 1989; Bush et al., 1998).

Concentrating on drinking patterns during the winter holiday months, we examined respondent data within a 5-week period starting December 1, 2009, and ending January 4, 2010, of individuals who reported drinking at least one alcoholic drink during the past week. Of the 14,009 respondents interviewed, 607 provided information on the past 1 week of their drinking habits during this period, and 578 of those reported having had at least one drink. Overall, data for analyses were used from 578 individuals who drank at least one alcoholic drink in the past week. This research was approved by the standing ethics review committee of the Centre for Addiction and Mental Health.

Independent t tests were conducted to compare alcohol consumption between December 25 and all other weekends and December 31 and all other weekends, respectively. Mean weekend drinking consisted of alcohol consumption on Fridays and Saturdays. Subjects whose drinking data overlapped from one weekend onto the next (e.g., 7-day drinking data from Saturday to Friday) were excluded from these analyses. Comparisons between December 25 and the December 25th weekend and between December 31 and the January 2nd weekend were not conducted because they used the same subjects' data and thus did not seem appropriate for an independent samples test.

Results

Examining characteristics of the 578 respondents, the mean (SD) age was 50.4 (15.6) years, 52% were male, 69% were married or living in a common-law relationship, 61% were employed full or part time, and 77% had some postsecondary education. The mean (SD) total AUDIT-C score for this sample was 5.7 (3.6).

Figure 1 displays the trajectory of mean number of alcoholic drinks consumed on each day during a 5-week period of the winter holiday season (starting December 1). In general, a pattern can be observed in this figure, such that weekly increases in drinking peak on Fridays and Saturdays. In addition, elevations in drinking are particularly high on Christmas (Friday, December 25) and New Year's Eve (Thursday, December 31), with the highest number of drinks consumed on New Year's Eve, a non-weekend day. On average, respondents reported a mean (SD) of 2.8 (2.1) drinking days. Independent t tests comparing Christmas with other weekend drinking revealed that alcoholic drink consumption

for the entire sample (Figure 1a) was significantly higher on Christmas than the December 11th weekend, $t(105) = -2.13$, $p = .035$, and the January 1st weekend, $t(220) = -2.93$, $p = .004$, and marginally greater than the December 4th weekend, $t(156) = -1.96$, $p = .051$, and the December 18th weekend, $t(115) = -1.93$, $p = .056$. Further, significantly more drinks were consumed on New Year's Eve than during any of the first three weekends in December: the December 4th weekend, $t(187) = -2.71$, $p = .007$; December 11th weekend, $t(175) = -2.92$, $p = .004$; and December 18th weekend, $t(177) = -2.72$, $p = .007$.

Exploring gender differences in alcohol consumption during the same period, Figure 1b shows similar drinking patterns between the two genders. A one-way analysis of variance examining variation in alcohol consumption between the two genders revealed that compared with females, males drank significantly more during the week, $F(1, 577) = 18.87$, $p < .001$, and on weekends, $F(1, 296) = 6.65$, $p = .010$, and marginally more on New Year's Eve, $F(1, 131) = 3.648$, $p = .058$.

Discussion

Consumption of alcohol is greater on weekends than during the week and is at its peak on celebratory days of the winter holiday months (Christmas and New Year's Eve). Previous research has demonstrated these findings in convenience samples of first-year college students (Del Boca et al., 2004; Tremblay et al., 2010); however, the current study demonstrated this in a representative sample of drinkers from the general population. Although it is well known through media pieces about drunk driving during the holidays and special enforcement activities targeting those times that alcohol consumption is particularly high around the winter holiday season, this has not been previously quantified. We provide the first direct evidence that, within the general population, drinking is heaviest on holidays, and when celebratory events also happen to fall on the weekend, the amount of alcohol consumed is even greater.

Heavy episodic drinking on weekends, holidays, or their combination certainly carries significant health-related risks and consequences. Event-specific drinking among students has been associated with hangovers, vomiting, blackouts, driving after drinking, and injury (Glassman et al., 2010; Lewis et al., 2009). Alcohol-related offenses following college football games are particularly noteworthy, being associated with arrests for drinking and driving, disorderly conduct, and liquor law violations (Rees and Schnepel, 2009). In the general population, increased risk of alcohol-related hospital admissions and deaths also has been shown to be particularly high on Fridays and Saturdays as well on the days surrounding each holiday—an indication that heavy alcohol intoxication occurs on the day preceding and during
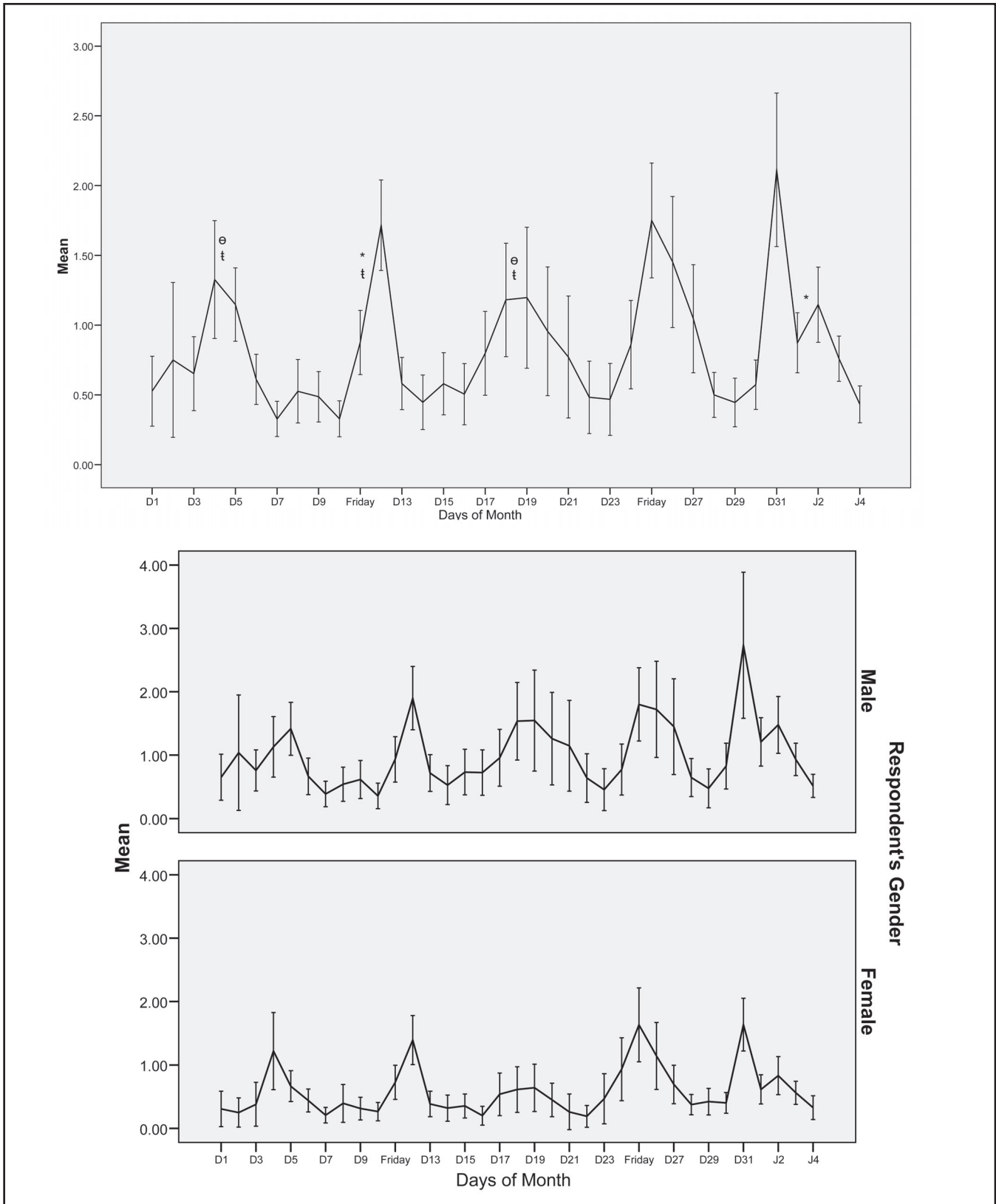
FIGURE 1.   Daily mean alcohol consumption over a 5-week period starting December 1 (D1) for entire sample (a) and sample segregated based on gender (b). Error bars denote 95% confidence interval. *refers to significant difference between D25 and weekend ($p < .05$); θ refers to marginally significant difference between D25 (Christmas) and weekend ($p < .06$); ŧ refers to significant difference between D31 (New Year's Eve) and weekend ($p < .05$).

the holiday day itself and results in fatalities the following day (Lloyd et al., 2013; Mäkelä et al., 2005).

Some evidence among college students suggests that increased risk of experiencing negative drinking consequences typically occurs in light drinkers who drink heavily only on special occasions rather than those who are typically heavy drinkers (Greenbaum et al., 2005; Lewis et al., 2009; Neal and Carey, 2007). Previous accounts in college student samples indicating that men and women exhibit similar absolute drinking trajectories, albeit a greater tendency in consuming higher levels of alcohol among men (Tremblay et al., 2010), have also been confirmed presently in the general population. Such drinking patterns certainly help explain similarities in temporal patterns of alcohol-related consequences among both genders and suggest that intervention and prevention efforts targeting high-risk special events where students engage in heavy drinking on college campuses may be well warranted for the general population (Glassman et al., 2010; Neighbors et al., 2007; Nelson and Wechsler, 2003; Poikolainen et al., 2002).

Considering that, in the month of December, there are more alcohol sales, consumption, and alcohol-related harmful events and deaths (Carpenter, 2003; Lemmens and Knibbe, 1993; Lloyd et al., 2013; Mäkelä et al., 2005; Uitenbroek, 1996), heavy drinking education and prevention strategies around Christmas and New Year's celebrations need to be implemented on a population level. Specifically, some of these strategies could include providing educational marketing campaigns on social drinking norms and alcohol-related consequences, restricting alcohol advertising and/or increasing alcohol prices during December, having greater police enforcement of drinking and driving, and encouraging the use of public transit and designated drivers (Neighbors et al., 2007). In addition, because this time of the year is also filled with office holiday parties during which people tend to drink heavily, future intervention efforts could incorporate harm-reduction strategies specifically geared toward these special occasions.

Several limitations to this research should be acknowledged. Exploring variation in daily alcohol consumption, the present study specifically focused on a period within the calendar year that included several events commonly associated with drinking. As this article presents findings that may apply only for the winter holiday months, future research could explore variation in drinking during other parts of the year or throughout the entire year. Further, although gender differences in alcohol consumption were examined, the research could have benefited from investigating variation in daily alcohol consumption as a function of demographic variables such as age, employment status, and education. However, although these analyses would certainly be informative, they necessitate a larger sample size. Future research could also explore qualitative differences in daily alcohol consumption within the gen-eral population, examining the types of alcoholic beverages consumed as well as the drinking venue.

Overall, the present findings provide direct, quantifiable evidence that alcohol consumption within the general population is highly event specific. Thus, targeted interventions focusing on these specific events may be appropriate for reducing or preventing the alcohol-related harmful consequences associated with these events.

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