



Method of transportation and drinking among club patrons



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ABSTRACT

Objective: The current study examines the variation in alcohol use among nightclub patrons under three transportation conditions: those who departed from a club using modes of transportation other than cars or motorcycles (e.g., pedestrians, bicyclists, sub-way riders); those who were passengers of drivers (auto/taxi passenger patrons); and those who drove from the club (driving patrons). We seek to determine whether patrons' choice for how to leave the club contributes to their risk, as assessed by blood alcohol concentrations (BAC), after controlling for other factors that may contribute to their BAC including demographic characteristics and social drinking group influences.

Methods: Data were collected from social drinking groups as they entered and exited clubs for 71 different evenings at ten clubs from 2010 through 2012. Using portal methodology, a research site was established proximal to club entrances. Each individual participant provided data on themselves and others in their group. The present analyses are based upon 1833 individuals who completed both entrance and exit data. Our outcome variable is blood alcohol content (BAC) based upon breath tests attained from patrons at entrance and exit from the club. Independent variables include method of transportation, social group characteristics, drug use, and personal characteristics. We use step-wise multiple regressions to predict entrance BAC, change in BAC from entrance to exit, and exit BAC: first entering individual demographic characteristics, then entering group characteristics, then drug use, and finally entering method of transportation (two dummy coded variables such that drivers are the referent category).

Results: In sum, in all three of our analyses, only three variables are consistently predictive of BAC: presence of a group member who is frequently drunk and non-driving modes of transportation, either being the passenger or taking alternate methods of transportation. In particular, taking an alternate form of transportation was consistently and strongly predictive of higher BAC.

Conclusions: Additional public health messages are needed to address patrons who are no longer drinking and driving but who are nonetheless engaged in high levels of drinking that may lead to various risky outcomes, for example: being targeted for physical and/or sexual assault, pedestrian accidents, and other adverse consequences. These risks are not addressed by the focus on drinking and driving. Key messages appropriate for patrons who use alternate transportation might include devising a safety plan before entering the club and a focus on sobering up before leaving.

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1. Introduction

Research in the U.S. concerning alcohol use and methods of transportation has focused primarily on prevalence of and interventions on drinking and driving (Caudill, Harding, & Moore, 2000; Harding, Caudill, & Moore, 2001; Rivara et al., 2007). Based upon prior research findings, effective interventions need to target passengers as well as drivers (Cartwright & Asbridge, 2011; Johnson, Voas, & Miller, 2012) to understand the dynamics of drinking groups (individuals who arrive at and leave drinking establishments together) in order to enhance the effectiveness of risk reduction efforts among young adults ages 18–25 (Johnson et al., 2012; Lange, Reed, Johnson, & Voas, 2006). These young adults are in the age group with the highest percentage of drivers in crashes who are under the influence of alcohol (National Highway Traffic Safety Administration, 2012, April). The efforts to prevent injuries resulting from driving under the influence of alcohol have been generally effective. With the combined efforts of activism, public health campaigns, and increased policy and enforcement efforts, alcohol-related driving deaths have declined over the past three decades (US Department of Transportation, 2008; Wells, Kelly, Golub, Grov, & Parsons, 2010).

However, public health campaigns that emphasize the “don’t drink and drive” message have been criticized for unintentionally sending a message that, as long as you don’t drink and drive or ride with an impaired driver, you can drink to excess while out for the evening and be safe (Ditter et al., 2005; Harding et al., 2001). In addition, the focus on vehicle-related safety overlooks other fundamental issues related to alcohol use and exiting a drinking venue safely when private vehicles are not involved, such as taking the subway, walking or riding a bicycle. These concerns include: choosing dangerous levels of alcohol consumption; increased risk of pedestrian–auto accidents; and an increased risk for involvement (both victimization and perpetration) in petty/misdemeanor and serious crimes in the area surrounding the drinking establishment.

1.1. Choosing dangerous levels of alcohol consumption

First, passengers in drinking groups who have chosen a designated driver may reduce their normal concern with heavy drinking; thereby raising their risk of drinking to intoxication or acute intoxication (alcohol poisoning). Some argue that the relationship between designated drivers and passenger consumption is unclear, in that heavier drinkers are more likely to avoid legal consequences of driving under the influence by strategies other than a designated driver such as: taking a cab, walking, or simply relying on a friend who has had less to drink (Caudill, Rogers, Howard, Frissell, & Harding, 2010). However, one laboratory study (Rivara et al., 2007) found that the use of a designated driver resulted in almost half of the participants (ages 21–34) drinking more on that occasion than they usually drink. More than a third of the participants drank at least three more drinks than they usually drank when a designated driver was present. Another lab study (Harding et al., 2001) found that small but significant percentages (15–30%) converted from a typically low blood alcohol concentration (BAC) of 0.08 to a high BAC (0.11) because there was a designated driver. It should be noted that this study defined “lower risk” as $BAC < .10$ and “higher risk” as $BAC \geq .10$, which varies from the current U.S. legal definition of intoxication as a $BAC \geq .08$ and the recent recommendation from the National Transportation Safety Board that the legal limit for driving be lowered to a $BAC \geq .05$ (National Transportation Safety Board, 2013). In studies where naturally formed groups were used, cueing drivers to the risks of drunk driving significantly decreased their BAC (Johnson & Clapp, 2011) while cueing riders to know their limits on drinking increased their BAC, with those in a group who had increased expectations for group drinking correspondingly having higher BACs (Lange et al., 2006).

1.2. Risk of pedestrian–auto accidents

In addition, there is a higher risk for those leaving bars and clubs under the influence of alcohol and on foot to be in more (and more severe) pedestrian accidents involving autos. A study of pedestrian accidents in Vancouver found 32 hotspots; 21 (65%) of the hotspots were in the immediate vicinity of bars (Schuurman, Cinnamon, Crooks, & Hameed, 2009). Among pedestrians in auto-involved accidents, those who had used any alcohol ($BAC > .01$) were more likely to make risky decisions about street crossing (against the signal, midblock) and had higher severity of injuries and longer hospital stays (Dultz et al., 2011). In a study to assess contributors to various forms of trauma among Emergency Room patients, the presence of a BAC greater than .20 was a significant predictor of those who were injured in pedestrian–auto accidents, but was not a predictor of those injured through other forms of trauma (Ryb, Dischinger, Kufera, & Soderstrom, 2007).

1.3. Risk for involvement in petty/misdemeanor and serious crimes

Finally, bars are a well-documented area for increased levels of crime (Brower & Carroll, 2007) as intoxicated individuals are outside and within close proximity to the venue. Rates of nonviolent crime (vandalism, nuisance crime, public alcohol consumption, driving while intoxicated, and underage alcohol possession/consumption,) and violent crime (assault, rape, robbery, and total violent crime) are related to the density of alcohol establishments, with stronger associations found for on-premise consumption locations, such as bars and clubs (Toomey, Erickson, Carlin, Lenk, et al., 2012; Toomey, Erickson, Carlin, Quick, et al., 2012). Further, in a study of the expanded weekend hours of the Washington DC Metro system, Jackson and Owens (2011) found that the number of drunk-driving arrests were reduced with expanded availability of trains

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