Alcohol industry sponsorship and alcohol-related harms in Australian university sportspeople/athletes

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Abstract

Introduction and Aims. Although there is evidence that alcohol sponsorship in sport is related to greater drinking, there is no empirical research on whether alcohol sponsorship is associated with alcohol-related harms. We examined whether there is an association between receipt of alcohol industry sponsorship, and attendance at alcohol sponsor’s drinking establishments (e.g. bars), and alcohol-related aggression and antisocial behaviour in university students who play sport. Design and Methods. University sportspersons (n = 652) completed surveys (response rate >80%) assessing receipt of alcohol industry sponsorship, attendance at sponsor’s establishments and confounders [i.e. age, gender, sport type, location and alcohol consumption measured by Alcohol Use Disorders Identification Test—alcohol consumption (AUDIT-C) scores]. Participants also completed measures assessing displays and receipt of aggressive and antisocial behaviours (e.g. assaults, unwanted sexual advance, vandalism). Results. Logistic regression models including confounders and reported attendance at alcohol sponsor’s establishments showed that sportspersons receiving alcohol industry sponsorship were more likely to have been the victim of aggression (adjusted odds ratio 2.62, 95% confidence interval 1.22–5.64). Attending an alcohol sponsor’s establishment was not associated with higher rates of other aggressive or antisocial behaviour. However, significant associations were found between AUDIT-C scores and having displayed or received aggression, and having damaged or had property damaged. Male sportspersons were more likely to have displayed and received aggressive and antisocial behaviour. Discussion and Conclusions. Higher AUDIT-C scores, gender and receipt of alcohol industry sponsorship were associated with alcohol-related aggression/antisocial behaviours in university sportspersons. Sport administrators should consider action to reduce the harms associated with excessive alcohol consumption and alcohol industry sponsorship in sport. [O’Brien KS, Lynott D, Miller PG. Alcohol industry sponsorship and alcohol-related harms in Australian university sportspeople/athletes. Drug Alcohol Rev 2013;32:241–247]

Key words: sport, alcohol, sponsorship, drinking, aggression.

Introduction

Alcohol is a leading cause of mortality and morbidity [1], and ranked above other illicit drugs in terms of social, health and financial costs [2]. Excessive alcohol consumption is particularly problematic in sport where rates of heavy episodic drinking appear to be higher among athletes than their non-sporting peers [3–8]. Given the centrality of sport in Western society and the promotion of alcohol by major sporting codes, research examining drinking and associated harms in sport is of importance.

Although there are a handful of studies in populations outside of the USA, the bulk of research on hazardous drinking in sportspersons has been in US college athletes (e.g. [8,9]). This research shows that hazardous drinking is highly prevalent and associated with driving while intoxicated, having unplanned and unprotected sex, antisocial behaviour and violence [8,9]. A consistent finding in US studies is that college athletes have higher rates of alcohol-related aggression and antisocial behaviour (e.g. fighting, sexual assault, vandalism [9,10]). For example, in one multi-campus study [10], athletes were involved in 19% of all reported sexual assaults on campuses, yet they made up only 3% of these university populations. Surprisingly, there is little research on alcohol-related aggression or antisocial behaviour in university sporting populations outside the USA, and the reasons for the increased aggression
and antisocial behaviour in these populations are poorly understood.

While contentious, some scholars suggest that the masculine/macho culture of sport attracts and/or socialises aggression in those who participate [11]. However, psychological research has found no difference between contact and non-contact sports or between sportspersons and non-sportspersons on measures of aggressive personality [12]. Given that university athletes appear to drink more than their non-sporting university peers, it is also plausible that the higher rates of alcohol-related aggression and antisocial behaviour reported in US studies [8–10] reflect this heavier alcohol consumption, or indeed an interaction between consumption and some sporting cultures. Similarly, greater exposure to settings where alcohol is consumed and alcohol-related aggression most commonly occurs (e.g. bars) may contribute to these differences [13]. Recent research suggests that both increased consumption and attendance at venues where alcohol is served and violence occurs is associated with the receipt of alcohol-related industry sponsorship [14,15]. Thus, the structures surrounding alcohol industry sponsorship of sport may contribute to alcohol-related aggression and antisocial behaviours.

Alcohol industry sponsorship of sport

Alcohol industry-related sponsorship refers not only to payments for sports naming rights (e.g. Heineken Tennis/Football, Anheuser-Busch National Basketball Association/Major League Baseball), which are in effect advertising, but also to less conspicuous but potentially more harmful, ‘direct to user’ alcohol industry sponsorship. This ‘direct to user’ form of alcohol industry sponsorship appears common in Australia, New Zealand, Ireland, Germany, South Africa and the UK, and encompasses practices such as payment of team/club fees, uniform/travel costs and provision of alcohol-related products by alcohol industries (e.g. bars, hotels, pubs, taverns).

Recent research on this form of sport sponsorship by our research group found that exposure to such sponsorship was associated with more hazardous drinking after accounting for confounders (i.e. first intoxicated under 16 years, age, gender). Additionally, the requirement of sportspersons to attend their sponsor’s establishment after sports games and practices was also a predictor of more hazardous drinking [14,15]. Both the observed association between alcohol sponsorship and drinking levels, and expectation that sponsored sportspersons drink at their sponsor’s establishments (settings where alcohol-related violence is common [11]), may be associated with increased rates of aggressive and antisocial behaviours in sportspersons. However, this has not been examined empirically.

Alcohol industry sponsorship (i.e. free/discounted alcohol, cash from alcohol industries such as bars or hotels) is common in Australasia and Europe, where controls for such sponsorships are being debated. However, there is no research examining whether such sponsorships may be associated with interpersonal harms in sportspersons and indeed those around them. We think that alcohol industry sponsorship might be associated with greater rates of alcohol-related aggression for two reasons. First, because previous work [14,15] suggests that those in receipt of alcohol sponsorship drink in a more hazardous manner, which in turn may lead to higher levels of aggressive behaviour due to intoxication. Second, that sponsorship has also been found to be associated with an expectancy that sponsored sportspersons drink in a more hazardous manner, which in turn may lead to higher levels of aggressive behaviour due to intoxication. Thus, alcohol sponsorship may be associated with greater harms through either greater drinking levels and/or more frequent attendance at sponsor’s drinking venues (e.g. pubs, bars). Here we examine whether alcohol industry sponsorship is associated with higher rates of alcohol-related aggression and antisocial behaviour and whether that relationship is maintained once drinking levels and attendance at sponsor’s establishments is taken into account.

In summary, the aim of the present research was to explore whether alcohol industry sponsorship of sportspersons is associated with higher rates of displaying and/or receiving aggressive and antisocial behaviour. If receipt of alcohol sponsorship is an important factor in these negative behaviours, we would expect receipt of alcohol sponsorship, and attendance at a sponsor’s drinking establishment (e.g. bars, pubs, clubs), to be significantly associated with these negative behaviours after accounting for all other confounders in regression models.

Methods

Participants and procedures

A convenience sample of 652 in-season university students who play sport (51% female) over the age of 18 years (mean 20.74, SD 3.28 years; range 18–45 years) was recruited (response rate 80.4%) from two large multi-campus Australian universities in the state of New South Wales (population approximately 7.1 million). The majority (n = 491; 75%) of participants played in club/social level sports, with 126 elite-provincial/state level sportspersons and 35 elite-national and/or international level. It should be noted that outside of North America, active participation in university/college organised sport competitions is rare.
More commonly, university sportspeople in Australia, Ireland, New Zealand, South Africa and the UK participate in local, state or nationally administered sport competitions. Thus, although the present sample is gathered in university students, the participants play the majority of their sport outside the university setting.

Measures

The questionnaire included demographic questions (e.g. age, gender, sporting participation), the Alcohol Use Disorders Identification Test (AUDIT), measures of alcohol-related aggression and antisocial behaviours, and items assessing receipt of alcohol industry sponsorship.

The AUDIT is a 10-item questionnaire developed to identify persons whose alcohol consumption is hazardous or harmful [16]. The AUDIT has three subscales assessing: alcohol consumption (AUDIT-C; three items assessing frequency and quantity of alcohol consumption), symptoms of alcohol dependence (three items) and hazardous consequences of drinking (four items). Because the AUDIT total score encompasses measures of negative consequences (harm), we used the AUDIT-C (alcohol consumption) in analyses.

Aggressive and antisocial behaviours carried out by participants when intoxicated in the past 12 months were assessed using questions taken from established measures of alcohol-related second-hand effects used in US national university alcohol surveys [8,17,18]. Participants were asked whether they had, in the past 12 months, ‘abused, insulted or humiliated someone’, ‘hit, pushed or assaulted someone’, ‘damaged others property’ or ‘made an unwanted sexual advance’ while intoxicated. Participants were also asked if they had been the victim of any of the aggressive and antisocial behaviours described above. We also asked participants, ‘have you been the victim of a sexual assault’ due to someone else’s intoxication in the past 12 months.

Items from previous studies were used to assess receipt of alcohol industry sponsorship [14,15]. Alcohol sponsorship questions asked whether the participant, their team or club/organisation currently received (yes/no) sponsorship (e.g. discounted/free alcohol, money) from an alcohol-related industry (e.g. bars, hotels). Participants were also asked to report whether they attended their sponsor’s establishment (e.g. clubs, bars) after games/practices (yes/no) as part of the association they had with their alcohol-related industry sponsor.

Procedure

The extent and level of alcohol industry sponsorship in Australian university students who play sport is unknown. However, previous research in a convenience sample of New Zealand sportspeople (university and non-university students) found that 48% of sportspeople were in receipt of some form of alcohol industry sponsorship [14]. We therefore took a similar approach to that reported in this previous study (for further procedural details also see [15,19]). Participants were approached at community and campus sports grounds (e.g. hockey, football, rugby, cricket) and non-sporting (e.g. campus food and study spaces) venues. Upon arrival at data collection venues, researchers approached the nearest sportsperson(s) and invited him or her to participate in the study. Following acceptance or rejection of the invitation, the data collector again approached the nearest sportsperson(s) for participation and so on. Researchers were on hand to provide clarification for participant queries. Participants were offered a small snack/drink as an incentive for participation and were informed that their participation would remain confidential and that no names or identifying information were required on the questionnaire. The questionnaire took approximately 10 min to complete. University of Western Sydney and Wollongong human ethics committees reviewed and granted approval for the study.

Statistical analyses

To reduce the number of tests performed (and type I error), and because the questions assessing abused/insulted/humiliated and pushed/hit/assaulted represent aggressive behaviour, we collapsed these items and created two categorical variables ‘displayed aggression’ and ‘received aggression’. Participants who reported humiliating and/or assaulting someone while intoxicated were coded as having displayed aggression. Similarly, those reporting being abused/humiliated/assaulted by others were coded as having been victims of aggression. Logistic regression models were used to assess associations with aggressive/antisocial behaviours. Regression models included factors known to be related to violence and abuse [20,21], that is, age, gender, location (rural vs. urban campuses), individual versus team sport participation and AUDIT-C scores. Receipt of alcohol industry sponsorship, and attendance at alcohol sponsor’s establishments, were also entered simultaneously. We report odds ratios and adjusted odds ratios with 95% confidence intervals.

Results

After adjusting for all variables in final models, being a male athlete and participating in a team sport was associated with several aggressive or antisocial behaviours (see Tables 1,2). Male sportspeople were more likely
### Table 1. Regression models for participant-reported alcohol-related displays of aggressive and antisocial behaviours due to intoxication

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Displayed aggression</th>
<th></th>
<th>Damaged property</th>
<th></th>
<th>Made unwanted sexual advance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>Adjusted OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>Adjusted OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>Adjusted OR (95% CI)</td>
</tr>
<tr>
<td>Age</td>
<td>1.03 (0.97, 1.09)</td>
<td>1.05 (0.98, 1.12)</td>
<td>0.98 (0.92, 1.04)</td>
<td>0.98 (0.91, 1.06)</td>
<td>1.07 (0.99, 1.15)*</td>
<td>1.08 (0.98, 1.17)</td>
</tr>
<tr>
<td>Gender, 0 = female, 1 = male</td>
<td>2.43 (1.76, 3.37)***</td>
<td>1.82 (1.26, 2.69)***</td>
<td>3.76 (2.62, 5.39)***</td>
<td>3.03 (2.05, 4.49)***</td>
<td>1.73 (1.01, 2.96)*</td>
<td>1.35 (0.76, 2.39)</td>
</tr>
<tr>
<td>Team/individual sport, 0 = individual, 1 = team</td>
<td>1.25 (0.91, 1.73)</td>
<td>1.09 (0.69, 1.50)</td>
<td>1.62 (1.13, 2.31)***</td>
<td>1.42 (0.93, 2.14)</td>
<td>1.47 (0.83, 2.59)</td>
<td>1.20 (0.66, 2.21)</td>
</tr>
<tr>
<td>Location, 0 = rural, 1 = urban</td>
<td>0.99 (0.73, 1.37)</td>
<td>1.42 (0.97, 2.06)</td>
<td>1.08 (0.77, 1.51)</td>
<td>1.19 (0.80, 1.64)</td>
<td>1.59 (0.92, 2.74)</td>
<td>1.38 (0.78, 2.44)</td>
</tr>
<tr>
<td>AUDIT-C</td>
<td>1.51 (1.40, 1.64)***</td>
<td>1.50 (1.38, 1.63)***</td>
<td>1.49 (1.36, 1.63)***</td>
<td>1.46 (1.33, 1.59)***</td>
<td>1.27 (1.14, 1.43)***</td>
<td>1.23 (1.09, 1.39)*</td>
</tr>
<tr>
<td>Attend sponsor’s establishment, 0 = no, 1 = yes</td>
<td>1.54 (1.07, 2.22)***</td>
<td>1.13 (0.51, 2.51)</td>
<td>1.38 (0.95, 2.01)</td>
<td>1.33 (0.61, 2.94)</td>
<td>1.82 (1.05, 3.16)***</td>
<td>1.21 (0.44, 3.31)</td>
</tr>
<tr>
<td>Alcohol sponsorship, 0 = no, 1 = yes</td>
<td>1.64 (1.16, 2.31)***</td>
<td>1.32 (0.62, 2.81)</td>
<td>1.52 (1.07, 2.16)*</td>
<td>1.34 (0.64, 2.83)</td>
<td>2.01 (1.78, 3.42)***</td>
<td>1.92 (0.72, 5.07)</td>
</tr>
</tbody>
</table>

*Significant at the $P < 0.05$ level, using non-users as the baseline. **Significant at the $P < 0.01$ level. ***Significant at the $P < 0.001$ level. AUDIT-C, Alcohol Use Disorders Identification Test—alcohol consumption; CI, confidence interval; OR, odds ratio.

### Table 2. Regression models for participant-reported alcohol-related receipt of aggressive and antisocial behaviour from intoxicated others

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Received aggression</th>
<th></th>
<th>Property damaged</th>
<th></th>
<th>Sexually assaulted</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>Adjusted OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>Adjusted OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>Adjusted OR (95% CI)</td>
</tr>
<tr>
<td>Age</td>
<td>1.08 (1.02, 1.15)*</td>
<td>1.09 (1.02, 1.16)*</td>
<td>1.04 (0.99, 1.10)</td>
<td>1.04 (0.98, 1.10)</td>
<td>1.03 (0.91, 1.17)</td>
<td>1.03 (0.90, 1.17)</td>
</tr>
<tr>
<td>Gender, 0 = female, 1 = male</td>
<td>1.83 (1.32, 2.53)*</td>
<td>1.50 (1.06, 2.11)*</td>
<td>1.52 (1.07, 2.18)*</td>
<td>1.37 (0.94, 1.98)*</td>
<td>0.63 (0.27, 1.45)</td>
<td>0.60 (0.24, 1.36)</td>
</tr>
<tr>
<td>Team/individual sport, 0 = individual, 1 = team</td>
<td>1.31 (0.94, 1.81)</td>
<td>1.06 (0.74, 1.52)</td>
<td>1.43 (0.99, 2.08)</td>
<td>1.28 (0.86, 1.90)</td>
<td>0.88 (0.39, 2.03)</td>
<td>0.73 (0.30, 1.77)</td>
</tr>
<tr>
<td>Location, 0 = rural, 1 = urban</td>
<td>1.26 (0.92, 1.74)</td>
<td>1.12 (0.79, 1.59)</td>
<td>1.59 (1.11, 2.78)***</td>
<td>1.50 (1.03, 2.18)*</td>
<td>1.88 (0.79, 4.46)</td>
<td>1.80 (0.74, 4.35)</td>
</tr>
<tr>
<td>AUDIT-C</td>
<td>1.21 (1.14, 1.30)***</td>
<td>1.18 (1.11, 1.27)***</td>
<td>1.49 (1.36, 1.63)***</td>
<td>1.10 (1.02, 1.18)*</td>
<td>1.08 (0.92, 1.26)</td>
<td>1.07 (0.90, 1.27)</td>
</tr>
<tr>
<td>Attend sponsor’s establishment, 0 = no, 1 = yes</td>
<td>1.84 (1.26, 2.69)***</td>
<td>1.59 (0.71, 3.58)</td>
<td>1.41 (0.95, 2.08)</td>
<td>1.25 (0.59, 2.63)</td>
<td>1.43 (0.60, 3.40)</td>
<td>1.54 (0.38, 6.27)</td>
</tr>
<tr>
<td>Alcohol sponsorship, 0 = no, 1 = yes</td>
<td>2.12 (1.49, 3.04)***</td>
<td>2.62 (1.22, 5.64)*</td>
<td>1.52 (1.05, 2.19)*</td>
<td>1.56 (0.77, 3.15)</td>
<td>1.78 (0.78, 4.05)</td>
<td>2.78 (0.73, 10.61)</td>
</tr>
</tbody>
</table>

*Significant at the $P < 0.05$ level, using non-users as the baseline. **Significant at the $P < 0.01$ level. ***Significant at the $P < 0.001$ level. AUDIT-C, Alcohol Use Disorders Identification Test—alcohol consumption; CI, confidence interval; OR, odds ratio.
than their female counterparts to report having displayed and received aggression, and to have damaged and have had property damaged, because of alcohol intoxication in the past year. Age was also positively associated with having experienced aggression from others due to alcohol intoxication.

Table 3 displays the proportions of participants reporting aggressive/antisocial behaviours according to whether they were alcohol industry-sponsored or not. Proportions for all aggressive and antisocial behaviours were greater for those receiving alcohol-related industry sponsorship compared with those not receiving alcohol industry sponsorship (see Table 3).

Despite numerous significant univariate associations, after accounting for all other variables in the models, sportspeople receiving alcohol industry sponsorship were only more likely to have reported receiving aggression from intoxicated others (adjusted odds ratio 2.62, 95% confidence interval 1.22–5.64). Instead, higher AUDIT-C scores were found to be associated with both displaying and receiving aggression, and damaging and having property damaged. However, AUDIT-C scores were not associated with greater rates of being sexually assaulted. Contrary to predictions, visiting an alcohol industry sponsor’s establishment was not associated with increased rates of aggressive or antisocial behaviour after accounting for other variables.

**Discussion**

Previous research has shown that receipt of alcohol industry sponsorship and attending a sponsor’s establishment are associated with more hazardous drinking [14,15]. However, no research had examined whether alcohol industry sponsorship is associated with increased rates of physical and social harms (e.g. aggression, vandalism, sexual assaults). The results of the present study suggest that receipt of alcohol industry sponsorship by university students who play sport is associated with higher rates of receiving aggressive behaviours (i.e. being abused/hit/assaulted) after accounting for other factors (i.e. age, gender, location, sport type, AUDIT-C scores and attending sponsor’s establishment). However, other aggressive and antisocial behaviours are largely explained by higher levels of alcohol consumption (AUDIT-C scores) and gender. Higher AUDIT-C scores were associated with all harms examined here, with the exception of being sexually assaulted.

Noteworthy was the significant associations between gender and alcohol-related aggression and antisocial behaviour. In the present study male sportspeople were significantly more likely to have reported having displayed and received aggression, and to have damaged property, and had property damaged due to intoxication. There was no association between gender and having made or received an inappropriate sexual advance/assault. This finding suggests that efforts to reduce alcohol-related aggression and antisocial behaviour in sport should perhaps be preferentially directed towards male sportspeople/athletes, rather than female sportspeople/athletes. Previous research has shown that increased exposure to public settings where alcohol is served is associated with greater reports of physical/sexual assaults [13]; however, in the present study attending alcohol industry sponsor’s establishments (i.e. pubs, taverns, clubs) was not associated with increased rates of any of the harms reported in the present study after accounting for other factors.

The study of alcohol-related aggression and antisocial behaviour in sportspeople/athletes has largely been ignored outside of US college populations. With the exception of two recent Australian studies [19,22], there had been no empirical research outside of the USA on this issue. The rates of alcohol-related aggression and antisocial behaviour in Australian university...
sportspeople appear to be higher than those displayed in their peers and potentially the general population. For example, the recent Australian National Drug Strategy household survey found that 5.7%, 1.1% and 1.7% of Australians aged 14+ years reported verbally abusing, physically abusing and/or damaging property due to alcohol [19]. While the age range of the sportspeople in the present study places them in a age category that is at high risk for these harms, we found that overall 54%, 17% and 34% of sportspeople reported verbally and physically abusing someone and damaging property, respectively. Thus, the rates of alcohol-related aggressive and antisocial behaviour in this population are concerning. However, very little is known about the reasons for these high rates other than those of the present study.

**Limitations**

A limitation of the present study is the lack of measures assessing other theoretical constructs thought to underpin aggression and antisocial behaviour in sport (e.g. risk taking, masculinity, trait aggression/hostility). Given the paucity of research in this area, research on these psychosocial constructs is of some importance. Additionally, although the study had a high response rate (>80%), the sample may not be representative of the theoretical Australian university sporting population and, as such, the present results may not generalise to other samples or nations. More extensive nationally representative surveys need to be conducted to address this problem, as none has been conducted to date. The results also need to be viewed with caution and simplistic interpretations avoided as there may be unmeasured confounders. For example, greater rates of alcohol-related aggression may result because some sports involve aggressive physical contact, and thus may attract individuals who enjoy or are predisposed to physical aggression, and are also more likely to receive alcohol industry sponsorship. While there is some research to suggest that contact sports do not have other aggressive and antisocial behaviours examined in the present study.

While acknowledging the potential limitations of the study, the research is germane to alcohol policy debate in several countries (e.g. Australia, New Zealand, South Africa, Ireland and the UK) that are considering restrictions on alcohol industry sponsorship and advertising in sport, and indeed on the role of alcohol more generally in sport. It seems uncontentious that the provision of resources from alcohol industries, whether financial or in the form of discounted and free alcohol, would be associated with greater levels of alcohol consumption. And given there is an association between levels of alcohol consumption and associated alcohol-related harm, the present findings are logical.

**Conclusions**

The present work is the first to examine associations between receipt of alcohol industry sponsorship in sportspeople/athletes and alcohol-related aggressive and antisocial behaviour. Alcohol industry sponsorship was associated with increased rates of receiving aggression, but AUDIT-C scores and the gender of the sportspeople were more important factors in most of the other aggressive and antisocial behaviours examined here. Clearly, other factors need to be explored with larger studies that have sufficient power to examine contextual, psychosocial and cultural factors. In the meantime, sports administrators, coaches and alcohol policy-makers should be aware of the problem of heavy drinking in sport and associated harms, and assess whether the perceived benefits of alcohol industry sponsorship of sportspeople outweigh the social and physical harms.

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**References**


