Demographic Risk Factors for Alcohol-Related Aggression In and Around Licensed Venues

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Received 16 April 2015; Revised 19 June 2015; Accepted 19 June 2015

Abstract

Aims: Few studies have examined the role of gender and both area-level and individual socio-economic status (SES) as independent predictors of alcohol-related aggression (ARA) in and around licensed venues.

Methods: The aim of the present study was to investigate the relationship between gender, area-level SES and individual SES (operationalised as occupational category) and ARA in and around licensed venues. The sample comprised 697 men and 649 women aged 16–47, who completed a patron intercept survey as part of a larger study assessing trends in harm and stakeholders’ views surrounding local community level interventions in dealing with alcohol-related problems in the night-time economy.

Results: Binary logistic regression analyses showed that age, gender, occupational category, area-level SES and level of intoxication at time of interview were all significant predictors of involvement in ARA. Being male doubled the odds of involvement in ARA, while age was a protective factor. Blue collar workers had more than double the odds of ARA involvement of professionals, while those living in the most socio-economically disadvantaged areas were over twice as likely to report experiencing ARA compared to those living in the most advantaged areas. However, assessment of the predictive model by gender revealed that effects of age, occupational category and area-level SES were restricted to male participants, with greater intoxication no longer predictive.

Conclusions: ARA among patrons was significantly more likely to occur among men, those in blue collar occupations, and individuals living in low SES areas, suggesting both individual and area-level disadvantage may play a role in ARA.

INTRODUCTION

Research has consistently outlined the contribution of alcohol in the facilitation of aggression, with alcohol involved in more than half of all violent crimes globally (Perrenen, 1991; World Health Organization, 2007), and recent Australian estimates indicating the presence of alcohol in up to 73% of all assaults (Collins and Lapsley, 2007). Further reports show an increase in verbal and physical violence outside licensed venues at times of high-alcohol use (i.e. between the hours of 8 pm to 6 am Friday to Sunday (Laslett et al., 2006)), with the majority of assaults occurring in the streets, lanes and footpaths outside venues (Ireland and Thommeny, 1993; Miller et al., 2011).

Although a patron’s characteristics have been found to moderate the relationship between alcohol and aggression in and around licensed venues (Quigley et al., 2003; Graham et al., 2006; Graham and Homel, 2008), few studies have directly examined the influence of both gender and socio-economic status (SES) on alcohol-related aggression (ARA) in and around these premises.

Of the research examining gender differences in drinking behaviour and aggression, findings show men are more likely to use direct forms of aggression, including physical and verbal assaults, while women engage in more indirect forms of aggression including spreading rumours and gossiping (Krienert and Vandiver, 2009). Research...
examining alcohol consumption has consistently shown men to drink greater quantities and more frequently than women, to engage in more risky episodic drinking and to be more frequently involved in instances of ARA (Miller et al., 2011).

However, a small amount of other research suggests women may have begun to adopt similar drinking and aggressive behaviour to men (Krienert and Vandiver, 2009). According to this ‘gender-convergence’ hypothesis, behavioural norms and expectations for women have changed along with changing societal roles (Bloomfield et al., 2001). In support of this theory, Hoaken and Phil (2000) found that, under high provocation, both sober and intoxicated women manifested aggression comparable to that of intoxicated men, as measured by the Taylor Aggression Paradigm (Taylor, 1967). More recently, Forsyth and Lennox (2010) conducted an observational study examining the severity and frequency of alcohol, aggression and alcohol-related violence in men and women attending licensed venues. While both genders exhibited similar patterns of drinking and aggressive behaviour, men were significantly more likely to have been involved in alcohol-related violence (Forsyth and Lennox, 2010). Given the situational norms of licensed premises, women who in general are less likely to engage in ARA may be more likely to do so in such a context.

The relationship between SES and ARA has yet to be appropriately evaluated. SES describes a person’s social and economic position in society. An individual’s SES is usually determined by several basic components, in particular the individual’s level of income, education and occupation, and neighbourhood status (Room, 2005). Research shows limited and conflicting evidence that area-level disadvantage is associated with increased substance use of residents (Karriker-Jaffe, 2011). For example, Giskes et al. (2011) found, in Melbourne, Australia, that area-level disadvantage was not associated with alcohol consumption in men and women. Similarly, studies looking at area-level disadvantage and ARA have shown mixed results. Breen et al. (2011) found that less socio-economic disadvantage was associated with higher levels of crimes that are commonly alcohol-related (e.g. assault), in 20 rural communities in New South Wales. However, Victoria Police (2009) data show those most implicated in alcohol-related public violence tend to come from outlying working class suburbs.

Studies that have looked at the association between individual level SES and ARA seem to suggest a stronger association between lower SES and ARA. In Scotland, Wright and Kariya (1997) reported that those involved in violent incidents were more likely to be affected by alcohol, unemployed and had higher levels of individual socio-economic deprivation than were gender and age-matched case controls. However, only 60% of involvement with violence was alcohol-related. Huckle et al. (2010), in New Zealand, found lower individual level SES (being unemployed, a student, and being in the lowest paid occupational groups) was associated with more alcohol-related disorder (physical fights, serious argument, and being forced to leave a place after drinking) for both men and women.

One study in particular examined the relationship between occupation and ARA. du Plessis et al. (2013) examined the prevalence of harmful alcohol use and involvement in aggressive behaviour in a sample of 108 plumbing and carpentry apprentices in Australia and found that 66% were consuming alcohol at harmful levels. Twenty-nine per cent of the sample reported abusing someone as a result of alcohol consumption, 17% had threatened someone harm and 17% reported causing harm to someone else as a result of drinking alcohol.

Given the lack of studies looking specifically at the roles of both individual level and area-level SES in relation to ARA in licensed premises, the aim of the present study was to investigate the independent relationships of each of area SES and individual SES (operationalised as occupation), with ARA in and around Australian licensed premises. Given the conflicting research in relation to gender differences in ARA, the impact of gender was also investigated, as well as whether gender interacted with SES in relation to ARA. Age, intoxication at time of interview and frequency of going out to licensed venues were included as predictors, to control for possible sources of bias. Based on the reviewed literature, it was predicted that individual level SES would be an independent predictor of involvement in ARA, for both men and women.

MATERIALS AND METHODS

Design

Data for the present study were collected as part of a larger study, Dealing with Alcohol-related problems in the Night-Time Economy (DANTE), which assessed trends in harm and stakeholders’ views surrounding local community level interventions in dealing with alcohol-related problems in the night-time economy (Miller et al., 2011), in Geelong and Newcastle, two regional cities in Australia. Data here analysed involved only participants interviewed in Geelong for the DANTE patron intercept study. Geelong, a regional city within 150 km of the Victorian state capital of Melbourne, has a higher median age, a lower median individual income and higher unemployment when compared to the average Australian population (Australian Bureau of Statistics, 2007a). As of 2011, records indicated a population of 250,651 (Australian Bureau of Statistics, 2012).

Participants

Of 3949 patrons attending licensed venues located within the main entertainment precincts of Geelong, who were interviewed for the patron intercept study, only 1346 patrons provided information for all relevant variables so were included in the analyses reported in this paper. This subsample consisted of 697 (51.8%) men and 649 (48.2%) women, aged between 16 and 47 (M = 23.79, SD = 5.38 years). Supplementary Table S1 displays age category, area-level SES, occupation, frequency of attendance at licensed venues, and involvement in ARA, for the full sample and for men and women separately.

Measures

The patron intercept survey consisted of 36 questions in seven domains. However, due to space limitations, only the domains that examine demographics and involvement in a fight are described. As measures were specifically written for the project, and did not consist of scales, scale reliability and validity cannot be reported.

Demographic details

Demographic information collected consisted of gender, year of birth, occupation and residential postcode. Year of birth was used to calculate age at the time of data collection. Postcode was used to calculate area-level SES, with the Australian Bureau of Statistics Postal Area Index of Relative Socio-Economic Disadvantage (Australian Bureau of Statistics, 2007b, 2008) determined for each postcode. The raw index score, ranked within the state of Victoria, was then converted using a quartile split into a categorical variable with four levels, ranging from SES level 1 (most disadvantaged) to SES level 4 (most advantaged). Self-reported occupation, where provided, was coded into seven occupational categories: professional, white collar, blue collar, retail, hospitality, student and not in the workforce (e.g. retired, carer).
Level of intoxication at time of interview
Participants self-reported their level of intoxication at the time of responding on an 11 point scale, where 0, not at all intoxicated, and 10, the drunkest they had ever been.

Frequency of attendance at licensed venues
Participants were asked how often they attended licensed venues such as bars and clubs. Response options were never, once, twice, every 2–3 months, monthly, more than monthly, weekly and more than weekly.

Alcohol-related aggression
Participants were asked to recall whether they had been involved in a fight with another adult whilst in the entertainment area of Geelong in the past 12 months, and if so whether they were intoxicated with alcohol at the time. These items were used to create a binary variable, involvement in alcohol-related aggression, operationalised as being involved in a fight in the previous 12 months while affected by alcohol.

Procedure
Approval for the current study was gained from the Deakin University Human Research Ethics Committee. Potential participants were randomly approached by a member of the research team. They were informed of the nature of the study, their right to refuse participation, the confidentiality of the data and their ability to withdraw consent at any time throughout the duration of the interview. At the conclusion of the interview, all participants were provided with a business-sized information card containing the internet address and contact details of the study and were reminded of their right to withdraw their consent if they later wished to do so.

The patron surveys were conducted over an 18 month period, on a fortnightly basis, at randomly selected venues. All surveys were conducted on Friday or Saturday nights, generally between the hours of 9 pm and 1 am, and at least to 5 am on two occasions, in order to reflect later trading hours. Every fortnight, up to 100 patrons were surveyed inside and outside venues in Geelong. A team of four or more researchers visited up to six venues on designated evenings.

RESULTS
As shown in Supplementary Table S1, a Pearson’s $\chi^2$ test for independence of association revealed a significant but weak association between ARA and gender, $\chi^2 (1, N=1346) = 36.76, P < 0.001, \phi = -0.17$. Men were more likely to report experiencing ARA compared to women (18.4 vs. 7.2%).

An additional Pearson’s $\chi^2$ test revealed a significant association between ARA and area-level SES, $\chi^2 (3, N=1346) = 9.57, P < 0.05, \phi = 0.08$. However, separate chi-square analyses for men and women revealed a significant association between ARA and area-level SES for men only, $\chi^2 (3, N=697) = 11.70, P < 0.01, \phi = 0.13$, with no association for women, $\chi^2 (3, N=649) = 5.24, P = 0.16, \phi = 0.09$. Analysis of residuals revealed that men in the most disadvantaged quartile were significantly overrepresented in those involved in ARA (35.9% involved in ARA, whilst only making up 25% of the sample of total men).

A third Pearson’s $\chi^2$ test revealed a significant association between occupation and involvement in ARA, $\chi^2 (6, N=1191) = 33.68, P < 0.001, \phi = 0.17$. Blue collar workers were significantly overrepresented in those involved in ARA (45.4% involved in ARA, whilst only making up 28% of the sample), with professionals, white collar workers and students significantly underrepresented. Separate chi-square analyses for gender revealed no significant association between occupation and involvement for women, $\chi^2 (6, N=566) = 4.60, P = 0.60, \phi = 0.09$, but only for men, $\chi^2 (6, N=626) = 18.10, P < 0.01, \phi = 0.17$. Professionals were underrepresented in ARA involvement, while blue collar workers were overrepresented.

Given the above univariate associations, a binary logistic regression analysis was conducted to predict involvement in ARA from gender, occupation and area-level SES, controlling for age, level of intoxication at the time of interview and frequency of attendance at licensed venues. The odds ratios and 95% confidence intervals are reported in Supplementary Table S2. A test of the full model against a constant only model was statistically significant, $\chi^2 (21, N=1191) = 86.32, P < 0.001$, and accounted for 9.5% of the variance in the data ($R^2_L$).

Age, gender, individual level SES (occupation), most disadvantaged area-level SES and level of intoxication at time of interview were all significant predictors of involvement in ARA. Being male more than doubled the odds of experiencing ARA compared to women, while in relation to occupation, blue collar workers again had more than double the odds of ARA involvement than did the reference category of professionals. Age was also a significant predictor of involvement in ARA, with those under the age of 21 five times more likely to report involvement in ARA than those over 36 years of age, and those between 22 and 25 four times more likely to report ARA. While area-level SES overall was not a significant predictor of ARA involvement, disadvantaged SES was significant, with those living in most disadvantaged areas over twice as likely to report experiencing ARA compared to those living in most advantaged areas. Greater level of intoxication at time of interview was also a significant predictor of involvement in ARA, while frequency of attendance at licensed venues was not.

As it was not possible to assess the two- and three-way interactions between each of area-level SES, occupation, level of intoxication, and gender, due to the small number of women engaging in ARA, separate logistic regression models were calculated for men and women.

For men, a test of the full model against a constant only model was statistically significant, $\chi^2 (19, N=613) = 47.98, P < 0.001$, and accounted for 8.3% of the variance in the data ($R^2_L$). As shown in Supplementary Table S3, blue collar workers had again double the odds of involvement in ARA, when compared to professionals (due to small numbers of men not in the workforce, this occupational category could not be included in analyses for occupation), and the most disadvantaged individuals were again more than twice at risk of involvement in ARA. Age was a significant predictor, though no age group had significantly increased risk of involvement in ARA when compared to over 36 year olds. For women, a test of the full model against a constant only model was not statistically significant, $\chi^2 (19, N=538) = 29.10, P = 0.06$, and accounted for 9.9% of the variance in the data ($R^2_L$).

DISCUSSION
To address the inconsistencies in the reviewed research and the scarce amount of Australian data, the aim of the present study was to investigate the relationship between gender, area level and individual level SES, and ARA in and around Australian licensed premises, controlling for age, level of intoxication at time of interview, and frequency of attendance at licensed venues. The results of the present study affirm that both gender and SES are risk factors for ARA.

In the current study, a significantly greater proportion of men reported ARA compared to women. This is consistent with previous findings reporting men to consistently drink more and to be more...
frequently involved in aggression and ARA compared to women (Graham and Wells, 2001b; Krienert and Vandiver, 2009), with one study finding 75% of aggressive incidents in bars involved only males (Graham and Wells, 2001a).

In support of the hypothesis, a significantly greater proportion of individuals from disadvantaged socio-economic neighbourhoods indicated involvement in ARA compared to those from more advantaged socio-economic neighbourhoods. The results showed that the most disadvantaged group had a significantly greater chance of involvement in ARA compared to the most advantaged group. In addition, blue collar workers were more likely to be involved in ARA than other occupations.

Specifically, men of the most disadvantaged SES were more likely to be involved in ARA compared to women of the same SES bracket. This is consistent with Giskes et al. (2011), who found that men of disadvantaged SES were at an increased risk of alcohol-related harm compared to women of disadvantaged SES. Giskes et al. noted that previous research in the area has found that drinking norms of disadvantaged men may differ from those of more advantaged peers, this contributing to more harmful alcohol consumption (Bloomfield et al., 2006; Batty et al., 2008), and this may be the case in the present study. In addition, male blue collar workers were more than two times more likely to be involved in ARA as male professionals. This is in line with a previous study conducted by du Plessis et al. (2013), who reported associations between alcohol consumption and violence in blue collar workers to be relatively common.

The current study is not without limitations. Firstly, the self-report nature of the interviews may have subjected participant responses to social desirability pressures. Research on self-report data collection suggests an over-representation of reported alcohol consumption and ARA for men as a means of proving their masculinity (Wells and Graham, 2003), while the opposite is observed for women (Wells and Graham, 2003; Wells et al., 2007). This may have also been affected by some participants being intoxicated at the time of the interview, particularly given that level of intoxication at interview was a predictor of reporting involvement in ARA. Secondly, the survey only measured observed and self-reported incidences of direct physical violence. In doing so, it neglects more subtle and socially sophisticated forms of indirect aggression, which, as mentioned previously, may be more commonly observed in women (Krienert and Vandiver, 2009). As such, the ability to draw accurate gender comparisons of involvement in ARA is greatly undermined. A further methodological limitation of the present study was the categorization of SES on the basis of SEIFA, determined by the postcode of the participant. Such classification may not represent the range of variables, including current level of education, which are likely to play a role in the accurate conceptualization of an individual’s SES (Room, 2005). Finally, as with all studies of cross-sectional nature, no causal inference could be made regarding the temporal precedence of the key variables.

Findings of the above study give rise to a number of implications and directions for future research. Firstly, findings suggest that for the successful creation and implementation of violence and alcohol intervention policies (e.g. reducing alcohol availability, shorter hours for night-time venues, regulating alcohol prices, and promoting alcohol and violence prevention through educational systems) strategies should be both gender and SES specific. In addition to this, results suggest that such policies may be maximally effective if targeted at men working in blue collar jobs, and those living in communities classified as most disadvantaged in terms of SES.

Future research should seek to expand on gender and SES as predictors of ARA in both direct and indirect forms, and how this may vary between men, women and individuals of varying levels of SES. Further to this, it would be beneficial for further studies to examine SES in relation to the varying levels of a participant’s income and education, which may lead to a more accurate representation of SES as a predictor of ARA.

This study is the first in Australia to examine gender and SES as contributing risk factors in ARA in patrons at licensed venues. Findings show that gender was the strongest predictor of ARA, where men were significantly more likely to be involved in ARA compared to women. Findings further outlined that SES acted as a risk factor for ARA, in that the most disadvantaged were at a higher risk of ARA than the least disadvantaged, and blue collar workers were far more likely to be involved in ARA than professionals. Furthermore, findings highlighted how a greater proportion of men from disadvantaged SES were involved in ARA compared to women from disadvantaged SES, suggesting that gender and SES may interact to increase the risk of ARA. In summary, findings suggest that in order to reduce the presence of ARA occurring in and around licensed venues, harm-reduction strategies must take into account both an individual’s gender, and their varying levels of SES. In particular, those of the most disadvantaged socio-economic status, and those in blue collar occupations, may require targeted interventions to address this behaviour.

SUPPLEMENTARY MATERIAL
Supplementary material is available at Alcohol and Alcoholism online.

FUNDING
P.M. receives funding from Australian Research Council and Australian National Health and Medical Research Council, grants from NSW Government, National Drug Law Enforcement Research Fund, Foundation for Alcohol Research and Education, Cancer Council Victoria, Queensland government and Australian Drug Foundation, travel and related costs from Australasian Drug Strategy Conference. He is affiliated with academic journal Addiction. He has acted as a paid expert witness on behalf of a licensed venue and a security firm.

CONFLICT OF INTEREST STATEMENT
None declared.

REFERENCES


