Off-site outlets and alcohol-related harm

Gilmore, W., Liang, W., Catalano, P., Pascal, R., Broyd, A., Lensvelt, E., Kirby, G., and Chikritzhs, T.

Why was the research undertaken?

Australian police view alcohol as one of the major drug problems facing law enforcement today. Within this it is recognised that off-site and on-site outlets play a significant role in relation to the availability, consumption, and associated harms of alcohol.

Using availability theory, the authors posit that when either physical or economic availability of alcohol increases (which makes obtaining alcohol more convenient) this increases alcohol consumption rates and, subsequently, alcohol related injury, disease, disability, and premature death (Stockwell & Gruenewald, 2004).

Although international and national literature regarding off-site outlets have indicated that liquor stores substantially contribute to alcohol related harms, particularly violence, prior research has generally not included alcohol sales made by licensed outlets. This measure is able to quantify outlets' variable capacity to influence alcohol availability in the communities in which they operate. This study aimed to address this gap in the literature by investigating the relationship between rates of violence, alcohol sales, and numbers of licensed outlets in both Queensland and Western Australia (WA).

What did the research involve?

Reported assaults for 2008/09 were obtained from Queensland and WA Police Services. The data provided enabled aggregation of assaults into Local Government Areas (LGAs) based on the place of occurrence. Information pertaining to location of offence, type of offence, time of day/day of week of occurrence and age/gender of victims was also obtained. Authorities in Queensland and WA also provided data on licensed premises in each state including address and licence type (e.g. hotel, restaurant, liquor store) which enabled grouping by LGA.

Alcohol sales data were also provided for both states although there were some functional limitations in relation to the Queensland sales data. Due to the Queensland licensing requirement that off-site outlet licence holders also possess a primary hotel licence, sales data returns usually combined sales data for all outlets held under the primary hotel licence. Therefore, it was not possible to distinguish alcohol sales made from hotels from those made by liquor stores in Queensland. This restricted the use of the sales data to totals by LGA, and precluded statistical models from distinguishing alcohol sales by type of outlet. For WA no such limitations applied and average sales made by on- and off-site outlets were able to be estimated.

Counts of assault offences formed the dependent variable in all analyses. In Queensland, the key explanatory variables of interest were counts of outlets by major outlet types (liquor stores, hotels/nightclubs, restaurants, social clubs, other) and level of total pure alcohol sales. For WA, key explanatory variables included on- and off-site outlet counts and on- and off-site outlet alcohol sales. All models included a full complement of potential demographic and socio-economic confounders including: estimated residential population 15+yrs; mean age of males; mean age of females; proportion of males 15+yrs; population density; socio-economic index; Indigenous residents; substantial mining activity; remoteness; and tourism activity. LGAs with current alcohol restrictions (i.e. liquor bans) were excluded from analyses.

For each state, five individual models were created in relation to the type of location where the assault occurred: (i) total assaults; (ii) assaults at on-site outlets; (iii) assaults at residential premises; (iv) assaults in the street and (v) assaults at 'other' places. Models were also created for assault by time of day and for specific sub-populations of interest based on demographic details of the victim. Multivariate negative binomial regression was the statistical test of choice.

What did the research find?

Key findings from Queensland

- Significant positive associations were found between numbers of hotels/nightclubs and assaults reported (i.e. as numbers of hotels increased risk of assault increased). An association was also apparent for restaurants and risk of assault although the size of the effect was small.

- No effect specific to counts of liquor stores was found in any of the models although this may be due to the licencing variations as described above. Although it was not possible to control for alcohol sales specific to liquor stores in the models, total volume of alcohol sales in an LGA was able to be controlled for and it significantly predicted risk of violence. Higher levels of total alcohol sales in LGAs significantly predicted greater risk of assaults occurring at on-site outlets, assaults in the street, serious assaults and those occurring among female victims.

- There were very strong linear associations between Indigenous status and assault and the association appears to have been stronger and more consistent than liquor outlet count or alcohol sales effects.

- LGAs with substantial mining activity had lower risk of reported assault than elsewhere. It is possible that this may be partly due to systematic under-reporting of violent incidents to police in these areas but this requires further investigation.

- Compared to LGAs with the lowest level of total alcohol sales, LGAs with higher levels of sales indicated lower risk of sexual assault; however, it is unclear why this might be the case and the finding warrants further investigation.

- Businesses with liquor licence types categorised as 'other' (e.g. motels, movie theatres, florists) indicated a small protective effect (less than 1%) on assaults occurring among children, young people, young males and with lower risk for common assaults and day time assaults. Less than 50% of these premises were indicated as having purchased alcohol from a wholesaler in 2008/09.

Key findings from Western Australia

- Off-site alcohol sales (liquor stores) predicted total assaults and all other dependent assault variables tested with the exception of murder/manslaughter and assaults occurring at on-site outlets.

- The association between off-site alcohol sales and reported assault was largest when assaults reportedly occurred in the street.

- When assaults occurring specifically at hotels/taverns were selected the number of on-site outlets was a significant predictor and the risk for off-site outlet alcohol sales approached significance. When assaults specific to restaurant locations were examined, both numbers of on-site outlets and numbers of off-site outlets were found to be significant predictors.

- The presence of substantial mining activity in LGAs predicted higher levels of reported violence in several models including total assaults.

- With the exception of murder/manslaughter and assaults which occurred at on-site outlets, all models tested indicated that LGAs with higher proportions of Indigenous residents had higher risk of police reported assault compared to LGAs with low proportions of Indigenous residents.

What are the conclusions and implications of the research?

For the foreseeable future, there is likely to be a growing trend toward the application of public interest tests which consider harm, ill-health, or public amenity effects of a liquor application by liquor licensing decision-makers. This may lead to a more

purposeful reliance on objective local data to assist in evidence-based decision making.

For the first time, this study has demonstrated significant associations between numbers of police reported assaults and numbers of hotels/nightclubs and restaurants for the state of Queensland and confirmed previously found associations for WA.

The study has shown that off-site outlet alcohol sales and total volume of alcohol sales within a region are important predictors of assault. Given that the evidence indicates that increasing the numbers of on-site outlets are more likely to exacerbate harms associated with alcohol, this warrants a precautionary approach to future liquor licensing policy formulation and application in Australian jurisdictions.

One means of encouraging the uptake of evidence-based liquor licensing policy into the future might include the construction of a data driven tool accessible to decision makers (and possibly others), which will enable an unbiased, independent means of assessing the quantifiable outcomes from liquor licensing decisions in relation to the health and safety of communities. In order to achieve this in a manner that would withstand the scrutiny of the liquor licensing decision makers, industry and the community, a great deal of careful ground work must first be undertaken. Police can support research related activities which will encourage the uptake of data-driven liquor licensing decision making in the future by:

(i)   Supporting the investigation of liquor outlet impacts on a wide range of crime and health related harms;

(ii)   Encouraging the conduct of longitudinal research studies; and

(iii)   Supporting the uptake of alcohol sales data reporting in all jurisdictions.