Associations Between Peer Attitudes and Behaviour, Random Breath Testing Experience and Drink Driving in a Population–Representative Sample of South Australians

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ABSTRACT

This study used a population-representative survey of 1,300 South Australian drinkers to examine associations between respondents’ perceptions of peer drink driving behaviour and approval of drink driving, experience of Random Breath Testing and self-reported drink driving. After controlling for age, gender, region of residence, regular drinking behaviour and drinking behaviour at locations away from home, perceptions that peers would drink drive and approve of drink driving were strongly related to the probability of the respondent also admitting to drink driving. Random Breath Testing experience was not related to drink driving. Specific causal links between peer behaviour and drink driving are unknown and require further investigation, but they may have implications for the conduct of future countermeasures.

INTRODUCTION

This study uses a population-representative survey of South Australian drinkers to identify variables associated with drink driving. Factors which may affect individuals’ drink driving behaviour include personal alcohol consumption patterns (Miller & Windle, 1990), perceptions of peer attitudes and behaviours (Aberg, 1993) and drinkers’ recent experience with police enforcement of drink driving laws (Homel, 1988). Convicted drink drivers are heavier drinkers than non-drink drivers (Miller & Windle, 1990), and multiple offenders are heavier drinkers than first offenders (Social Development Committee, 1988). Drinkers’ transport patterns may also increase their risk of drink driving. Gruenewald, Miller and Treno (1993) showed that single vehicle crashes often occur in clusters located on arterial roads between alcohol outlets and residential areas. People who frequently drink at locations further than easy walking distance of home may be more likely to drink drive than equally frequent drinkers who do not.

Social environments influence a range of health behaviours (Cohen, 1988), including drink driving (Oei and Kershbaumer, 1990). The Theory of Planned Behaviour (Ajzen, 1985) suggests that the extent to which a behaviour is perceived to be consistent with social norms – such as the attitudes and perceptions of the individual’s peers – is an important influence on a person’s intention to perform that behaviour. Although this proposition has obvious relevance to explaining drink driving behaviour, there has been little work done to test it.
According to Homel (1988), general deterrence from drink driving is caused by individuals’ recent experience of police enforcement. Random Breath Testing (RBT) is a mass breath testing program operated in Australia. The objective is to increase drink drivers’ perceptions of the likelihood of detection and subsequent punishment (Homel, 1988). According to general deterrence theory, people who have had recent experience of RBT would be less likely to drink drive.

In this study it is expected that drink driving will be associated with a greater frequency and intensity of drinking behaviour. It is also expected that the number of times a person drinks at a location further than easy walking distance of home will be associated with drink driving - controlling for frequency and intensity of drinking behaviour. Given equal exposure to potential drink driving situations, it is expected that drivers who believe that their friends do not drink drive, or approve of drink driving, will be more likely to report drink driving themselves. It is also expected that people who have been tested at RBT units will be less likely to report drink driving than those who have only seen the units - and that those who have not seen the units will be most likely to report drink driving.

METHOD

A personal interview survey was administered by an independent market research organisation. Within the Adelaide Metropolitan area, 320 Collector’s Districts (areas of some 300 households) were randomly selected according to a weight proportional to their population. A starting point within the CD was randomly determined and households chosen using a four unit skip pattern. Interviewees were chosen by interviewing the person over the age of 15 whose birthday fell next. Within regional areas, a similar procedure was used in towns of 10,000 people or more, whilst centres with a population of 1,000 or more were selected with a probability proportional to size. Five callbacks were made in urban locations and three in rural areas. An overall response rate of 71.5% was achieved.

Respondents were included in this study if they held either a full driver’s or motorcyclist’s licence (subject to the 0.05 legal BAC limit) and reported that they drink alcohol. Participants were 695 males and 605 females with a mean age of 40.36 years. There were 988 (76.0%) residents of metropolitan Adelaide and 312 (24.0%) regional residents.

**Drinking behaviour**: Respondents were asked: “How often do you usually drink alcohol?” and “On a day when you drink alcohol, how many drinks do you usually have?”. To assess the possible interaction between alcohol consumption and transport patterns, participants were also asked: “How often do you consume more than one drink in a location which is further than easy walking distance of home?”.

**Peer environment**: Participants were asked: “Of the people you drink alcohol with, how many would disapprove of drink driving?”. They were also asked “How many of your friends do you guess would drive when they think they are over the limit?”.

**RBT experience**: Participants were asked “Have you seen a RBT station in South Australia during the last three months, and, if so, were you tested”. The three month period was used as deterrence effects are limited to short periods of time (Homel, 1988).

**Drink driving behaviour**: Respondents were asked “How many times in the last three months have you driven after drinking some alcohol?” and “How many times in the last three
months have you driven when you thought that your blood alcohol concentration was over 0.05%? All participants were counselled that their responses were completely confidential. Categories used in the analyses were those who had not driven after drinking during the last three months, those who had done so but claimed to be under the limit, and illegal drink drivers.

RESULTS

Two discriminant function analyses were performed to predict illegal drink driving. Variables were entered in three sequential blocks for both analyses. Gender, age, and region of residence were entered first, followed by the drinking behaviour variables, and then peer environment and RBT experience. Within each block variables were entered using the stepwise method. The outcome of these procedures is that the drinking behaviour variables are analysed whilst controlling for the demographic variables, and peer environment and RBT experience are analysed controlling for demographic and drinking behaviour variables.

Table 1
Standardised discriminant function coefficients (DFC) and variable/function correlations (V/FC) for variables predicting illegal drink driving in the full sample and amongst those who drink before driving.

<table>
<thead>
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<th></th>
<th>Full sample</th>
<th>DFC</th>
<th>V/FC</th>
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<tbody>
<tr>
<td>Age</td>
<td>.18</td>
<td>.29</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.12</td>
<td>.29</td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>-.12</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Drinking frequency</td>
<td>.35</td>
<td>.29</td>
<td></td>
</tr>
<tr>
<td>Ave. drinks</td>
<td>.45</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>Away from home</td>
<td>.39</td>
<td>.55</td>
<td></td>
</tr>
<tr>
<td>Friends disapprove</td>
<td>-.21</td>
<td>-.39</td>
<td></td>
</tr>
<tr>
<td>Friends drink drive</td>
<td>.39</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>RBT Experience</td>
<td>.05</td>
<td>.15</td>
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<thead>
<tr>
<th></th>
<th>Drink before driving</th>
<th>DFC</th>
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<tr>
<td>Age</td>
<td>.27</td>
<td>.33</td>
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</tr>
<tr>
<td>Gender</td>
<td>-.07</td>
<td>-.17</td>
<td></td>
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<tr>
<td>Region</td>
<td>-.15</td>
<td>-.18</td>
<td></td>
</tr>
<tr>
<td>Drinking frequency</td>
<td>.37</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>Ave. drinks</td>
<td>.52</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>Away from home</td>
<td>.32</td>
<td>.42</td>
<td></td>
</tr>
<tr>
<td>Friends disapprove</td>
<td>-.25</td>
<td>-.42</td>
<td></td>
</tr>
<tr>
<td>Friends drink drive</td>
<td>.42</td>
<td>.55</td>
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<td>RBT Experience</td>
<td>.03</td>
<td>.09</td>
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</table>
The first analysis compared illegal drink drivers to the remainder of the sample. The function significantly predicted drink driving (Eigenvalue=0.30, canonical correlation=0.48, p<.001). The second analysis compared drivers who drove after drinking but reported BACs of less than 0.05 with those who drove with a BAC of over 0.05, thus eliminating respondents who did not drive after drinking. This function was also significant (Eigenvalue=0.36, canonical correlation=0.52, p<.001). Table 1 shows standardised discriminant function coefficients and function-variable correlations for all predictor variables.

Both analyses showed consistent associations between all measures of drinking behaviour, the two measures of peer environment and drink driving. The frequency with which a person drinks at a location outside easy walking distance of home was a predicted drink driving after controlling for frequency and amount of drinking. Controlling for all demographic and drinking behaviour variables, the perceived number of friends who disapprove of drink driving was associated with a decreased likelihood of drink driving, and the perceived number of friends who drink drive was associated with an increased likelihood. RBT experience was not associated with drink driving. Being younger, being male and living in rural areas were relatively weak predictors of admitting to drink driving.

DISCUSSION

Both frequency and intensity of drinking were correlated with drink driving, as was the number of times that the person drinks at a location further than walking distance of home. Those who perceive that their friends drink drive or do not disapprove of drink driving were more likely to report drink driving during the three months prior to the survey. RBT experience during the three months prior to the survey was not shown to be related to the probability of drink driving.

Drink drivers were identified in this survey by their own admission – based on subjective, and possibly inaccurate, estimations of BAC. However, the correlations between alcohol consumption, youth, male gender and drink driving are similar to those found in the literature (Miller & Windle, 1990) and in crash statistics (Hanworth & Rechnitzer, 1993). These support the validity of the measure.

The number of times an individual drinks away from home was also associated with drink driving, even after controlling for the other alcohol consumption variables. This finding suggests that the interaction between individuals’ drinking and transportation patterns is important (Gruenewald, Miller & Treno, 1993).

Perceptions of peer attitudes and behaviour were strongly associated with drink driving behaviour. However, again, there may be limitations to the interpretation of this finding. People whose friends eschew drink driving may consider their own drink driving to be socially inappropriate and fail to report it. It may also be the case that people who drink drive are more likely to overestimate their friends’ drink driving attitudes and behaviour. Both tendencies would produce a bias in the hypothesised direction.

However, the magnitude of the relationships between the peer environment variables and drink driving are sufficient to warrant further investigation. The theory of reasoned action suggests that perceived social contexts are important factors in drinkers personal decision–
making processes (Ajzen, 1985). However, there are a number of different mechanisms for
this association, such as social pressure to drink, the peer acceptability of controlled
drinking and behavioural modelling. What can be concluded is that drink driving occurs
within the context of the social environment, and that influencing this environment may,
potentially, lead to changes in individuals’ drink driving behaviour.

RBT experience was not related to drink driving, although RBT has been shown to deter
drink driving in the past (Homel, 1988). Some respondents may have encountered RBT
subsequent to a drink driving event – and were deterred from further drink driving. It may
also be the case that effects caused by testing, or the sight of an RBT station are of a short
duration, not manifest for a period as long as three months. A more theoretically-based
explanation is that RBT may only act as a deterrent when it is encountered in a situation
where a driver could be reasonably be expected to be over the limit. Drink drivers may
prefer to use backstreets, where the odds of encountering RBT are remote. If this is the case,
it is unlikely that the sight of RBT on an arterial road would be a significant deterrent.
Policing of backstreets accompanied by strong publicity may change this situation.

The findings of this study cannot be regarded as definitive, but do show links between drink
driving and variables such as the perceived peer environment and drinking in locations
some distance from home. Further research is needed to confirm these findings and,
particularly, to demonstrate causality. The processes which contribute to peer influence on
drink driving behaviour are unknown (Cohen, 1988), and there is a clear need to test
hypotheses regarding mediating factors in this relationship.

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