Knowledge and behaviours of drunk driving offenders in Guangzhou, China

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Abstract

Background
Alcohol is a major contributor to road crashes in China (Li, Xie, Nie, & Zhang, 2012; Cochrane, & Chen, 2003). Two levels of offence are defined in legislation: the lower level is driving under the influence (DUI, also translated as “drink driving”) and the higher level is driving while intoxicated (DWI, also translated as “drunk driving”, where the driver has BAC > 0.08mg/100ml). This study focuses on a 2011 legislative amendment that made drunk driving (DWI) a criminal offence. However, it is not known whether drivers are aware of the law, and whether this knowledge, their exposure to enforcement and the existence of alcohol use disorders relate to their drink driving behaviour. This study explored these relationships in a sample of convicted drunk drivers.

Method
A survey collected information about offenders’ knowledge and practices related to drunk-driving in Guangzhou. The Alcohol Use Disorders Identification Test (AUDIT) (Babor, & Grant, 1989; Chen, & Cheng, 2005) assessed hazardous drinking levels. In total, 101 drunk driving offenders were recruited while in detention.

Results
Males represented 90% of the sample; the average age was 33.6 years (SD=8.7; range 17-59 years). The average age at which offenders reported starting to drink alcohol was 19.5 years (SD=4.1; range 8-30 years). Driver’s licences had been held for a median of 7 years. Knowledge about legal limits for DUI and DWI offences was surprisingly low, at 27.7% and 40.6% respectively. On average, offenders had experienced 1.5 police alcohol breath tests in the previous year (SD=1.3; range 1-10). AUDIT scores indicated that a substantial proportion of the offenders had high levels of alcohol use disorders. Higher AUDIT scores were found among the least experienced drivers, those with lack of knowledge about the legal limits, and recidivist drunk drivers.

Discussion and conclusions
Limited awareness of legal alcohol limits might contribute to offending; high levels of alcohol consumption by many offenders suggest that hazardous drinking levels may also contribute. Novice drivers are a concern and their higher AUDIT scores merit some follow-up. Overall, this study provides important information to assist in refining community education and prevention efforts to align with China’s new regulations.

Introduction
Alcohol is a major contributor to road crashes in China (Li, 2012; Cochrane, 2003). According to statistics from the Traffic Management Bureau under the Ministry of Public Security (MPS, 2012), there were 4,912 traffic crashes relevant to drinking and driving, 1,957 deaths and 5,221 serious injuries in 2011. One study conducted in two Chinese cities, supported by the Global Road Safety Partnership (GRSP), revealed that an average of 34.1% of road crashes (Nanning: 25.7%; Liuzhou:48%) were alcohol related, the mean BAC level of the drivers in the accidents was 156.7 mg/dl, and the highest BAC was 310mg/dl in 2007 (Yuan, Li and Zhang; 2013). China introduced a legislative amendment to make drunk-driving a criminal offence on 1st May, 2011. This amendment represents a major change in the treatment of offenders. Motorists convicted of drunk driving/DWI (i.e., >0.08mg/100ml) now have a criminal offence recorded against them. According to the official statistics from Guangzhou Public Security Bureau (Wang, 2012), from 1st May 2011 to 30th April 2012, traffic police officers identified 4,750 drink driving cases, among them 877 cases of drunk driving. According to the local traffic police detachment report, there were 37 traffic accidents related to drink driving in 2011 in Guangzhou. These accidents led to 21 deaths in Guangzhou, which accounted for 11.73% of the national total, and 42 injured in Guangzhou, which accounted for 7.32% of the national total. The present study explored whether convicted drunk drivers were aware of the law and whether this knowledge, their exposure to enforcement and the existence of alcohol use disorders related to their drink driving behaviours.

Method

Self-report 15 minute surveys about drink driving knowledge and practices were completed by 101 drunk driving offenders in Guangzhou between May and October, 2012. Two staff from the local custody were trained as research assistants and conducted the survey with drunk driving offenders while in detention.

Design and procedure

Information included: demographics; knowledge about drinking and driving; drinking and driving behaviours; and perception of deterrents to drinking and driving. The Alcohol Use Disorders Identification Test (AUDIT) (Babor, 1989) assessed hazardous drinking levels using the World Health Organization (WHO) cut-off scores. Because there is no “standard unit of alcohol consumption” concept in China, we asked participants how much alcohol they consumed and then coded the amount as a standard unit to calculate the AUDIT score. The study was approved by the QUT Research Ethics Committee (approval number 1100001462).

Results

Socio-demographic characteristics

The sample was predominantly male (90.1%) with an average age of 33.6 years (SD=8.7; range 17-59 years) with 20.8% between 17 and 25 years old; 63.4% were married and one-third had tertiary qualifications (33%).

The majority (70%) of offenders had a monthly income between 1,300-10,000RMB; 9.9% earned less than 1,300RMB and 17.8% more than 10,000RMB. Just over half (53.5%) had a permanent job while 16.7% were unemployed (including students and retired people). The number of years licensed varied from 0.5 to 27 years with a median of 7 years; 7.9% offenders had no licence. Professional drivers (e.g. taxi, bus and truck drivers) made up 20% of the sample.
Knowledge about drinking and driving

The majority (84.2%) knew that drunk driving had become a criminal offence in May 2011, but knowledge about legal limits for DUI (27.7%) and DWI (40.6%) was surprisingly low. Almost all offenders had no knowledge of how to keep their BAC under the legal limit. Correct answers for the amount of alcoholic beverages that could be consumed to remain under the legal limit were given by only 2% of participants for spirits, 6.9% for wine and 1% for beer.

Drinking and driving behaviours

The age when alcohol was first consumed ranged from 8-30 years: mean 19.5 years; SD = 4.1. Less than half reported that they had been drinking over the legal limit and subsequently: driven a car (41.6%), ridden a motorbike (47.5%), driven another vehicle (13.9%) or ridden a bicycle (34.7%). About 37% of the offenders reported that they had driven a car, motorbike or other motor vehicle on a public road while over the legal BAC at least once in the last 12 months. In the same period 35.7% reported being a passenger of a drunk driver. The majority (77.7%) reported that at least occasionally they tried to keep track of the amount of alcohol they had consumed if they were driving.

Deterrence

In addition to the offence for which they were currently being punished, 20.8% had been caught for another drink/drunk driving offence in the last three years but only 10.9% had previously received a penalty for it. In the last month, 72.3% had been stopped at least once by police conducting breath alcohol testing and 18.8% had been tested twice. On average, offenders experienced 1.5 police alcohol breath tests in the previous year (SD=1.3; range 1-10). The majority (77.2%) admitted that their alcohol reading was above the legal limit at the last testing and 21.8% of them had been previously jailed for drunk driving.

Alcohol Use (AUDIT)

The mean AUDIT score of these convicted drink driving offenders is 11.1, representing a medium level of alcohol problems. Table 1 gives the AUDIT score distribution.

<table>
<thead>
<tr>
<th>Alcohol problem severity</th>
<th>AUDIT score</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (0-7.9)</td>
<td>35</td>
<td></td>
<td>35%</td>
</tr>
<tr>
<td>Medium (8-15.9)</td>
<td>45</td>
<td></td>
<td>45%</td>
</tr>
<tr>
<td>High Level (16-19.9)</td>
<td>7</td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>Need further diagnostic evaluation for alcohol dependence.</td>
<td>20 or more</td>
<td>13</td>
<td>13%</td>
</tr>
</tbody>
</table>

There was no significant difference between the level of AUDIT score in females (11.6) and in males (11.1) and a moderate negative correlation between age and AUDIT score, \( r = -0.3, n = 101, p < 0.01 \).

Offenders were divided into four licence groups: novice drivers (licensed for less than two years); licensed 2-5 years; licensed 6-10 years; and experienced (licensed 11 years or more).

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>AUDIT Mean</th>
<th>Mean difference from Group 1 (1-G)</th>
<th>SD</th>
<th>P (1-G)</th>
</tr>
</thead>
</table>

Knowledge and behaviours of drunk driving offenders in Guangzhou, China
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<table>
<thead>
<tr>
<th>1. Novice driver (&lt;2 years)</th>
<th>13</th>
<th>16.4</th>
<th>0</th>
<th>7.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Licensed 2-5 years</td>
<td>26</td>
<td>11.3</td>
<td>5.1</td>
<td>6.0</td>
</tr>
<tr>
<td>3. Licensed 6-10 years</td>
<td>30</td>
<td>9.9</td>
<td>6.5</td>
<td>4.0</td>
</tr>
<tr>
<td>4. Licensed 11+ years</td>
<td>26</td>
<td>8.7</td>
<td>7.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>11.1</td>
<td>5.9</td>
<td></td>
</tr>
</tbody>
</table>

One-way ANOVAs showed that the AUDIT score of the novice driver group was significantly higher than the other three groups \((F(3, 91) = 6.5, p < 0.01)\), with no difference between the other groups (Table 2).

There was a moderate negative correlation between the age the respondent started drinking and their AUDIT score, \(r = -0.4, n = 100, p < 0.01\). AUDIT scores did not vary significantly by level of education, with all means lying between 10.2 and 12.9.

Those who knew the legal limit level for drunk driving \((M = 9.8, SD = 5.16)\) had a significantly lower mean AUDIT score than those who did not \((M = 12.2, SD = 6.26; n = 96, p = 0.05)\). Recidivist drivers had a higher AUDIT score \((M = 15.1, SD = 6.48)\) than first time convicted offenders \((M = 9.9, SD = 4.9; n = 95, p = 0.001)\). There were no significant differences in AUDIT scores by income category or drinking frequency.

**Discussion and conclusions**

Most of the drunk driving offenders were male and had a median 7 years driving experience, which was very similar to the findings in the Guangxi province research project (Yuan, 2013).

Income level did not influence frequency of drinking for these offenders. In the Chinese alcohol beverage market, the prices of bottles of beer, wine and spirits vary from around less than 10RMB to hundreds or thousands of RMB. This spread of prices allows for ready substitution to maintain alcohol consumption without spending more money.

A positive finding is that 84.2% of the sample knew that drunk driving became a criminal offence in May 2011. This would be expected given their recent convictions. However, given their awareness of the new law, their knowledge about legal limits for DUI and DWI offences was surprisingly low. If we compared the rate of awareness of the lowest national BAC limit (DUI) with the result of a baseline survey on drink driving in Nanning and Liuzhou in 2007, awareness was 4.8% prior to the legislative changes in 2011 (Yuan, 2013). In the present study, Guangzhou’s drunk drivers had a higher rate of awareness (27.7%). However, this difference at least partially reflects the nature of our sample (drunk driving offenders): after they were apprehended for drunk driving, their exposure to legal proceedings might have given them the opportunity to learn the two levels of limits for drinking and driving. Even if they had known the correct limits, the results show that drunk drivers had little knowledge of how to keep their BAC under the legal limit. It is clear that both general drivers and drunk drivers need further education on this important information.

From the offenders’ reports of exposure to enforcement, it appears that breath alcohol testing has been implemented well in Guangzhou. On average, offenders had experienced 1.5 police breath alcohol tests in the previous year. In comparison, the GRSP baseline survey on drink driving of general drivers in Nanning and Liuzhou found that 78 percent had never been stopped by the traffic police for a BAC check during 2005-2006 (Yuan, 2013). While the higher level of exposure to BAC testing reported in this study is promising, it may indicate only that habitual drunk drivers were more exposed to drink driving enforcement than general
drivers, as might be expected. It is worth noting, however, that it has been suggested that enforcement, along with stricter penalties introduced in 2011, has contributed to a reported 41.4% decrease in drink driving and 44.5% in drunk driving in the first year of operation (Hong, 2012).

The finding that the more recently licensed drunk driving offenders had higher AUDIT scores is arguably consistent with the rapid increases in alcohol consumption and related problems that have been observed in China (Hao, 2007; Zhang, 2004), although the dramatic difference between this group and all others merits further investigation.

Recidivist drink driving offenders had higher AUDIT scores than first time drink driving offenders. These offenders can have a heavily entrenched behaviour, and their drink driving behaviours can prove difficult to change (Freeman, Schonfeld et al. 2007). Interventions such as re-education, rehabilitation, or installation of interlocks need to be considered.

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References


