Mapping Drug Driving, Drug Use and Risk Perceptions of On-Road Drivers, Entertainment-Venue Attendees and Newly-Licensed Drivers in the Australian Capital Territory

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Abstract

Driving under the influence of psychoactive substances such as \( \Delta^9 \)-tetrahydrocannabinol (THC), methamphetamine (MA) and 3,4-methylenedioxyamphetamine (MDMA) is increasingly becoming a concern in first world countries. Several studies have suggested that these substances affect behaviour and skills that are important for safe driving. In addition, evidence suggests links between the use of these type of drugs and motor vehicle accidents. In 2007, as part of a pilot research project in the Australian Capital Territory (ACT), 100 drivers were randomly surveyed and tested for alcohol and illicit drugs. None produced a reading over 0.05g/dl for alcohol. However, seven per cent of the participants tested positive for illicit substances.

This study expanded on the previous pilot study by including additional on-road drivers (n=400) and two new demographic groups: 500 new driver licensees and 200 nightclub attendees. The three targeted groups were surveyed for drug use, drug driving behaviours and risk perceptions. The additional on-road drivers and nightclub attendees were also presumptively screened for THC, MA and MDMA. The addition of extra targeted groups provided useful data for comparison purposes.

Survey responses indicated that whilst drink driving continues to be a problem amongst the three targeted groups, drug driving is also a concern within the ACT. Questionnaire responses and results from the screening of oral fluid samples also revealed that driving after consuming psychoactive substances is occurring amongst male and females across age groups. However, factors such as age and gender did not have significant links to driving under the influence of drugs. Given that the majority of participants perceived that having an accident or getting caught by the police when drug driving were major risks, the introduction of the new random drug testing law in the ACT could change individuals’ behaviour and reduce drug driving in the Territory.
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Edwin M Castillo Martinez

13 December 2010
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## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACT</td>
<td>Australian Capital Territory</td>
</tr>
<tr>
<td>ACTGAL</td>
<td>Australian Capital Territory Government Analytical Laboratory</td>
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<tr>
<td>AFP</td>
<td>Australian Federal Police</td>
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<tr>
<td>ATS</td>
<td>Amphetamine type substances</td>
</tr>
<tr>
<td>BAC</td>
<td>Blood alcohol concentration</td>
</tr>
<tr>
<td>CB1</td>
<td>Cannabinoid receptor 1</td>
</tr>
<tr>
<td>CB2</td>
<td>Cannabinoid receptor 2</td>
</tr>
<tr>
<td>CNS</td>
<td>Central nervous system</td>
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<tr>
<td>d-MA</td>
<td>Dextro methamphetamine</td>
</tr>
<tr>
<td>ELISA</td>
<td>Enzyme-Linked Immunosorbent Assay</td>
</tr>
<tr>
<td>GC</td>
<td>Gas chromatography</td>
</tr>
<tr>
<td>GC/MS</td>
<td>Gas chromatography - mass spectrometry</td>
</tr>
<tr>
<td>HFBTA</td>
<td>Heptafluorobutyric acid</td>
</tr>
<tr>
<td>HPLC</td>
<td>High performance liquid chromatography</td>
</tr>
<tr>
<td>LLE</td>
<td>Liquid-liquid extraction</td>
</tr>
<tr>
<td>l-MA</td>
<td>Levo methamphetamine</td>
</tr>
<tr>
<td>m/z</td>
<td>Mass to charge ratio</td>
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<tr>
<td>MA</td>
<td>Methamphetamine</td>
</tr>
<tr>
<td>MA-D5</td>
<td>Deuterated methamphetamine</td>
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<tr>
<td>MDA</td>
<td>3, 4-methylendioxyamphetamine</td>
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<tr>
<td>MDMA</td>
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<td>MDMA-D5</td>
<td>Deuterated 3, 4-methylendioxymethamphetamine</td>
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<tr>
<td>MS</td>
<td>Mass spectrometry</td>
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<tr>
<td>MVAs</td>
<td>Motor vehicle accidents</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>PBS</td>
<td>Phosphate buffer saline</td>
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<td>RBT</td>
<td>Random Breath Testing</td>
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<td>Random Drug Testing</td>
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<td>ROSITA</td>
<td>European Union Roadside Assessment Testing Study</td>
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<td>South Australia</td>
</tr>
<tr>
<td>SAMHSA</td>
<td>Substance Abuse and Mental Health Services Administration</td>
</tr>
<tr>
<td>SIM</td>
<td>Selected ion monitoring</td>
</tr>
<tr>
<td>SPE</td>
<td>Solid-phase extraction</td>
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<tr>
<td>SPSS</td>
<td>Statistical package for the social science</td>
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<tr>
<td>THC</td>
<td>Δ⁹ tetrahydrocannabinol</td>
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<td>THC-COOH</td>
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