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The Difference is Research

An update on drug-driving behaviours and attitudes towards drug driving in Australian consumers of ecstasy and related drugs: 2007-2013.

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KEY FINDINGS

- The prevalence of reports of driving after consuming illicit drugs among regular ecstasy users declined between 2007 and 2008, but remained relatively stable thereafter.
- REU's experience of roadside drug testing increased over time between 2007 and 2013.
- There was little variation evident between Victoria and the remainder of the country in terms of reported drug-related driving behaviours.
- A significant minority of REU reported engaging in specific harm reduction strategies as a result of the introduction of roadside drug testing.

BACKGROUND

Driving under the influence of illicit drugs and/or alcohol is a significant road safety concern (1-3). Although changes in actual crash risk vary between drugs, all illicit drugs are associated with cognitive and performance effects that are likely to negatively impact on road user behaviour to some degree (2). As a result, countermeasures such as roadside testing and television advertisements have been introduced, with Victoria establishing the first roadside testing regime in 2004 (2), with the remaining Australian jurisdictions following soon after (3).

Matthews et al. have recently shown that there were significant changes in drug driving and related behaviours amongst regular ecstasy users (REU) recruited as part of the Ecstasy and Related Drug Reporting System (EDRS) between 2007 and 2011 (3). In particular, they found that reports of driving under the influence of illicit psychostimulant drugs declined between the two time points, but that this decline was not evident for alcohol and/or cannabis. They also found significant variations across a range of associated variables such as age and drug use patterns. Their study spanned a period of four years and it is not clear whether the changes were different across different jurisdictions, which would be expected given the differences in the timeframe in which roadside testing was implemented in the different states and territories. In particular Victoria introduced roadside testing earlier than other regions and had the most intensive roadside testing regime of any of the Australian jurisdictions.

The current bulletin

In this Bulletin we examine three major issues. First, we examine rates of reported drug driving behaviours and experiences of roadside testing, compared between Victoria and the remaining states and territories, and how these rates vary over time. Second, we examine whether key variables are associated with reports of drug driving, stratified by whether the person believed they were affected by drugs at the time. Third, we examine recent data on attitudes to drug driving in the context of roadside testing and participants' beliefs about the impact of roadside testing.

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METHOD

Data were drawn from the survey of REU conducted as part of the national EDRS from the period 2007-2013. Participants were people who used ecstasy and related drugs regularly and were recruited from all capital cities of Australian states and territories, through a range of strategies, including advertisement in street press, online drug forums, and through word of mouth. Participants were administered structured questionnaires in face-to-face interviews that canvassed a broad range of topics including participant demographic characteristics, drug use patterns and perceptions of key issues such as price, purity and availability of a range of drugs, along with modules on health, mental health and risk behaviours. For further details see Sindicich & Burns (4).

For the purposes of this Bulletin we examined a series of questions that were included in a drug driving module included in the questionnaires throughout the period 2007-2013. Questions exploring drug driving were first included in the study in 2005, but due to changes in the questionnaire over time, this Bulletin is based only on surveys from the period 2007-2013. However, it should be noted that there were minor additions to the module in 2009 and again in 2013, meaning that not all results are comparable throughout the period 2007-2013, as noted in the tables.

The main outcomes of interest were reported driving under the influence of drugs (whether or not participants believed that they were impaired at the time), experience of roadside drug testing, and perceptions about the effects of roadside drug testing. The dataset was limited to first-time study participants only. As no unique identifier was collected and it was not possible to track individual repeat participants over time, data from all participants in the 2007 surveys were included, but data for the years 2008–2013 were limited to those who self-reported that they had never previously completed a survey.

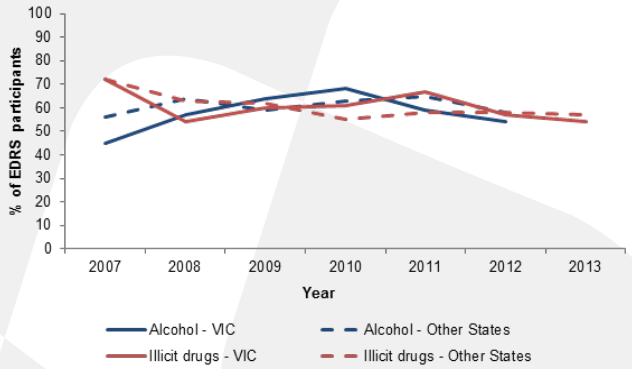
Descriptive statistics were generated in relation to each of the main outcomes. Bivariate and multivariable analyses were conducted using multinomial logistic regression to identify factors associated with driving under the influence of drugs, stratified by whether or not they believed that they are impaired at the time. Jurisdiction of residence, year of interview, and all variables significant at $p<0.1$ in bivariate analysis (not shown) were included in the multivariable models. All analyses were conducted using Stata 11.0 (Statacorp LP, Texas, 2009).

RESULTS

Reports of drug driving and experiences of roadside drug testing

Figure 1 shows that of the approximately three quarters of REU reported having driven a vehicle in the six months preceding interview, between half and three quarters reported having driven soon after taking drugs in the past six months. The percentage of the sample who reported driving soon after consuming drugs initially declined between 2007 and 2008, but then remained relatively stable over the remaining years. In contrast the prevalence of reported driving soon after consuming alcohol showed an increase between 2007 and 2008, but again remained relatively stable after that time at roughly equivalent percentages to those evident in relation to illicit drugs. Importantly, there was no consistent pattern of variation in the percentages between Victoria and the other jurisdictions.

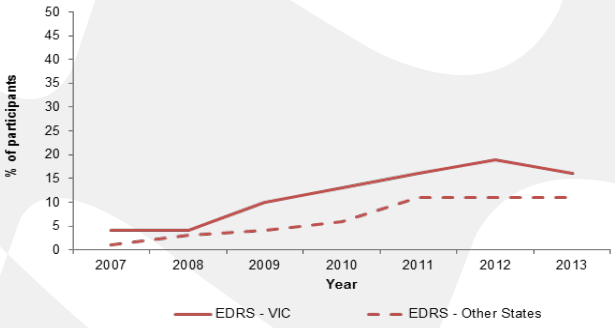
Figure 1. Prevalence of reported driving under the influence of alcohol and drugs in the last six months, Victoria compared to the rest of Australia, EDRS, 2007-2013



*DUI alcohol not collected in 2013

Figure 2 shows that there was an increase in the percentage of drivers in the sample reporting having ever been roadside drug tested over time in both Victoria and in other states. The percentage of the sample reporting recent roadside drug testing was generally higher in Victoria than in other states.

Figure 2. Experiences of roadside drug testing, Victoria compared to the rest of Australia, EDRS, 2007-2013



Factors associated with driving soon after consuming illicit drugs

Table 1 shows that, at the bivariate level, factors significantly associated with driving after consuming illicit drugs among the sample were: year of interview, sex, age, education, employment status, recent arrest (past 12 months), drug of choice, number of drug types

Table 1. Multinomial logistic regression of driving after consuming illicit drugs, by level of perceived impairment, EDRS, 2007-2013

Variable	DUI: not believed impaired[1] N=970		DUI: believed impaired[1] N=935	
	RR (95% CI)	ARR (95% CI)	RR (95% CI)	ARR (95% CI)
Interview state				
Victoria	1	1	1	1
Other States	0.98 (0.77-1.25)	1.14 (0.87-1.49)	1.04 (0.81-1.34)	1.23 (0.93.-1.62)
Year of interview				
2007	1	1	1	1
2008	0.55 (0.41-0.75)**	0.68 (0.48-0.95)*	0.64 (0.47-0.87)**	0.72 (0.51-1.03)
2009	0.60 (0.44-0.80)**	0.56 (0.40-0.78)**	0.71 (0.53-0.95)*	0.71 (0.51-0.99)*
2010	0.46 (0.34-0.62)**	0.46 (0.33-0.65)**	0.54 (0.40-0.73)**	0.52 (0.37-0.74)**
2011	0.58 (0.40-0.77)**	0.40 (0.27-0.57)**	0.60 (0.43-0.84)**	0.46 (0.32-0.67)**
2012	0.60 (0.44-0.82)**	0.45 (0.32-0.64)**	0.55 (0.40-0.76)**	0.47 (0.33-0.67)**
2013	0.49 (0.36-0.67)**	0.46 (0.33-0.64)**	0.52 (0.38-0.70)**	0.49 (0.35-0.69)**
Sex				
Female	1	1	1	1
Male	1.80 (1.50-2.15)**	1.60 (1.30-1.96)**	1.42 (1.19-1.69)**	1.32 (1.08-1.62)**
Age group				
<25	1	1	1	1
≥25	1.37 (1.15-1.63)**	1.04 (0.84-1.29)	0.92 (0.77-1.11)	0.81 (0.65-1.01)
Accommodation type				
Stable	1		1	
Unstable	0.76 (0.48-1.19)		0.74 (0.46-1.17)	
Identify as ATSI				
No	1		1	
Yes	1.67 (0.87-3.22)		0.65 (0.28-1.53)	
Completed high school				
No	1	1	1	1
Yes	0.62 (0.50-0.75)**	0.85 (0.67-1.08)	0.82 (0.66-1.02)	1.03 (0.81-1.33)
Employment status				
Not employed	1	1	1	1
Employed	0.75 (0.58-0.96)*	1.09 (0.83-1.44)	0.94 (0.73-1.22)	1.16 (0.87-1.54)
Arrested (past 12 months)				
No	1	1	1	1
Yes	1.79 (1.36-2.37)**	1.23 (0.90-1.70)	1.69 (1.27-2.24)**	1.34 (0.97-1.85)
Drug of choice				
Ecstasy	1	1	1	1
Other	1.64 (1.37-1.96)**	1.34 (1.10-1.65)**	1.22 (1.02-1.45)*	1.11 (0.90-1.35)
No. drug types used (past month)				
One	1	1	1	1
Two to three	3.19 (1.81-5.64)**	3.03 (1.59-5.77)**	3.13 (1.77-5.52)**	3.58 (1.79-7.15)**
Four to five	5.33 (3.03-9.37)**	3.97 (2.08-7.58)**	5.43 (3.09-9.54)**	5.75 (2.88-11.46)**
Six or more	8.07 (4.56-14.28)**	5.18 (2.67-10.04)**	7.18 (4.05-12.72)**	7.08 (3.49-14.36)**
Ever injected any drug				
No	1	1	1	1
Yes	2.48 (1.94-3.17)**	1.55 (1.15-2.09)**	1.44 (1.10-1.89)**	1.12 (0.81-1.55)
Binged (past 6 months)				
No	1	1	1	1
Yes	2.44 (2.04-2.95)**	1.76 (1.42-2.17)**	2.22 (1.85-2.67)**	1.77 (1.43-2.18)**

used in the past six months, ever having injected any drug and binging on stimulant drugs in the past six months (defined as having used stimulants for more than 48 hours without sleep).

Table 1 shows that a range of factors were significantly associated with reports of driving soon after taking drugs where participants believed they were not impaired, including: year of interview, male gender, reporting a drug of choice other than ecstasy, having ever injected any drugs and having binged on stimulants in the past six months. Greater numbers of drug types used in the past six months was also significantly associated with DUI drugs but not believed impaired, in a dose-response fashion. A similar pattern of association was evident for reports of driving soon after taking drugs where participants believed they were impaired, with year of interview, male gender, having binged on stimulants in the past six months all associated and a greater numbers of drug types used in the past six months (in a dose-response fashion) all significantly associated with driving after consuming drugs and believing they were impaired.

Table 2. Attitudes towards DUI of illicit drugs, Victoria compared to the rest of Australia, EDRS, 2013[1]

Variable	2013	
	VIC	Other
	N=100	N=586
Out of the next 100 people in this state who drive after taking drugs, how many do you think will be caught?[2]	n=65 5 (1-10)	n=437 5 (1-10)
How many times do you think you will drive after taking drugs in the next six months?[2]	n=65 0 (0-2)	n=435 0 (0-5)
Has the introduction of roadside drug testing in this state changed your driving behaviour?		
Yes	21 (21)	128 (22)
No	43 (43)	305 (52)
Unsure/ Not reported	36 (36)	153 (27)
If yes, how?[3]		
Wait a few hours before driving	7 (33)	26 (20)
Not drive after using drugs	7 (33)	53 (41)
Organise another driver	2 (10)	15 (12)
Get a taxi/bus	4 (19)	33 (26)
Not use drugs if intending to driving within 24 hours	2 (10)	5 (4)

[1]Among those reporting having driven in the past 6 months; [2]Median (IQR); [3]Not mutually exclusive.

Perceptions of the impacts of roadside drug testing

In 2013, EDRS participants were surveyed about their perceptions regarding the risk of being caught if driving after taking drugs and how this might influence their driving behaviour. The median number of people out of 100 who participants believed would be caught while driving after taking drugs was five (IQR: 1-10), with no difference between Victoria and other jurisdictions. In both Victoria and other jurisdictions, around half of participants reported that the introduction of roadside drug testing had not changed their drug-related driving behaviour (43% of Victorian participants and 52% of participants in other jurisdictions). Among those who had reported that the introduction of roadside drug testing had changed their drug-related driving behaviour, the most commonly reported changes were not driving after using drugs, waiting longer before driving, taking a taxi instead and arranging an alternative driver.

DISCUSSION

In this Bulletin we have shown that reports of driving soon after consuming illicit drugs declined among people who regularly use ecstasy and related drugs declined between 2007 and 2008, but remained relatively stable thereafter. These findings suggest that the decline observed by Matthews et al. (3) between 2007 and 2011 probably occurred in 2008-2009. Multivariable analysis revealed that this appeared to be the case, irrespective of whether participants believed that they were impaired or not. Overall, those reporting higher levels of drug-related risk behaviours such as higher levels of polydrug use or recent bingeing were likely to report driving soon after consuming drugs, suggesting that such driving is part of a constellation of risk behaviours in which these people engage. Alternatively, these more intense patterns of drug use may lead to fewer transportation options being available.

Few differences in drug-related driving behaviours were evident across the remaining variables considered in analysis. The only exception here was male gender, with males more likely to report engaging in driving soon after consuming drugs, irrespective of whether or not they believed that they were impaired. This finding again points to drug-related driving behaviours being part of a constellation of risky behaviours, as males generally show a higher prevalence of risk behaviours than females (5).

We have also shown that by 2013 significant minorities reported that roadside drug testing had altered their driving behaviours, with a range of strategies employed, all with the potential to reduce crash risk. This type of deterrence was one of the aims of roadside drug testing programs when they were introduced, but the question of how best to target those who have not changed or are unwilling to change behaviour remains.

Importantly, we have shown that there were few differences evident between Victoria and the rest of Australia on any of the measures we examined. This is surprising given that Victoria introduced roadside drug testing long before the other jurisdictions, with the ACT only introducing such testing in 2011 (3). Nevertheless, given the longer time for which roadside testing has been undertaken in Victoria it is unsurprising that a higher percentage of Victorian REU reported having been drug tested than the remainder of the jurisdictions.

REFERENCES

1. Kelly E, Darke S, Ross J. A review of drug use and driving: epidemiology, impairment, risk factors and risk perceptions. Drug and alcohol review. 2004 Sep;23(3):319-44.

2. Lenne MG. Roadside drug testing: unanswered questions and future challenges. Drug and alcohol review. 2007 Mar;26(2):107-8.

3. Matthews AJ, Bruno R, Dietze P, Butler K, Burns L. Driving under the influence among frequent ecstasy consumers in Australia: trends over time and the role of risk perceptions. Drug and alcohol dependence. 2014 Nov 1;144:218-24.

4. Sindicich N, Burns L. Australian Trends in Ecstasy and related Drug Markets 2014. Findings from the Ecstasy and Related Drugs Reporting System (EDRS). Australian Drug Trends Series No. 136. Sydney: National Drug and Alcohol Research Centre, UNSW Australia; 2015.

5. Ashton LM, Hutchesson MJ, Rollo ME, Morgan PJ, Collins CE. A scoping review of risk behaviour interventions in young men. BMC public health. 2014;14:957.

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