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Prevalence of psychotropic drug use prior to driving

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ABSTRACT

The prevalence and adverse consequences of alcohol-impairment in drivers of motor vehicles is well documented. By comparison, driving under the influence of legal and illegal psychotropic drugs is poorly characterised in most countries. This study was conducted to investigate the prevalence of drugged driving in New Zealand, and to obtain a profile of the types of drugs most commonly taken prior to driving. A stratified sample (n=2000) of drivers (representative of the age distribution of licensed drivers) from across NZ completed a telephone survey (41% male, mean age 47.26 years). Additional participants completed the survey online (n=434; 28% male, mean age 34.54 years) Participants were asked to report their use of 17 different types of prescription and non-prescription psychoactive drugs in the previous 12 months and to indicate if they had taken them less than 3 h prior to driving. The legal drugs most commonly taken prior to driving (other than alcohol, consumed by 13% of the sample) were strong painkillers (11%), antidepressants (7%) anti-nausea medication (4%) and anti-anxiety medication (3%). Other than cannabis, taken by 4% of the sample, the prevalence of illegal drug use less than 3 h before driving was generally low (< 0.1%). Male gender and younger age and higher income were associated with driving under the influence of alcohol and less than 3 h after illegal drug use. A small but significant proportion (12%) of drivers reported taking combinations of drugs prior to driving. Combinations of legal drugs (typically painkillers) were most common (6%), however alcohol was taken with other drugs by 38% of the combined drug users. This is of particular concern as drugs combined with alcohol lead to significantly higher crash risks and driving related impairments than drugs or alcohol alone. Efforts should be made to better communicate this risk to drivers.

1. Introduction

Motor vehicle crashes are a major cause of death and disability in New Zealand (NZ). Between 2011 and 2013, alcohol and other drugs contributed to 30% of fatal crashes, 20% of serious injury crashes and 12% of minor injury crashes (Ministry of Transport, 2014). Although the incidence and adverse consequences of alcohol impaired driving is well understood and documented (Phillips and Brewer, 2011; Starkey and Charlton, 2014), the prevalence of drivers' use of psychotropic drugs, legal and illegal, in NZ has yet to be established. Although more comprehensive data are available overseas, including roadside surveys (Berning et al., 2015) and studies of the crash risk of drunk / drugged driving (Compton & Berning, 2015) the drugged driving profile of drivers appears to differ by country (Houwing et al., 2011; Walsh et al., 2004), limiting the

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generalizability of these data to NZ.

Numerous studies have documented and evaluated the effects of legal and illegal drugs on driving ability (e.g., Ravera et al., 2012; Brunnauer and Laux, 2013). Commonly used prescription medicines including those used to treat depression (e.g., tricyclic antidepressants), anxiety (e.g., benzodiazepines), insomnia (e.g., Z-drugs) and pain (e.g., opiate based analgesics), may impair driving skills and increase crash risk (e.g., Bernhoft, 2011; Mindell et al., 2014; Strand et al., 2011), and the number of scripts written for these types of medications are increasing (PHARMAC, 2014). The negative effects of cannabis on driving performance are also well documented; cannabis use is associated with an increased risk of being injured or killed (Bernhoft, 2011), and impairs driving skills including speed, headway and lateral control (Lenné et al., 2015, Hartman et al., 2015). When drugs are taken in combination, particularly with alcohol, the risk is greatly increased and in some cases (e.g., cannabis) the effects are thought to be multiplicative (Biecheler et al., 2008).

There is some limited information about the level of drugged driving in NZ. The New Zealand Alcohol and Drug Use Survey (NZADUS), found that one in six New Zealanders aged 16–64 years reported using drugs recreationally in the last year and of these, 35% reported driving a car under the influence of drugs (the sample was identified using a multistage stratified random sampling procedure based on area blocks). Driving after drug use was most common in males aged 18–24 years (Ministry of Health, 2010). Whilst these data provide a useful indication of the likely prevalence of drugged driving, the survey did not explore in detail the specific types of drugs used prior to driving. A more recent internet survey of

Table 1
Demographic characteristics of the participants completing the telephone and internet surveys.

	Telephone survey n=2000	Internet survey n=434	Test of difference between survey types
Gender[a]			
Male (%)	814 (41)	119 (27)	$X^2(1)=15.51$, $p<0.01$
Female (%)	1186 (59)	276 (64)	
Age (years)[a]			
Mean (SD)	47.26 (17)	34.54 (15)	$t(1,2354)=14.19$, $p<0.001$
Range	16–95	17–74	
Ethnicity n (%)			
NZ European	1445 (83)	288 (66)	$X^2(3)=7.26$, $p=0.06$
Maori	163 (8)	45 (10)	
Other European	331 (17)	55 (13)	
Pacific Island	54 (3)	6 (1)	
Income (NZ$); n(%)			
< 5000	156 (8)	39 (9)	$X^2(4)=6.16$, $p=0.19$
5001–50,000	769 (39)	187 (43)	
50,000–100,000	543 (27)	100 (23)	
> 100,000	168 (8)	29 (7)	
Missing/Refused	364 (18)	79 (18)	
Driving experience			
Mean years licenced (SD)	29.07 (17)	17.48 (14)	$t(734.8)=15.15$, $p<0.001$
Mean no. trips/week (SD)	15.35 (13)	14.24 (10)	$t(788.78)=1.90$. $p=0.06$
Mean % rural driving (SD)	64.42 (29)	30.77 (31)	$t(681.44)=21.68$, $p<0.001$
Licence type; n (%)			
Learners	76 (4)	16 (4)	$X^2(3)=33.78$, $p<0.001$
Restricted	157 (8)	64 (15)	
Full	1751 (88)	354 (82)	
Don't hold one	16 (0.8)	0 (0)	
Location; n (%)			
Northland	76 (4)	1 (0.2)	$X^2(18)=1097.75$, $p<0.001$
Auckland	636 (32)	10 (2)	
Waikato	215 (11)	318 (73)	
Bay of Plenty	129 (7)	44 (10)	
Gisborne	15 (0.8)	1 (0.2)	
Hawkes Bay	66 (3)	2 (0.5)	
Taranaki	57 (3)	0 (0)	
Wanganui/Manawatu	90 (5)	1 (0.2)	
Wairarapa	25 (96)	1 (0.2)	
Wellington	162 (8)	4 (0.9)	
Nelson Bays	19 (4)	1 (0.2)	
Marlborough	19 (1)	0 (0)	
West Coast	20 (1)	1 (0.2)	
Canterbury	292 (15)	5 (1)	
Otago	117 (6)	4 (0.9)	
Southland	45 (2)	0 (0)	
Timaru-Omaru	0 (0)	1 (0.2)	
Other	12 (0.6)	0 (0)	
Missing/Refused	5 (0.3)	40 (9)	

[a] 38 participants completing the online survey did not give their gender and/or age.

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