Deterrence of Drug Driving:
The Impact of the ACT Drug Driving Legislation and Detection Techniques

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EXECUTIVE SUMMARY

The relatively recent implementation of legislation in the Australian Capital Territory (ACT) that allows police to conduct roadside oral fluid screening provides a unique opportunity to explore the initial impact of the legislation and subsequent enforcement techniques. The current research sought to examine the impact of the recently introduced use of roadside oral fluid screening in the ACT, by addressing the following research questions:

1) What are the current drug driving practices of ACT motorists and what types of drugs are used and their frequency?
2) What are ACT motorists' awareness levels of current roadside saliva based drug testing operations?
3) What is the perceived deterrent impact of roadside saliva based drug testing operations?
4) What are the interrelationships between the demographic, classical deterrence theory, and reconceptualised deterrence theory and which of these factors are predictive of future intentions to drug drive?
5) What are the differences between key population subgroups (male and females as well those aged 17-29 and over 30 years) for intentions to drug drive and perceptions of legal sanctions?
6) Develop recommendations that could strengthen the specific and general deterrent impact of roadside saliva based drug testing operations.

An over-the-phone questionnaire based interview was used to explore the past experience, perceptions, attitudes and intentions of 801 motorists from the ACT regarding driving under the influence of illicit drugs. The responses of participants were analysed using a broad range of statistical tests in order to explore differences between sub-groups of the sample population and factors which influenced intentions to drive under the influence of illicit drugs.

Results

- The average age of participants was 39.17 years (*SD* = 19.19; range = 17-88) with an equal distribution of males and females.
- The majority of participants (*n* = 573; 71.54%) were employed at the time of the interview.
- The majority of participants (*n* = 604; 75.41%) drove a motor vehicle daily, 22.22% (*n* = 178) drove between three and five times a week, and 2.37% (*n* = 19) drove once a week.
- In total, 3.62% (*n* = 28) of participants reported having been convicted of a criminal offence, the majority of those with a conviction (1.75%) reporting a previous drink driving conviction.
- Overall, 36.21% (n = 290) of participants reported having used one of the listed illicit drugs (i.e., cannabis, meth/amphetamine, or ecstasy) in the past.
- Cannabis was the most frequently used substance, followed by ecstasy, and meth/amphetamine substances.
- A total of 10.74% of participants indicated that they had ever driven a vehicle within 24 hours of using an illicit drug.
- Males were more likely to have driven with 24 hours of using an illicit drug.
- The vast majority of those who had driven within 24 hours of using an illicit drug (93.02%) first did so when they were under the age of 25.
- Younger and older participants were equally likely to have driven within 24 hours of using an illicit drug.
- Of the 10.74% who had ever driven within 24 hours of taking an illicit drug, 41.86% had done so since the introduction of roadside oral fluid screening in the ACT.
- In the 12 months prior to participation 3.47% of the sample reported driving within 4 hours of using cannabis, whilst smaller proportions reported driving within 4 hours of using meth/amphetamine or ecstasy (0.49% and 0.87% respectively).
- A total of 4.99% (*n* = 40) of participants reported they did intend to drive after using one of the listed illicit drugs in the next six months.

- A total of 61.55% (*n* = 493) of the sample were aware that roadside oral fluid screening had been introduced in the ACT.
- For those who had driven after using illicit drugs in the past, awareness of roadside screening was not related to driving after illicit drug use in the past year.
- However, among the entire sample, those who driven after using illicit drugs since the introduction of roadside oral fluid tests were more likely to be aware of roadside oral fluid testing.
- Those under the age of 30 years were more likely to have driven within 24hours of taking an illicit drug since the introduction of roadside testing.
- Males and females were equally likely to have driven within 24 hours of using illicit drugs since the introduction of roadside oral fluid screening.
- Further, 11.74% of the total sample reported having been a passenger with a driver who thought had been using illicit drugs prior to driving since the introduction of roadside oral fluid testing.
- Those who had been a passenger showed greater awareness of the introduced roadside screening, and were more likely to be under 30 years of age and male.
- Approximately one quarter (25.72%; *n* = 206) of participants reported that the current penalty, if convicted of drug driving, was a fine and licence loss.
- Just over half of the participants (51.69%; *n* = 414) believed that the penalty for conviction of a drug driving offence would be more severe and involve a fine, licence loss, probation, and drug counselling.
- Approximately half (50.68%; *n* = 406) reported that operations would be effective or extremely effective in detecting drivers who had recently used illicit drugs.
- Conversely, 36.20% (*n* = 290) reported they were unsure how effective roadside oral fluid screening operations in the ACT would be, and 13.12% (*n* = 105) reported such operations would be ineffective or extremely ineffective.
- With regards to the three main aspects of deterrence theory, the majority of participants rated the *certainty* of apprehension to be moderate, and the *severity* of sanctions to be high.

- Approximately one-third of participants believed that the application of sanctions would be *swift*.
- Only one participant reported they had been convicted of a drug driving offence in the past, however, 21.28% of participants reported vicarious punishment (i.e., knowing of someone who had experienced some form of punishment, either a fine or licence disqualification).
- Future intentions to drive within 4 hours of using illicit drugs were correlated with younger age, unawareness of roadside oral fluid screening, having previously avoided punishment, not knowing someone else who has been punished, and knowing someone who has avoided punishment.
- Logistic regression found that age, and experience of personal and vicarious punishment avoidance could be used to best predict future drug driving.

Conclusion

The current study sought to explore the initial impact of the ACT's implementation of roadside oral fluid drug screening program. The results suggest that a number of individuals reported intentions to drug drive in the future. The classical deterrence theory variables of certainty of apprehension, severity and swiftness of sanctions were not predictive of intentions to drug drive in the future. In contrast, having avoided apprehension and having known of others that have avoided apprehension were predictive of intentions to drug drive in the future. Increasing perceptions of the certainty of apprehension, increased testing frequency, and increased awareness of the oral fluid drug screening program could potentially lead to reductions of drug driving and result in safer road environment for all ACT community members.

PREFACE

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INTRODUCTION

Drug driving is a particular concern for road safety as experimental, simulated, and on-road driving studies show that illicit drug use such as cannabis (delta-9-tetrahydrocannabinol (THC), speed and ice (methamphetamine (MA), and ecstasy (3,4-methylenediox-methamphetamine (MDMA) impairs cognitions, psychomotor abilities, and subsequent driving performance (Battistella et al., 2013; Lundqvist, 2005; Ramaekers, Berghaus, van Laar, & Drummer, 2004). A growing body of research suggests there is a strong relationship between drug use and increased crash likelihood and culpability (Asbridge, Hayden, & Cartwright, 2012; Drummer et al., 2004a; Drummer et al., 2003; Mura et al., 2006). Internationally and within Australia, between 8.80%-39.60% of road fatalities have been found to involve drivers who had used illicit drugs (del Río, Gómez, Sancho, & Alvarez, 2002; Drummer et al., 2003, 2004b; Mura et al., 2006; Swann, Boorman, & Papafotiou, 2004) and 2.70%-41.30% of road injuries have been found to involve drugs and alcohol (Athanaselis et al., 1999; Longo, Hunter, Lokan, White, & White, 2000). It is important to note that the broad range of percentages in the above studies may be partially influenced by the geographic location in which they were conducted, as well as by methodological factors. The samples used in the above studies were taken from a range of individuals, including drivers in fatal crashes, drivers killed in fatal crashes, drivers under the age of 30 who were killed in fatal crashes, drivers injured in crashes, and drivers involved in serious crashes resulting in injury. Typically, those studies focussed on injured or killed drivers revealed higher levels of illicit drug use.

Age, sex and drug driving

Evidence from roadside oral fluid testing in Queensland demonstrate that drug driving occurs at various ages and across both sexes (Davey, Armstrong, & Martin, 2014). However, specific cohorts have been identified to engage in drug driving to a greater extent. Higher rates of serious injury in motor vehicle crashes occur in the age range of 15-24, with males accounting for approximately two-thirds of serious injury cases (Berry & Harrison, 2007). The age range of 18-30 years is found to have the highest prevalence of drug driving (Akram &

Forsyth, 2000). Additionally, drivers under the age of 25 years have been reported to have the highest culpability rates among drivers fatally injured in crashes when effected by drugs (Drummer et al., 2004b). Finally, surveys of drivers in Spain indicate that driving under the influence of cannabis is a more frequent event within the 20-29 age range, (Alvarez, Fierro, & Del Rio, 2007).

The 2010 National Drug Strategy Household Survey reports that, amongst those who have used illicit drugs within the past 12 months, males (21.50%) were almost twice as likely to drug drive than females (13.20%) (Australian Institute of Health and Welfare, 2011). Furthermore, findings from surveys of drivers (Davey et al., 2014), and toxicology analysis of drivers suspected of driving under the influence of illict drugs (A. W. Jones, 2007), injured or fatally injured in crashes (Drummer et al., 2004a; Drummer et al., 2003; Longo et al., 2000), demonstrate that drug driving is more prevalent amongst males, and more ubiquitous among younger adult males (Akram & Forsyth, 2000). Specifically, results from Queensland roadside oral fluid screening of over 80,000 drivers suggests that males are more likely to be detected driving after using cannabis, MA, MDMA, or a combination thereof (Davey et al., 2014). It is important to note that, as roadside oral fluid screening in Queensland is not conducted randomly, the numbers of individuals detected with discernible levels of illicit drugs is not representative of population levels. Nonetheless, the numbers of detections for each illicit drug in males and females are displayed in figure 1. Considered together, drug driving appears to be more prevalent in certain cohorts.

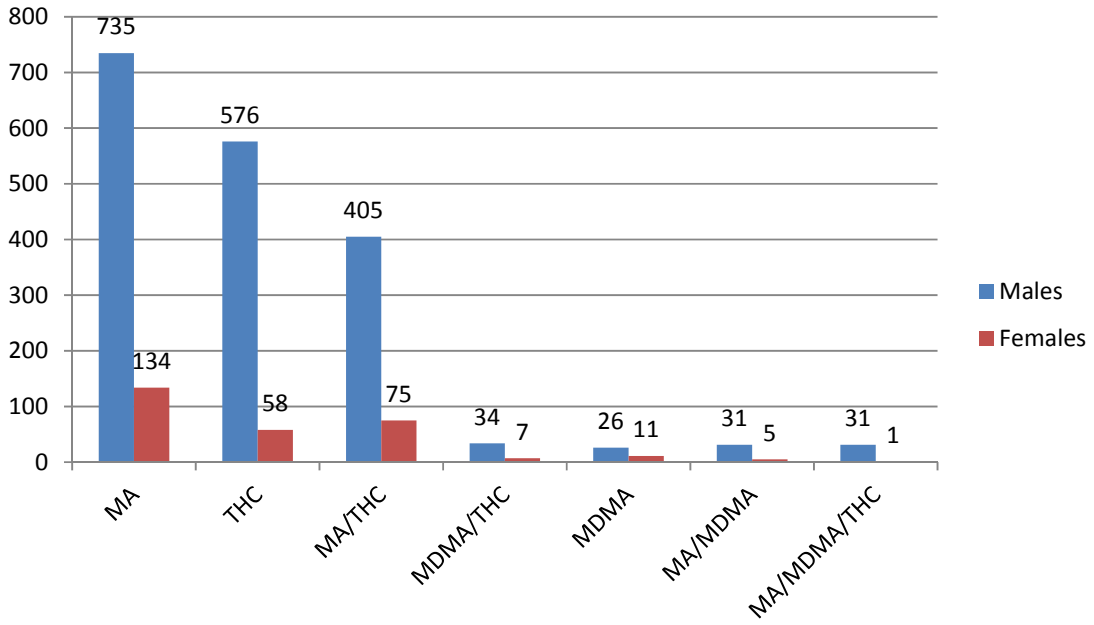

Figure 1*:* Frequency of positive tests by drug type and sex (from Davey, Armstrong, Martin (2014)). MA = methamphetamine (speed or ice); THC = cannabis; MDMA = 3,4-methylenediox-methamphetamine (ecstasy).

Detecting drug drivers

The first Australian state to implement a legislative framework to allow police to randomly stop drivers and collect a roadside oral fluid sample to assist in laying a drug driving charge was Victoria. The premise behind the amended legislation was to provide police with an immediate roadside strategy for interdiction. More importantly, and in line with general Australian policing strategies for random breath alcohol testing, roadside oral fluid screening offers a platform for an effective on-going deterrence strategy (Drummer et al., 2007). Roadside oral fluid screening programs have now been adopted by all Australian policing jurisdictions (see Table 1), with Australia's Capital Territory (ACT) implementing roadside oral fluid drug testing in May 2011 following amendments to the Road Transport (Alcohol and Drugs) Act 1977. The amended legislation allows police to conduct random roadside oral fluid screening for THC, MA, and MDMA. The maximum penalty for drug driving is a fine of 10 penalty units for a first offence, or 25 penalty units and up to three months imprisonment for a repeat offender. A court can also issue a period of licence disqualification. Non-cooperation

with the testing is also considered an offence and can result in fines or imprisonment (Australian Federal Police, 2013).

Table 1: Month and year each Australian jurisdiction introduced roadside oral fluid testing

Australian Jurisdiction	Month/Year
Victoria	December 2004
Tasmania	July 2005
South Australia	July 2006
New South Wales	December 2006
Western Australia	October 2007
Queensland	December 2007
Northern Territory	July 2008
Australian Capital Territory	May 2011

The efficacy of road safety countermeasures to deter individuals from engaging in illegal behaviours is extremely important. The creations of laws making it an offence to drive after using drugs (i.e., zero-tolerance laws) sends a strong message about the dangers of drug driving and can facilitate a deterrent effect (Schwilke, Sampaio dos Santos, & Logan, 2006). That is, roadside oral fluid screening is perceived to be a deterrent amongst some drug drivers (Stevenson et al., 2001). For example, some reports suggest that current drug drivers would consider changing their drug driving behaviours with the initiation of roadside oral fluid screening (Degenhardt, Dillon, Duff, & Ross, 2006). The introduction of roadside oral fluid screening seeks to curtail the continual avoidance of apprehension of drug drivers.

Classical deterrence theory

Deterrence theory has always been utilised as the conceptual framework underpinning traffic enforcement, with criminal justice policy also utilising deterrence theory as a central facet. The underlying principle of classical deterrence theory proposes that the perceived

consequences of engaging in illegal behaviour will dissuade the illegal behaviour (Homel, 1988; Zimring & Hawkins, 1973). Specifically, it has been proposed that when an individual perceives the certainty of apprehension as high, the punishment as severe, and the administration of punishment as swift the committing of criminal acts will be deterred (Ross, 1990; Taxman & Piquero, 1998).

Perceptions of certainty, severity and swiftness are conditional on the intensity and effectiveness of enforcement (Homel, 1988; Taxman & Piquero, 1998). That is, the perceptions of deterrence effectiveness typically reduce over time (Homel, 1986). As such, special operations or "blitzes" involving highly publicised and highly visible enforcement may have a temporary effect of increasing perceptions of certainty of detection (Homel, 1988). Additionally, high levels of publicity and awareness of legal sanctions and penalties also contribute to enhancing the effectiveness of deterrence (Elvik & Christensen, 2007; Watling, Freeman, & Davey, 2014).

Classical deterrence theory operates via two distinctly different processes: general and specific deterrence (Paternoster & Iovanni, 1986; Ross, 1990; Zimring & Hawkins, 1973). General deterrence operates via the awareness of legal sanctions that is held by the general public for committing illegal acts. For example, awareness of the penalties for drug driving which has a deterring effect on an individual from drug driving is an instance of general deterrence. In contrast, specific deterrence operates at the individual level, deterring individuals via direct experience of legal sanctions. An example of specific deterrence is the experiencing of legal sanctions for drug driving. Classical deterrence can only operate on an individual as either general deterrence or specific deterrence, not concurrently (Paternoster & Piquero, 1995).

Classical deterrence theory is however, not without its limitations and has been critiqued on a number of aspects. As mentioned previously, a limiting factor for deterrence is the necessity to keep reinforcing the deterrence effectiveness over time due to its temporary effects (Dula, Dwyer, & LeVerne, 2007; Homel, 1986). Additionally, the cornerstone of classical deterrence theory is the experiencing of legal punishment, yet it neglects the influence of punishment avoidance. Also, classical deterrence theory fails to account for the effect that

vicarious experiences can have on an individual's perceptions. As evidence has accrued deterrence theory has undergone a number of conceptual and theoretical changes.

Reconceptualisation of deterrence theory

A reconceptualisation of deterrence theory was postulated by Stafford and Warr (1993) proposing to account for the limitations of classical deterrence theory. This theory includes both the direct and vicarious effects of punishment as well as punishment avoidance. The authors assert that specific deterrence needs to be considered as the direct effects of punishment and punishment avoidance on an individual, with general deterrence being the vicarious experiencing of punishment and punishment avoidance. Further, the effects of general and specific deterrence can affect an individual concurrently.

Experience of punishment

Consistent with classical deterrence theory, the effects of punishment are believed to act as a deterrent for future offending. Additionally, the experiencing of punishment affects the perceptions of certainty and severity of punishment. Counter-intuitively, the majority of published studies utilising Stafford and Warr (1993) theory have found a positive and significant relationship between the experiencing of punishment and the likelihood of offending (e.g., Paternoster & Piquero, 1995; Piquero & Pogarsky, 2002; Sitren & Applegate, 2007). This positive punishment effect is likely due to the resetting effect, which involves the decision making bias known as the gambler's fallacy. After apprehension, an offender lowers their certainty of apprehension estimate, believing that being apprehended again in a short period of time is extremely unlikely (Piquero & Pogarsky, 2002; Pogarsky & Piquero, 2003). Nonetheless, not all studies have discovered a positive punishment effect. Piquero and Paternoster (1998) examined drinking and driving and found that experiences of punishment resulted in participants reporting being unlikely to drink drive in the future, although this relationship was non-significant. As for the present context, roadside oral fluid screening in itself is perceived to be a deterrent for some drug drivers (Stevenson et al., 2001).

Experience of punishment avoidance

Punishment avoidance is argued to be a major component affecting the deterrent process. The effect of punishment and punishment avoidance influences the predisposition to commit crimes in disparate trends (Stafford & Warr, 1993). It is likely that punishment avoidance reinforces illegal behaviours (Paternoster & Piquero, 1995) and reduces perceptions of the certainty of punishment. Most studies utilising Stafford and Warr's (1993) theory have also found that punishment avoidance has had the strongest relationship with the propensity to offend (Freeman & Watson, 2006; Paternoster & Piquero, 1995; Piquero & Paternoster, 1998; Piquero & Pogarsky, 2002; Sitren & Applegate, 2007).

The potential for a general deterrent effect from the instigation of roadside oral fluid screening has been noted previously. That is, research suggests that many individuals would discontinue their drug driving due to the implementation of roadside oral fluid screening (Degenhardt et al., 2006). Avoidance of punishment acts as a reinforcer for the continual drug driving behaviour of individuals that are not apprehended. Degenhardt et al. (2006) found that 40% of their participants would discontinue their drug driving due to the implementation of roadside oral fluid screening. This finding highlights the importance of punishment avoidance, such that when the possibility of apprehension is increased, some drug driving motorists will endeavour to make alternate transportation arrangements (Degenhardt et al., 2006; Furr-Holden, Voas, Kelley-Baker, & Miller, 2006).

Vicarious experience of punishment

Stafford and Warr (1993) have also acknowledged the importance of vicarious learning in their theory. Knowing of others that have experienced legal sanctions for illegal behaviours, can be a deterring factor for others considering committing a similar crime and increases an individual's perception of certainty of punishment (Paternoster & Piquero, 1995; Stafford & Warr, 1993). Nonetheless, the perceived risk of others has been proposed to be less influential to the individual than their own perceived risk (Jensen, Erickson, & Gibbs, 1978; Paternoster & Piquero, 1995). Studies investigating the effects of vicarious experience of punishment have found (like experiences of punishment) that vicarious experiences of punishment have been

related to increases in the propensity to commit offences (e.g., Piquero & Paternoster, 1998; Piquero & Pogarsky, 2002; Sitren & Applegate, 2007). However, Freeman and Watson (2006) found a non-significant relationship with vicarious punishment, yet the direction of the relationship indicated a reduction in offending. Therefore, the evidence is equivocal regarding vicarious experiences of punishment avoidance.

Vicarious experience of punishment avoidance

Similar to punishment avoidance, the vicarious experience of punishment avoidance weakens the effectiveness of deterrence and increases the propensity of offending (e.g., Freeman & Watson, 2006; Piquero & Paternoster, 1998; Sitren & Applegate, 2007; Watling, Palk, Freeman, & Davey, 2010). Further, knowing of others that have avoided punishment for committing an offence has been found to reduce the perception of certainty of apprehension (Piquero & Pogarsky, 2002). The extent of the influence of vicarious punishment avoidance is less than that of direct punishment avoidance. However, previous work suggests that vicarious experiences might be more influential in the drug using culture than personal experiences of punishment avoidance (Watling et al., 2010) as fellow drug users provide a normative frame of reference (van Dijk, 2008).

The influence of vicarious experiences of punishment avoidance has been noted by previous work. As stated previously, regular drug users believe that they are less likely to be caught for drug driving (Darke, Kelly, & Ross, 2004). An individual's low certainty of apprehension is reinforced via knowledge of friends who have avoided apprehension for drug driving (McIntosh, O'Brien, & McKeganey, 2007). Regular drug driving is facilitated by having friends who drug drive and avoid punishment (Duff & Rowland, 2006). For example, regular drug users report being driven by a friend under the influence of an illicit substance between 80-88% of the time (Darke et al., 2004; Lenné, Fry, Dietze, & Rumbold, 2001). As such, the effects from vicarious experiences of punishment avoidance are potentially an important aspect with drug driving.

The current study

The relatively recent implementation of legislation in the Australian Capital Territory (ACT) that allows police to conduct roadside oral fluid screening provides a unique opportunity to explore the initial impact of the legislation and subsequent enforcement techniques. There is a paucity of studies that assess the outcome of how new policies effect perceptions of apprehension. As such, the proposed research will add to the existing body of drug driving research in a number of ways. Considering the literature described previously, the following research questions were posited:

7) What are the current drug driving practices of ACT motorists and what types of drugs are used and their frequency?
8) What are ACT motorists' awareness levels of current roadside saliva based drug testing operations?
9) What is the perceived deterrent impact of roadside saliva based drug testing operations?
10) What are the interrelationships between the demographic, classical deterrence theory, and reconceptualised deterrence theory and which of these factors are predictive of future intentions to drug drive?
11) What are the differences between key population subgroups (male and females as well those aged 17-29 and over 30 years) for intentions to drug drive and perceptions of legal sanctions?
12) Develop recommendations that could strengthen the specific and general deterrent impact of roadside saliva based drug testing operations.

METHOD

Participants

The participants included 801 individuals from the ACT. The sample had an equal prevalence of males and females (male *n* = 401, female *n* = 400) with similarly equal numbers of

individuals that were either aged 17-29 or above 30 years of age. Based on the previously reviewed literature, this sample was selected to gain a stratified sample for comparative analyses. It should be noted that this distribution of age and sex is not necessarily reflective of the population, though, the data gathered for each age group and sex may be representative of greater population patterns.

Participation in the study was voluntary and participants were free to withdraw from the study at any stage. The only inclusion criterion was that participants were aged 17 years or older, held a current drivers licence, and that they drove a motor vehicle (both private and work related) more than one hour per week.

Materials

The Drug Driving Questionnaire (DDQ) utilised in the study was developed by the Centre for Accident Research and Road Safety – Queensland. The DDQ was thoroughly tested with the NRMA-ACT Road Safety Trust Board and officers of the ACT Federal Police in charge of the roadside drug testing unit. A number of minor changes were made to the DDQ during pilot testing. The final version of the questionnaire is included in Appendix A.

The DDQ is comprised of three sections, with questions relating to 1) demographics, 2) self-reported drug use, and 3) behaviours and perceptions of legal sanctions. The demographic section assessed age, sex, employment status, and typical driving occurrences. The self-reported drug use section measured the levels for usage of cannabis, meth/amphetamine, and ecstasy. Items for the self reported drug use section were assessed using a quasi-Guttman scale with seven verbal anchors: within four hours, within the last 24 hours, within the last week, within the last month, within the last year, more than a year ago, have never used. Guttman scales are constructed using items such that agreement at one level (e.g. every day) automatically indicates agreement to lower levels (e.g. once or twice; Guttman, 1950). In this instance, the use of ‘more than a year age’ and ‘never’, mean that the items are not pure Guttman scales. These items can be analysed as a standard scale, or due to the natural agreement to lower levels, any positive responses (i.e. have used illicit drugs in the past year) can be grouped to enable larger sample sizes. The variable of overall drug use was computed by

first assigning a score of 1 through 7 to the responses of ‘‘have never used’’ to ‘‘within four hours’’ respectively. These values were then summated across all three drugs, such that the overall drug use variable had a range of 3-21 with higher scores indicating greater use of drugs.

The behaviours and perceptions of legal sanctions section assessed a number of facets that are related to drug driving. The outcome variable, ‘intention to drug drive in the next six months’ was assessed on a scale ranging from 0 to 180 - this range indicated the maximum number of days available to drug drive in 6 months. The participants’ awareness levels, knowledge of drug driving sanctions, and perceived effectiveness of roadside oral fluid screening was also assessed. The perceptions Classical Deterrence Theory constructs of certainty, severity, and swiftness as well as the reconceptualised deterrence theory constructs of punishment, punishment avoidance, vicarious punishment, and vicarious punishment avoidance were assessed. The two punishment and two vicarious punishment variables were measured using a dichotomous ‘yes’ or ‘no’ response. The remaining constructs were measures using a 10-point Likert-scale ranging from 1 ‘strongly disagree’ to 10 ‘strongly agree’. Example items included: “The chances of getting caught for driving after using illicit drugs are high” (certainty); “I regularly drive after using illicit drugs and don’t get caught” (punishment avoidance); and “My friends often take illicit drugs and drive without being caught” (vicarious punishment avoidance).

Procedure

Following ethical clearance from the Queensland University of Technology research ethics committee, data was collected by an independent data collection agency (I-View), using a telephone survey methodology. Participants were sourced from the Association of Market and Social Research Organisations Random Digit Dialing system. The approach utilised relied on the Computer Assisted Telephone Interview (CATI) system by a team of 15 experienced interviewers, who were specifically trained to conduct the data collection. The call routine that was employed for the current study included evening calls during Monday to Friday between 16:30 and 20:30, and calls made between 09:00 and 17:00 on Saturdays and Sundays. On

average, the duration of the interview was 12.61 minutes. The response rate achieved for this study was 58%.

Statistical analyses

A number of the study variables had non-normal distributions. Therefore, non-parametric analyses were used. Spearman's Rho coefficient and Point-biserial coefficient were used to examine the inter-correlations between variables. A logistic regression was used to determine the predictors of intentions to drug drive in the future. As such, the outcome variable of future intentions to drug drive (a continuous variable) was changed to a dichotomous variable. Last, Mann-Whitney U and Chi-squared analyses were used to determine differences between key population subgroups (i.e., males and females and those aged17-29 or older than 30 years of age). It must be noted that the reconceptualised deterrence theory variables of punishment could not be used in the following analyses as not enough of participants reported experiences of punishment.

RESULTS

Participant characteristics

The average age of participants was 39.17 years (*SD* = 19.19; range = 17-88) with an equal distribution of males and females. The majority of participants (*n* = 573; 71.54%) were employed at the time of the interview, however the reported employment positions were quite varied (e.g., army officer, baker, public servant, sleep technician, waitress) and was expected given the random sampling method used to recruit participants. The majority of participants (*n* = 604; 75.41%) drove a motor vehicle daily, 22.22% (*n* = 178) drove between three and five times a week, and 2.37% (*n* = 19) drove once a week. In total, 3.62% (*n* = 28) of participants reported having been convicted of a criminal offence, the majority of those with a conviction (1.75%) reporting a previous drink driving conviction.

Self-reported illicit drug use

The first aim of this study was to examine the participants' self-reported illicit drug use. Overall, 36.21% (n = 290) of participants reported having used one of the listed illicit drugs (i.e., cannabis, meth/amphetamine, or ecstasy) in the past. Specifically, cannabis was the most frequently used substance, followed by ecstasy, and meth/amphetamine substances. The participants' self-reported illicit drug use is reported (see Table 2). Self-reported illicit drug use by age and sex is reported separately (see Table 3).

Table 2. The percentage of self-reported use of an illicit substance

	Type of illicit substance		
Frequency of drug use	Cannabis	Meth/amphetamine	Ecstasy
Within the last 4 hours	0.64%	0.12%	0.12%
Within the last 24 hours	1.37%	0.12%	0.25%
Within the last week	1.00%	0.12%	-
Within the last month	2.37%	0.75%	0.87%
Within the last year	4.99%	0.87%	1.63%
More than a year ago	25.09%	4.51%	7.12%
Have never used	64.54%	93.51%	90.01%

Table 3. Age and sex divisions for the percentage of self-reported use of an illicit substance

	Type of illicit substance											
	Cannabis				Meth/amphetamine				Ecstasy			
	Age		Sex		Age		Sex		Age		Sex	
Frequency of drug use	17-29	≥30	Male	Female	17-29	≥30	Male	Female	17-29	≥30	Male	Female
Within the last 4 hours	1.0%	0.25%	1.00%	0.25%	0.25%	-	0.25%	-	0.25%	-	0.25%	-
Within the last 24 hours	2.0%	0.75%	2.00%	0.75%	0.25%	-	-	0.25%	0.5%	-	0.50%	-
Within the last week	1.75%	0.25%	1.25%	0.75%	0.25%	-	0.25%	-	-	-	-	-
Within the last month	4.50%	0.25%	2.99%	1.75%	1.25%	.25%	1.00%	0.50%	1.75%	-	1.25%	0.50%
Within the last year	8.75%	1.25%	7.48%	2.50%	1.50%	.25%	1.50%	0.25%	3.25%	-	2.49%	0.75%
More than a year ago	23.25%	26.93%	26.18%	24.00%	5.00%	3.99%	6.48%	2.50%	8.75%	5.49%	8.48%	5.75%
Have never used	58.75%	70.32%	59.10%	70.00%	91.50%	95.51%	90.52%	96.50%	85.50%	94.51%	87.03%	93.00%

Self-reported drug driving

A total of 10.74% of participants indicated that they had ever driven a vehicle within 24 hours of using an illicit drug. There was a significant relationship between having ever driven within 24 hours of consuming an illicit drug, with males at an increased likelihood ($\chi^2(1) = 7.31$, $p < 0.05$). The mean age at which this first occurred was 20.3 years of age. When further examining the distribution of ages at which this first occurred, 46.51% were 18 year or younger and 93.02% were 25 years old or younger. There was, however, no significant relationship between current age group (17-29 or ≥30) and having ever driven within 24 hours of taking an illicit drug. Due to the broad nature of this question, particularly in relation to the lack of certainty for which a person would still be under the influence of an illicit drug after 24 hours, and the broad time frame, giving no indication of whether this behaviour has continued recently, no further analysis of this item will be used.

An indication of self-reported drug driving in the past year was obtained using the measure described in Materials section (included in Appendix A). Table 4 outlines the responses of the sample (N = 801) by drug group (i.e., cannabis, meth/amphetamine, or ecstasy). The most common illicit drug that drivers in this sample reported using before driving was cannabis, followed by ecstasy. Whilst the proportions seen in table 4 may appear low, it is important to recognise that the phrasing of the question to exclude driving after four hours since taking an illicit drug limits the responses to those most likely to have their driving ability negatively influenced by illicit drugs. Table 5 outlines self-reported illicit drug use and driving by age and sex. Examination of the dichotomised outcome variable of intentions revealed that 4.99% (n = 40) of participants reported they did intend to drive after using one of the listed illicit drugs in the next six months, as this scale was measured in the number of days in the next six months (0-180) in which the individual intended to drive after using one of the listed illicit drugs, the mean score was low (1.39 days in the next six months) yet this mean largely reflects the 95.01% of individuals who do not intend to drive after using illicit drugs. When examining the number of days in the next six months that those who do intend to drive after using illicit drugs will do so, the average increased to 27.8 days within the next six months.

Table 4. The frequency of driving in the last year, within four hours after using an illicit substance

	Type of illicit substance		
Frequency of driving	Cannabis	Meth/amphetamine	Ecstasy
Everyday	0.37%	-	-
More than once a week	0.12%	-	-
About once a week	0.37%	0.12%	-
11 to 20 times	0.12%	0.12%	-
Three to ten times	0.87%	0.25%	0.37%
Once or twice	1.62%	-	0.50%
Never	96.53%	99.51%	99.13%

Table 5. Age and sex divisions for the frequency of driving in the last year, within four hours after using an illicit substance

	Type of illicit substance											
	Cannabis				Meth/amphetamine				Ecstasy			
	Age		Sex		Age		Sex		Age		Sex	
Frequency of drug use	17-29	≥30	Male	Female	17-29	≥30	Male	Female	17-29	≥30	Male	Female
Everyday	0.75%	-	0.50%	0.25%	-	-	-	-	-	-	0.75%	-
More than once a week	0.25%	-	0.25%	-	-	-	-	-	-	-	0.75%	-
About once a week	0.50%	0.25%	0.75%	-	0.25%	-	0.25%	-	-	-	-	-
11 to 20 times	0.25%	-	0.25%	-	0.25%	-	0.50%	0.25%	-	-	-	-
Three to ten times	1.25%	0.50%	0.75%	1.00%	0.25%	0.25%	-	-	0.75%	-	-	-
Once or twice	3.00%	0.25%	2.50%	0.75%	-	-	-	-	1.00%	-	-	1.92%
Never	94.00%	99.00%	95.00%	98.00%	99.25%	99.75%	99.25%	99.75%	98.25%	100%	98.50%	98.08%

Awareness and effectiveness of roadside drug testing

The second aim of the study was to determine participant's awareness of current roadside oral fluid screening operations in the ACT since its introduction in May, 2011. The proportion of participants that were aware that oral fluid drug testing operations had commenced was 61.55% (*n* = 493); while 3.24% were not sure (*n* = 26), and 35.21% were completely unaware (*n* = 282).

Of the 10.74% who had ever driven within 24 hours of taking an illicit drug, 41.86% (36 drivers) had done so since the introduction of roadside oral fluid screening in the ACT. Within those that had ever driven after using an illicit drug, there was no statistically significant relationship between awareness of roadside oral fluid testing and whether they had driving after illicit drug use since the introduction of roadside oral fluid testing. However, when examining whether there was a relationship between awareness and having driven after using illicit drugs since the introduction of roadside oral fluid tests, those who had reported this behaviour were more aware of roadside oral fluid testing ($\chi^2(1) = 7.80$, $p < 0.05$). Further, 11.74% of the total sample reported having been a passenger with a driver who thought had been using illicit drugs prior to driving since the introduction of roadside oral fluid testing. Again these individuals were more likely to be aware of the introduction of roadside-testing ($\chi^2(1) = 9.16$, $p < 0.05$). The vast majority (83.33%) of those who had driven within 24hours of taking an illicit drug since the introduction of roadside testing were under the age of 30 years. This represents 7.50% of participants in this age group had riven within 24hours of taking an illicit drug. There was significant relationship between this behaviour and whether the individual was under the age of 30 years ($\chi^2(1) = 18.82$, $p < 0.05$). A similar pattern was found for those who had been a passenger with a driver they thought had taken illicit drugs prior to driving since the introduction of roadside oral fluid testing, with 20.25% of those under 30 years of age having been in this situation ($\chi^2(1) = 55.92$, $p < 0.05$). Similarly, males were more likely than females to have been a passenger for someone they thought had used illicit drugs prior to driving ($\chi^2(1) = 5.77$, $p < 0.05$), but not more likely to have actually driven within 24 hours of

using an illicit substance. It is thus, important to explore perceptions regarding punishments and effectiveness of enforcement.

Approximately one quarter (25.72%; *n* = 206) of participants reported that the current penalty, if convicted of drug driving, was a fine and licence loss. Just over half of the participants (51.69%; *n* = 414) believed that the penalty for conviction of a drug driving offence would be more severe and involve a fine, licence loss, probation, and drug counselling. The remainder of the sample believed that one or a combination of penalties would be applied if convicted for drug driving. Taken together, these results suggest that a sizeable proportion of the participants were unaware of roadside oral fluid screening operations in the ACT and were unsure of the precise penalty if convicted of a drug driving offence.

The participants' perceived effectiveness of the roadside oral fluid screening operations in the ACT was also examined. Approximately half (50.68%; *n* = 406) reported that operations would be effective or extremely effective in detecting drivers who had recently used illicit drugs. Of the remaining participants, 36.20% (*n* = 290) reported they were unsure how effective roadside oral fluid screening operations in the ACT would be, whereas 13.12% (*n* = 105) reported such operations would be ineffective or extremely ineffective.

Perceived deterrent impact of roadside drug testing

The third aim of the study was to determine the perceived deterrent impact of roadside oral fluid screening operations in the ACT. Participants' responses to the Classical Deterrence Theory and the punishment avoidance and vicarious punishment avoidance variables of the reconceptualised deterrence theory were split into three divisions along a 10-point scale representing low (1.00-3.32), moderate (3.33-6.65) and high (6.66-10.00) endorsement of statements. As reported in Table 6, a large proportion of the participants fell into the moderate range regarding the *certainty* of apprehension for engaging in drug driving behaviour. Conversely, the largest proportion of participants perceived the *severity* of sanctions for drug driving to be high. Approximately one-third of participants believed that the application of sanctions would be *swift*. Regarding the reconceptualised deterrence theory variable of experiencing punishment, only one participant reported they had been convicted of a drug

driving offence in the past. In contrast, 21.28% of participants reported vicarious punishment (i.e., knowing of someone who had experienced some form of punishment, either a fine or licence disqualification). Participants' experiences of punishment avoidance and vicarious punishment avoidance were quite low.

Table 6. Self-reported perceptions of the legal sanctions for drug driving

			Low		Medium		High	
	M	*SD*	%	*n*	%	*n*	%	*n*
Classical Deterrence Theory								
Certainty	5.15	2.32	28.84	231	42.70	342	28.46	228
Severity	6.65	2.85	17.60	141	31.71	254	50.69	406
Swiftness	5.71	2.43	18.60	149	50.81	407	31.59	245
Reconceptualised Deterrence Theory								
Punishment Avoidance	1.81	2.06	86.89	696	7.49	60	5.62	45
Vicarious Punishment Avoidance	2.75	2.59	71.79	575	16.73	134	11.48	92

Interrelationships and future intention to drug drive

The fourth aim of the study was to examine the interrelationships between the demographics, classical deterrence theory, and reconceptualised deterrence theory and determine which of these factors are predictive of future intentions to drug drive. Table 7 reports the Spearman's Rho coefficient and Point-biserial coefficients for all variables. It can be seen that the variable of age, awareness, punishment avoidance, vicarious punishment, and vicarious punishment avoidance were significantly correlated with the outcome variable of future intentions of drug driving. All were in the expected direction. A moderate correlation was observed between intentions to drug drive in the future and experiences of punishment avoidance. Similarly, punishment avoidance and vicarious punishment avoidance were also moderately correlated. Vicarious punishment avoidance revealed a small to moderate correlation with the outcome variable.

Table 7. Spearman's rho and point-biserial correlation coefficients for study variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Intentions to drug drive in the future[a]	-									
2. Age	**-.15***	-								
3. Sex(male)[b]	.05	-.01	-							
4. Awareness(yes)[b]	**-.08***	**.14****	**-.09****	-						
5. Certainty	-.01	**-.15****	**.09***	.06	-					
6. Severity	.01	**-.29****	-.06	-.03	**.25****	-				
7. Swiftness	.06	**-.21****	.05	.03	**.22****	**.36****	-			
8. Punishment Avoidance	**.34****	**.08***	**-.07***	.04	.01	**-.09***	-.03	-		
9. Vicarious Punishment(yes)[b]	**-.13****	**.24****	-.03	-.16	**-.13****	-.06	-.07	.01	-	
10. Vicarious Punishment Avoidance	**.26****	**-.18****	-.07	.06	.02	-.02	-.02	**.34****	**-.24****	-

Note: $^{*}p < .05$, $^{**}p < .001$.

[a] Continuous variable; [b] denotes a point-biserial correlation coefficient.

An ordered logistic regression was utilised to examine which demographic and deterrence variables would be predictive of intentions to drug drive in the future. Table 8 shows the logistic regression coefficients, Wald statistics, odds ratios (OR), and 95% confidence intervals.

Age, sex, and awareness of the roadside oral fluid screening operations were entered at the first step. These three variables were a significant predictor of the outcome variable ($\chi^2(1, 3) = 29.50$, $p < .001$). The model accounted for 11.11% of the variance for the propensity to drug drive and correctly classified 94.92% of the participants. Age (OR = 0.95, $p < .001$) and Awareness (OR = 0.37, $p < .05$) were the only significant predictors of intentions to drug drive in the future.

The second step included the addition of classical deterrence theory variables including certainty, severity, and swiftness. Overall, the model was still significant ($\chi^2(1, 6) = 34.23$, $p < .001$); however, the addition of the classical deterrence variables did not significantly increase the predictive power of the model ($\chi^2(1, 3) = 4.73$, $p = .19$). As such, the amount of variance accounted for increased only by 1.75% for a total of 12.86% and the classification accuracy of the model did not change. Age (OR = 0.94, $p < .001$) and the Awareness (OR = 0.38, $p < .05$) variables remained predictive of intentions to drug drive in the future.

The third step included the addition of the reconceptualised deterrence theory variables of punishment avoidance, vicarious punishment, and vicarious punishment avoidance. This step was a significant improvement of the model ($\chi^2(1, 3) = 70.31$, $p < .001$) and continued to be a significant predictor of intentions to drug drive in the future ($\chi^2(1, 9) = 104.54$, $p < .001$). The amount of variance accounted for by this model increased to 37.58%, an increase of 24.72%, and the classification accuracy increased slightly to 96.06%. The variable of Age (OR = 0.95, $p < .001$) remained a significant predictor of the outcome variable, however, the Awareness variable became a non-significant predictor. The reconceptualised deterrence theory variables of Punishment Avoidance (OR = 1.46, $p < .001$) and Vicarious Punishment Avoidance (OR = 1.20, $p < .05$) were predictive of intentions to drug drive in the future.

Table 8. Logistic regression coefficients for intentions to drug drive in the future

					95% Confidence interval for OR	
Variable	B	S.E.	Wald	OR	Lower	Upper
Model 1						
Age	-0.06	0.01	15.41	**0.95****	0.92	0.97
Sex(male)	0.39	0.34	1.36	0.68	0.35	1.31
Awareness(yes)	-0.99	0.39	6.39	**0.37***	0.17	0.80
Constant	-0.68	0.46	2.21	0.51		
Model 2						
Age	-0.06	0.02	16.01	**0.94****	0.92	0.97
Sex(male)	0.35	0.34	1.04	1.42	0.72	2.78
Awareness(yes)	-0.97	0.40	6.03	**0.38***	0.17	0.82
Certainty	-0.11	0.07	2.13	0.90	0.78	1.04
Severity	-0.08	0.06	1.68	0.92	0.81	1.04
Swiftness	0.11	0.08	2.09	1.12	0.96	1.31
Constant	-0.50	0.83	0.36	0.61		
Model 3						
Age	-0.05	0.02	11.48	**0.95****	0.92	0.98
Sex(male)	0.27	0.40	0.46	1.31	0.60	2.85
Awareness(yes)	-0.66	0.44	2.26	0.52	0.22	1.22
Certainty	-0.05	0.08	0.37	0.95	0.81	1.12
Severity	-0.01	0.07	0.01	0.99	0.86	1.16
Swiftness	0.05	0.08	0.35	1.05	0.81	1.24
Punishment Avoidance	0.38	0.07	32.32	**1.46****	1.28	1.66
Vicarious Punishment(yes)	-0.55	0.42	1.70	0.58	0.26	1.32
Vicarious Punishment Avoidance	0.18	0.07	7.88	**1.20***	1.06	1.36
Constant	-2.64	1.01	6.85	**0.07***		

Note: $^{*}p < .05$, $^{**}p < .001$.

Key subgroup analyses

The fifth and final study aim was to determine the differences between key subgroups (male and females as well those aged 17-29 or over 30 years) for intentions to drug drive and perceptions of legal sanctions.

A number of significant differences were found between males and females for the main study variables (see Table 9). Males reported higher awareness levels of the roadside oral fluid screening operations ($\chi 2(1) = 6.98$, $p < .05$), greater overall illicit drug use levels (U = 69276.00, $p < .01$), and greater experiences of punishment avoidance (U = 75610.50, $p < .05$) than females. In contrast, females had significantly higher perceptions of certainty of apprehension than males (U = 72208.00, $p < .05$). No other comparisons were significantly different between males and females.

Table 9. Sex comparisons for the main study variables

	Descriptive		Statistical	Scale
Variable	Male	Female	Significance	range
Intentions to drug drive in the future[a]	M = 2.17	M = 0.61	U = 78592.50	0-180
Awareness	Yes = 66.08%	Yes = 57.00%	**$\chi^2(1) = 6.98^{*}$**	-
Overall drug use	M = 4.07	M =3.57	**$U = 69276.00^{**}$**	3-21
Classical Deterrence Theory				
Certainty	M = 4.98	M = 5.32	**$U = 72208.00^{*}$**	1-10
Severity	M = 6.84	M = 6.47	U = 75178.00	1-10
Swiftness	M = 5.84	M = 5.59	U = 75367.50	1-10
Reconceptualised Deterrence Theory				
Punishment Avoidance	M = 1.94	M = 1.68	**$U = 75610.50^{*}$**	1-10
Vicarious Punishment	Yes = 20.00%	Yes = 22.56%	$\chi^2(1) = 0.78$	-
Vicarious Punishment Avoidance	M = 2.86	M = 2.64	U = 74634.50	1-10

Note: $^{*}p < .05$, $^{**}p < .001$; U denotes the Mann-Whitney statistic, χ^2 denotes chi-squared statistic.

[a] Continuous variable.

Comparison between the two age cohorts (17-29 years and ≥30 years) found significant differences on a number of variables (see Table 10). The younger age group reported significantly greater intention to drug drive in the future (U = 75409.00, p < .01), lower awareness levels ($\chi^2(1) = 4.25$, p < .05), and greater levels of overall illicit drug use (U = 67326.00, p < .01) than the older age group. Interestingly, this same cohort also reported significantly higher perceptions of certainty of apprehension (U = 63522.00, p < .01), severity of sanctions (U = 56442.50, p < .01), and swiftness of sanctions (U = 63742.50, p < .01) than the older cohort. Last, the younger age group reported greater experiences with vicarious punishment ($\chi^2(1) = 42.92$, p < .01) and vicarious punishment avoidance (U = 62603.50, p < .01).

Table 10. Age comparisons for future intentions of drug driving and perceptions of legal sanctions

	Descriptive		Statistical	Scale
Variable	17-29 years	≥30 years	Significance	range
Intentions to drug drive in the future[a]	*M* = 2.31	*M* = 0.47	**U = 75409.00****	0-180
Awareness	Yes = 58.00%	Yes = 65.09%	**$\chi^2(1) = 4.25^{*}$**	-
Overall drug use	*M* = 4.17	*M* = 3.47	**U = 67326.00****	3-21
Classical Deterrence Theory				
Certainty	*M* = 5.58	*M* = 4.72	**U = 63522.00****	1-10
Severity	*M* = 7.37	*M* = 5.94	**U = 56442.50****	1-10
Swiftness	*M* = 6.18	*M* = 5.25	**U = 63742.50****	1-10
Reconceptualised Deterrence Theory				
Punishment Avoidance	*M* = 1.78	*M* = 1.84	U = 79492.00	1-10
Vicarious Punishment	Yes = 30.75%	Yes = 11.78%	**$\chi^2(1) = 42.92^{**}$**	-
Vicarious Punishment Avoidance	*M* = 3.19	*M* = 2.31	**U = 62603.50****	1-10

Note: $^{*}p$ < .05, $^{**}p$ < .001; U denotes the Mann-Whitney statistic, χ^2 denotes chi-squared statistic.

[a] Continuous variable.

DISCUSSION

The purpose of the current study was to explore the initial impact of legislation in the ACT that allows police to conduct roadside oral fluid drug testing. The results show that even with this relatively new deterrent, a number of individuals will still continue to drug drive.

Drug use and drug driving behaviours

The first aim of the current study was to examine participant's self-reported illicit drug use. It was found that approximately one-third of participants reported having used one of the three listed illicit drugs (i.e., cannabis, meth/amphetamine, or ecstasy) previously. This finding is consistent with previous studies examining prevalence rates of illicit drugs use (Australian Institute of Health and Welfare, 2011; Freeman, Watling, Davey, & Palk, 2010). Consistent with previous work (e.g., Australian Institute of Health and Welfare, 2011) cannabis was the most prevalent drug used, followed by ecstasy and meth/amphetamine. This prevalence data is different to the detection data from the Queensland drug driving program where methamphetamine was more prevalent than cannabis. The greater detection rates reported in the Davey et al. (2014) might not be reflective of self-reported usage, but rather the ability to better detect methamphetamine as compared to THC via saliva at the roadside. Issues surrounding the sensitivity of the cut off threshold for the roadside screening devices to detect cannabis have been noted by previously work (Drummer et al., 2007) and might result in some driving who are under the influence of cannabis avoiding apprehension. When the frequency of drug use was examined as a function of age and sex, males younger than 30 years of age reported greater frequency of drug use. This is consistent with a number of previous studies (Armstrong, Wills, & Watson, 2005; Australian Institute of Health and Welfare, 2011; Davey et al., 2014; Riley & Hayward, 2004).

A total of 10.74% of participants reported driving within 24 hours of consuming an illicit substance. This rate is lower than previous studies; however, it is likely due to the specific time range employed by the current study of "within 24 hours of consuming an illicit substance". Previous studies have used differing time ranges and found higher percentages. For example,

Watling et al. (2010) reported a rate of 19.4% among Queensland drivers when asked if they had driven in the last six months under the influence of illicit drugs, whereas Davey, Davey, et al. (2005) reported a rate of 25.0% among young drivers having driven within six hours of an illicit drug in the past 12 month period. The prevalence rates from the Davey, Davey, and Obst (2005) study are somewhat higher; however, this might be due to the population sampled (i.e., young university students) or some form of selection bias. A smaller proportion of participants (3.47%) reported driving within four hours of an illicit substance. This is concerning as cannabis use has been reported to cause acute impairment of driving skills up to four hours in duration (Battistella et al., 2013; Grotenhermen et al., 2007). These findings suggest that for some individuals, drug driving might be entrenched behaviours.

Perceptions of sanctions

An additional aim of the current study was to examine the perceived deterrent impact of roadside oral fluid screening operations in the ACT. It was found that a substantial proportion of participants (71.54%) did not perceive the certainty of apprehension as high. Perceptions of the certainty of apprehension are perhaps the most critical aspect for the effectiveness of deterrence (Homel, 1988; Nagin & Pogarsky, 2001; Zimring & Hawkins, 1973). The reported low perception of certainty of apprehension could be expected given the relative recency of operations in the ACT. This is a likely explanation as 35.21% of participants reported they were unaware of the ACT's roadside oral fluid screening operations. It is possible that residents of the ACT are unaware (or ambivalent) of the penalties if apprehended for drug driving in the ACT. This finding is less surprising as the majority of participants had not been apprehended for a drug driving offence and as such had no experience with the legal sanctions and processes.

Factors predicting future drug driving

The demographic, awareness, classical deterrence and reconceptualised deterrence theory variables were examined for their predictive utility of intentions to drug drive in the future. The demographic variables of age and sex and the awareness variable were entered at

the first step, with the age and awareness variables being significant predictors of intentions to drug drive in the future. Specifically, younger individuals and those who were aware of roadside saliva based testing operations were less likely to drug drive. A number of studies have previously found that younger individuals are more likely to drug drive (Akram & Forsyth, 2000; Watling et al., 2010). The finding that being aware roadside saliva based testing was associated with a lower likelihood of drug driving is encouraging for road safety. Education based campaigns are potentially a critical aspect of any road safety campaign (Elvik & Vaa, 2004) and being aware of roadside saliva based testing operations leads to higher perceptions of certainty of apprehension (Watling et al., 2014). While the specific relationship between awareness of testing and effectiveness of deterrence still needs to be thoroughly examined, a high level of publicity of the legal sanctions and associated penalties are important for the effectiveness of deterrence.

The classical deterrence theory variables were at the second step of the logistic regression model. The addition of these variables did not significantly increase the predictive power of the model and subsequently, none of the classical deterrence theory variables were predictive of intentions to drug drive in the future. While these results might be cause for concern, especially as deterrence theory is used as the conceptual framework underpinning traffic enforcement, there are several reasons to remain optimistic. First and foremost, the current ACT operations are relative new when compared to successful drink driving campaigns and as noted earlier, the participants' awareness levels of the drug driving testing campaign needs to be improved. Prior to the initiation of roadside saliva based testing operations, perceptions of certainty of apprehension were quite low (Darke et al., 2004). Considering these two factors together, it will possibly take some time (and effort) before perceptions of certainty of apprehension will impact on an individual's decision to drug drive. Therefore, the current findings would suggest that an expansion of the roadside saliva based testing campaign is required.

It will be theoretically relevant to quantify deterrence perceptual trends, awareness, and drug driving prevalence rates with the growth of the ACT roadside saliva based testing campaign. Throughout the period of 2007 to 2010 a number of Australian states implemented

roadside saliva based drug testing (see Table 1, in the introduction). It is of note that the proportions of individuals reporting drug driving significantly decreased from 20.9% in 2007 to 18.00% in 2010 (Australian Institute of Health and Welfare, 2011). These data suggest that recurring studies are needed to more closely monitor the effects from roadside saliva based testing operations in terms of the number of roadside tests conducted and media exposure.

In terms of the reconceptualised deterrence theory variables that were added at the third step of the model, only the punishment avoidance and vicarious punishment avoidance variables were predictive of intentions to drug drive in the future. The importance of these factors for the facilitation of committing offending behaviours have been noted in previous work (e.g., Freeman & Watson, 2006; Paternoster & Piquero, 1995; Piquero & Paternoster, 1998; Piquero & Pogarsky, 2002; Sitren & Applegate, 2007; Watling et al., 2010). The experiences of punishment were extremely low and the experiences of vicarious punishment were moderate. Specifically, only one participant reported having been convicted of a drug driving offence and 21.28% of participants reported knowing of someone who had experienced some form of punishment. It is possible that low perceptions of certainty as well as drivers own experiences of punishment avoidance possibly negated the effect of any vicarious punishment. This is potentially reflected in the participant's low perceptions regarding the effectiveness of roadside saliva based operations for apprehending drug drivers.

While the demographic and deterrence factors accounted for a significant portion of the total variance for intentions to drug drive in the future, other factors could contribute to drug driving behaviours. As highlighted by Watling and Freeman (2011) a range of criminogenic factors such as defiance constructs (i.e., experiencing feelings of shame and believing in the legitimacy of sanctioning authority) and deviance constructs (i.e., moral attachment to the norm and having a criminal conviction) are associated with drug driving intentions. It is arguable that the role of defiance is particularly pertinent with the facilitation of drug driving behaviours as research suggests that many drug drivers believe they can safely drive (or minimise the risk) after having used an illicit drug (Darke et al., 2004; Duff & Rowland, 2006). Consequently, such beliefs could possibly lead to defiant perceptions pertaining to the zero-tolerance stance for drug driving. These reports suggest that alternate strategies are need for

some social groups (i.e., regular/long time drug users); rather than a reliance on deterrence based legal sanctions alone, particularly when substance abuse been shown to impede the effectiveness of legal sanctions (Yu, Evans, & Clark, 2006).

Subgroup analyses

A number of differences were found between the subgroups for a number of key variables. In terms of the age comparison between those aged 17-29 and those older than 30 years, a complex picture emerged from the analyses. That is, younger individuals reported greater intentions to drug drive than the older individuals. However, younger individuals also reported significantly higher perceptions of certainty of apprehension, severity, and swiftness of sanctions, and were less aware of roadside saliva based operations in the ACT. Typically, higher perceptions of certainty of apprehension and/or severity of sanctions have been reported to lead to reductions in the likelihood of drug driving (Freeman et al., 2010; C. Jones, Donnelly, Swift, & Weatherburn, 2006) and not being aware of drug driving operations are associated with lower perceptions of certainty (Watling et al., 2014). As such, the reasons for younger individuals' greater intentions to drug drive may fall outside the realm of classical deterrence theory.

It is possible that two key variables could explain why younger drivers report greater intention to drug driving when compared to older drivers. First, younger individuals were found to report higher vicarious experiences of punishment avoidance. That is, younger persons knew of more people engaging in drug driving behaviour who were also escaping detection. This seems at odds with previous research that has examined the effects of personal and vicarious experiences for offending behaviours. Specifically, personal experiences have more salience than vicarious experiences for offending behaviours (Jensen et al., 1978; Paternoster & Piquero, 1995). However, it has been suggested by Watling et al. (2010) that experiences of vicarious punishment might be a more influential factor for drug driving behaviours than personal experience as fellow illicit drug users tend to be a model for behavioural norms (van Dijk, 2008). Additionally, the salience from vicarious experiences may be more relevant for younger

individuals (Aseltine, 1995; Piquero & Pogarsky, 2002) and could have contributed to the obtained results.

The second factor that could explain younger individuals' reporting greater intentions to drug drive could be due to greater levels of illicit drug use. Greater levels of illicit drug use have been previously shown to be associated with greater intentions to drug drive (Duff & Rowland, 2006; Watling & Freeman, 2011). Similarly, findings have been noted with drink driving behaviours as greater alcohol consumption levels have been found to be the strongest factor for future drink driving episodes (Yu, 2000). Issues of substance dependence have been shown to erode the effects of legal sanctions (Yu et al., 2006).

Fewer differences were found between males and females than was expected. That is, a considerable amount of research suggests that drug driving is more prevalent amongst males than females (Davey, Davey, et al., 2005; Drummer et al., 2003, 2004b; A. W. Jones, 2007; Longo et al., 2000; Neale, 2004; Watling, Freeman, Palk, & Davey, 2011). Yet, the current findings found no significant differences existed between males and females intentions to drug drive in the future. Moreover, males reported significantly higher levels of drug usage than females, with higher levels of drug use being shown to be a strong factor for future drug driving (Duff & Rowland, 2006; Watling & Freeman, 2011). Another inconsistent result with previous findings was females' perceptions of certainty of apprehension were significantly higher than the males. Considerable research has been conducted examining the effectiveness of legal sanctions between males and females with several studies reporting that deterrence theory has been equally applicable to both sexes (e.g., Akers, 1998; Carmichael, Langton, Pendell, Reitzel, & Piquero, 2005; Smith & Paternoster, 1987). As such, given the paucity of deterrence based research examining drug driving that specifically focuses on sex differences, future research is needed to clarify these findings.

Strengthen the effectiveness of specific and general deterrence

The obtained findings that the facets of classical deterrence theory were not associated with future intentions to drug drive suggest that the general and specific deterrence effects need to be boosted for roadside saliva based operations within the ACT. Classical deterrence

theory variables can be manipulated by traffic authorities and the police in order to increase perceptions of the effectiveness of legal sanctions to apprehend drug drivers. First, increasing perceptions of certainty of apprehension is a critical aspect for the effectiveness of deterrence (Homel, 1988; C. Jones et al., 2006). Previous work suggests that increasing perceptions of the certainty of apprehension would influence illicit drug users into not drug driving (C. Jones et al., 2006). One method by which perceptions of certainty of apprehension can be increased would be conducting special operations or "blitzes" that involve highly publicised and highly visible enforcement operations. An additional benefit of such "blitzes" would be an increased awareness level of roadside saliva based operations. The severity of sanctions is another factor that could be manipulated by authorities. However, increasing the severity of penalties is not likely to have a deterrent effect unless an increase of certainty of apprehension occurs also (Homel, 1988; Nichols & Ross, 1988).

It has been shown that penalties are not applied within a social vacuum; that is, a number of factors serve to influence illegal behaviour/s (Freeman et al., 2010; Homel, 1988; Williams & Hawkins, 1986). A relatively understudied factor for reducing drug driving behaviour is the effect of social sanctions. Social sanctions can be described as social stigma or peer disapproval as a result from having formal legal sanctions applied (Homel, 1988). Two investigations have found that social sanctions arising from a drug driving apprehension were associated with a lower likelihood of future drug driving behaviour (Armstrong et al., 2005; Freeman et al., 2010).

While social sanctions have the potential to reduce instances of drug driving, it must be noted that in some social groups, drug driving is an accepted and condoned behaviour. For instance, drug driving is strongly aligned with many social interactions (Davey, Williams, & Davies, 2001). For habitual or regular illicit drug users, drugs are often obtained while under the influence of an illicit substance (Aitken, Kerger, & Crofts, 2000; Davey, Davies, French, Williams, & Lang, 2005). Moreover, many drug drivers report having previously been a passenger of a drug driver (Darke et al., 2004; Freeman et al., 2010). Fellow illicit drug users provide a normative frame of reference sustain and support aberrant behaviours (van Dijk, 2008); and substance abuse has been shown to reduce the effectiveness of legal sanctions (Yu et al., 2006).

As such, while social sanctions could play an important role towards reducing incidences of drug driving behaviour, further understanding of the effects this informal sanction can having for reducing incidence of drug driving are required.

Future Research

Future research could seek to examine for changes in perceptions of certainty of apprehension, severity and swiftness of sanctions over time with the development of the ACT's random roadside oral fluid screening program. Future studies will need to be mindful of expansions of the program and increased media awareness which could affect perceptions of certainty of apprehension. Another avenue for future research could be examining the potential effects of social sanctions for drug driving. Currently, most studies that have examined the effects of social sanctions are limited to studies of drink driving and there is scant evidence for the effects of social sanctions for drug driving. Therefore, enhancing our understanding of factors that can potentially dissuade individuals to drug drive is worthwhile. Last, given the paucity of deterrence based research examining drug driving that specifically focuses on sex differences, future research is needed. Specifically, the current results suggest that there are few significant differences between the two sexes, however, previous work suggests otherwise. As such, thorough examinations are needed to clarify these incongruities.

Limitations and Benchmarking to the National Drug Strategy Household Survey

A number of limitations should be discussed regarding the current research. It is again important to note that due to the use of a stratified sample, the results obtained for the total sample are not necessarily representative of the general population of ACT. The sample used for this study consisted of equal number of participants aged 17-29 as those aged ≥30. For this reason, the sample contains an over-representation of people aged 17-29, and if compared to the general population, the total sample findings will be biased towards this age group. In the present sample younger individuals had lower awareness of the use of roadside oral fluid testing, higher intentions to drive after using illicit drugs, higher perceptions of all elements of

classical deterrence theory, and greater experience of vicarious punishment and vicarious punishment avoidance. Thus, the population averages for the ACT may be lower than the total sample averages in this study.

Additionally, while the use of cold calling through a random number generator should have ensured a random sample of the population, in terms of attitudes and perspectives, the study only achieved a 58% response rate. Though such a response rate is common in social research, it is possible that individuals with different experiences of illicit drug use and drug driving may have been more or less likely to participate in the research. Further, despite being a critical data collection method, the use of self report surveys does expose the current research tpo potential response biases.

Due to the potential for bias in the data, it is beneficial to compare the levels of illicit drug use and drug driving found in the current research with that of the 2010 National Drug Strategy Household Survey (Australian Institute of Health and Welfare, 2011). According to the reports from this national survey, the proportions of individuals who, in the past 12 months, had used cannabis (10.30%), ecstasy (MDMA; 3.00%), and meth/amphetamine (2.1%) very closely match the present research (10.37%, 2.87%, and 1.98% respectively). Further, in the national household survey, approximately 56% of those who had used an illicit dug in the past year had also used one in the past month, and 64% of those who had used an illicit drug in the past month had done so in the past week. In the present research, similar rates were found for comparing use in the past 12 months with that in the past month (45% for MDMA to 56% for MA), but lower rates for comparing use in the past month with that in the past week (30% for MDMA to 56% for THC). This may indicate that the present sample had a lower rate of regular users, or potentially that participants were more willing to disclose use in the past month than in the past week. However, it should be noted that the national survey used a paper survey which was left with the participant to be collected at a later date. In this instance, the use of illicit drugs may have reminded participants about the survey leading to subsequent completion. Conversely, in the present study the use of random number dialling reduced the ability for recent illicit drug use patterns to influence the time at which the survey was completed.

Importantly there were relatively similar rates of drug driving identified in the national household survey as in the present study. In the national survey, 18% of those who had used an illicit drug in the past year reported having driving a vehicle when under the influence of illicit drugs in the past year. This represents 2.64% of the total sample population. The highest rate of driving under the influence of illicit drugs in the present research was for THC, with 3.47% of the current study sample (approximately 33% of those who have used THC in the past year) reporting this behaviour. Whilst the proportions of participants driving within four hours of using MDMA and MA were lower, these figures represented approximately 30% and 25% of those who had used these substances in the past year respectively. The inclusion of a larger age group and individuals under the age of gaining a driver's licence may have reduced the proportions identified by the national household survey relative to the present data. Taken together, it can be seen that the present sample had a similar prevalence of illicit drugs use and drug driving to the national household survey.

Conclusion

The current study sought to explore the initial impact of the ACT's implementation of roadside oral fluid drug screening program. The results suggest that a number of individuals reported intentions to drug drive in the future. The classical deterrence theory variables of certainty of apprehension, severity and swiftness of sanctions were not predictive of intentions to drug drive in the future. In contrast, having avoided apprehension and having known of others that have avoided apprehension were predictive of intentions to drug drive in the future. Increasing perceptions of the certainty of apprehension, increased testing frequency, and increased awareness of the oral fluid drug screening program could potentially lead to reductions of drug driving and result in safer road environment for all ACT community members.

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APPENDIX A

Information Sheet and Drug Driving Questionnaire

Drug Driving Research Study

If you have questions you would like to ask about this research, please contact:

Dr Kerry Armstrong
Centre for Accident Research and Road Safety – Queensland (CARRS-Q)
Telephone: (07) 3138 8418

What is this study about?

This study aims to investigate whether the drug driving testing legislation and enforcement techniques introduced in the ACT from May 2011 influence motorists': (a) perceptions of being detected (b) corresponding drug driving behaviours, and (c) overall drug use behaviours. This will provide valuable information regarding the impact of the roadside detection methods and legislation as well as informing the best possible methods to introduce drug driving countermeasures.

We want to find out:

- If you have ever consumed any form of illicit substance
- If you have ever driven a motor vehicle after consuming any illicit substance
- Whether you are aware of roadside oral fluid drug testing
- If the testing techniques and legislation has influenced your possible drug driving behaviour
- If any other factors influence your possible illicit drug driving behaviour.

If you decide you don't want to answer some of the questions that is OK. No one will be able to tell which answers are yours – all the answers will be coded using numbers. Therefore, all information you provide is strictly confidential and anonymous.

If you have any problems with the questions we are asking, you can contact one of the people named at the top of this page.

QUT is committed to researcher integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Officer on 3138 2340 or ethicscontact@qut.edu.au. The Research Ethics Officer is not connected with the research project and can facilitate a resolution to your concern in an impartial manner.

Hello my name is […]. The Queensland University of Technology has commissioned I-View to conduct a survey regarding the drug driving testing legislation and enforcement techniques introduced in the ACT from May 2011. We are interested in knowing whether you are:

- Aware of roadside oral fluid drug testing
- If the testing techniques and legislation has influenced your possible drug driving behaviour
- If any other factors influence your possible illicit drug driving behaviour.

We are hoping you or someone in your household will be available to take part. It takes about 15 minutes and is completely confidential. Could I speak to the person in your household who is aged 17 years and older and has a drivers licence?

DRUG DRIVING QUESTIONNAIRE

The first few questions are about you. The main purpose of these questions is to make sure that we are talking to a wide variety of people. Therefore your honesty would be greatly appreciated.

S1 Approximately, how many hours per week would you drive a motor vehicle, including both private and work use? On average, would you say you drive a motor vehicle.....

1. less than 1 hour per week (average= 8 mins or less/day) **TERMINATE**
2. between 1 and 4 hours/wk (average=9 to 34 mins/day)
3. between 4 and 8 hours/wk (average=34 to 68 mins/day)
4. over 8 hours/wk (average=68mins/day)

S2 Record gender (do not read out) (*check quotas)*

1. male
2. female

S3. Just so that we can make sure that we are speaking to a cross section of the community, would you mind telling me how old you are? (*check quotas)*

S3a (*ask if refused age)* Which of the following age groups do you fall into?

1 under 17 (terminate)
2. 17-29
3. 30-39
4. 40-49
5. 50-64
6. 65-79
7. 80+
8. Refused (*terminate)*

If R under 17, ask to speak to person 17 or over

S4 Can I confirm your post code? *(confirm it is the ACT region – check quotas*

3. Do you have a job at the moment?
Yes……..1
No……2
Refused (DNRO)……98
What is that job? _____

_____

4. a. Have you ever been convicted of a criminal offence?
Yes……..1
No……2
Refused (DNRO)……98

_____

b. If yes, what for? _____
Refused (DNRO)……98
_____

5a. Have you ever used an illicit drug (such as cannabis, meth/amphetamines, or ecstasy) and driven a vehicle within a 24hr period?
1. Yes
2. No → go to Q8
3. Refused → go to Q8

5. How old were you the first time you drove after using an illicit drug?
(Record) _____yrs

6. **Since May 2011** how often have you driven after using an illicit drug ?

Never……1
Once or twice……2
3 to 5 times……3
6-10 times……4
More than 10 times……..5

7. Have you ever been convicted of a drug driving offence?

Never……1
Once ……2
Twice……3
More than twice……4
Refused (DNRO) ……98

8. Have you ever been convicted of a drink driving offence?

Never……1
Once ……2
Twice……3 More than twice……..4
Refused (DNRO) ……98

9. Since May 2011 how often have you been a passenger when you thought the driver had been using illicit drugs before driving?

Never……1
Once or twice……2
3-5 times……3
6-10 times……4
More than 10 times……5

10. Which (if any) of the following drugs do you think you can consume and still drive safely? (Multiple responses allowed)

Cannabis……1
Meth/Amphetamines……2
Ecstasy……3
Programming note: Response codes Yes, No, DK either set up as a grid or a loop question

11. Are you aware that the ACT introduced roadside oral fluid drug testing in May 2011

Yes……1
Not sure……2
No……..3

12. How effective do you think roadside oral fluid drug testing is in detecting divers who have recently used illicit drugs?

Extremely ineffective……1
Ineffective……2
Unsure……3
Effective……4
Extremely effective……..5

DRUG DRIVING QUESTIONNAIRE

13. How long after using **cannabis** do you think you will have to wait before it won't be detected by roadside oral fluid drug testing methods?

Straight away……1
1-2 hrs……2
2-4 hrs……3
6-10 hrs……4
24 hrs……5
More than 24 hrs……6
Don't know……7

14. How long after using **meth/amphetamines** do you think you will have to wait before it won't be detected by roadside oral fluid drug testing methods?

Straight away……1
1-2 hrs……2
2-4 hrs……3
6-10 hrs……4
24 hrs……5
More than 24 hrs……6
Don't know……7

15. How long after using **ecstasy** do you think you will have to wait before it won't be detected by roadside oral fluid drug testing methods?

Straight away……1
1-2 hrs……2
2-4 hrs……3
6-10 hrs……4
24 hrs……5
More than 24 hrs……6
Don't know……7

16. What do you think the penalty will be if you were to be convicted of driving after using an illicit drug? I will read them aloud to you first and you pick the one that is most likely. (Single Response only)

Fine only……1
Licence loss only……2
Fine and licence loss ……3
Probation……4
Drug counselling……5
All of the above……6

17. Have the testing methods and legislation introduced since May 2011 reduced the likelihood that you will drive after using illicit drugs?

Very unlikely……1
Unlikely……2
Unsure……3
Likely……4
Very likely……5

18. Do you think the testing methods and legislation introduced since May 2011 have reduced the likelihood that other motorists will drive after using illict drugs?

Very unlikely……1
Unlikely……2
Unsure……3
Likely……4
Very likely……5

19. Please circle how often you drive:

Daily……1
3-5 times a week……2
Once a week……3
2-3 times a month……4
Once a month……5

The following questions concern recent illicit drug use

20. **When have you** most recently **used** marijuana/cannabis?

Within 4 hours	Within the last 24 hours	Within the last week	Within the last month	Within the last year	More than a year ago	Have never used

21. **When have you** most recently **used** meth/amphetamine **type substances, such as speed, oil, base, crystal**?

Within 4 hours	Within the last 24 hours	Within the last week	Within the last month	Within the last year	More than a year ago	Have never used

22. **When have you** most recently **used ecstasy**?

Within 4 hours	Within the last 24 hours	Within the last week	Within the last month	Within the last year	More than a year ago	Have never used

23. **Within the last year**, how often have you operated any type of vehicle (including a motorcycle) **within 4 hours** of using **marijuana/cannabis**?

Every day	More than once a week	About once a week	11-20 times	3-10 times	Once or twice	Never

24. **Within the last year**, how often have you operated any type of vehicle (including a motorcycle) **within 4 hours** of using **meth/amphetamine** type substances, such as speed, oil, base, crystal?

Every day	More than once a week	About once a week	11-20 times	3-10 times	Once or twice	Never

25. **Within the last year**, how often have you operated any type of vehicle (including a motorcycle) **within 4 hours** of using **ecstasy**?

Every day	More than once a week	About once a week	11-20 times	3-10 times	Once or twice	Never

DRUG DRIVING QUESTIONNAIRE

Now I would like to ask you some questions about your **current feelings** of drug driving. Below is a list of statements. The scales range from 1 = "Strongly Disagree" to 10 = "Strongly Agree".

	Strongly Disagree				**Unsure**					**Strongly Agree**
1. The chances of getting caught for driving after using illicit drugs are high	1	2	3	4	5	6	7	8	9	10
2. If I was to drive after using illicit drugs, I would be concerned that I might lose my friends' respect	1	2	3	4	5	6	7	8	9	10
3. I feel guilty after using illicit drugs then driving	1	2	3	4	5	6	7	8	9	10
4. If I was to drive after using illicit drugs, I would worry that I might get injured or hurt	1	2	3	4	5	6	7	8	9	10
5. I would worry that I might get caught if I was to use illicit drugs then drive	1	2	3	4	5	6	7	8	9	10
6. I would be ashamed if my friends found out that I drove after using illicit drugs	1	2	3	4	5	6	7	8	9	10
7. I would feel stupid after using illicit drugs and then driving	1	2	3	4	5	6	7	8	9	10
8. I'm afraid I might damage my car when driving after using illicit drugs	1	2	3	4	5	6	7	8	9	10
9. I think that driving after using illicit drugs is a serious risk to my health	1	2	3	4	5	6	7	8	9	10
10. Out of the next 100 people who drive after using illicit drugs, how many do you think will be caught?	Answer:_____									

In this section I would like to ask you some questions about the **penalties** for drug driving. The scales range from 1 = "Strongly Disagree" to 10 = "Strongly Agree".

	Strongly Disagree				**Unsure**					**Strongly Agree**
11. I regularly drive after using illicit drugs and don't get caught	1	2	3	4	5	6	7	8	9	10
12. I know what the punishment would be if I was caught driving after using illicit drugs	1	2	3	4	5	6	7	8	9	10
13. Sometimes I can't help but drive after using illicit drugs	1	2	3	4	5	6	7	8	9	10
14. I think the penalties for driving after using illicit drugs would be quite lenient	1	2	3	4	5	6	7	8	9	10
15. If I was caught for driving after using illicit drugs by the police it would take a long time before I went to court and was penalised	1	2	3	4	5	6	7	8	9	10
16. I don't think the government has the right to tell me that I cannot use illicit drugs before driving because I am the best judge of my driving abilities	1	2	3	4	5	6	7	8	9	10
17. The penalties I would receive if I was caught for driving after using illicit drugs would cause a considerable impact on my life	1	2	3	4	5	6	7	8	9	10
18. I personally believe that it is wrong to drive after using illicit drugs	1	2	3	4	5	6	7	8	9	10
19. I think people who go to court for driving after using illicit drugs usually can avoid receiving a serious penalty	1	2	3	4	5	6	7	8	9	10
20. My friends often take illicit drugs and drive without being caught	1	2	3	4	5	6	7	8	9	10
21. I think the legal system favours the rich and powerful over everyone else	1	2	3	4	5	6	7	8	9	10
22. The penalties I would receive if I were caught driving after using illicit drugs would be fair	1	2	3	4	5	6	7	8	9	10
23. I respect the law	1	2	3	4	5	6	7	8	9	10
24. I don't think people should be allowed to drive after using illicit drugs	1	2	3	4	5	6	7	8	9	10

25. I believe driving after using illicit drugs should be a traffic offence not a drug offence	1 2 3 4 5 6 7 8 9 10
26. How often do you think you will drive after using illicit drugs in the next **six months**?	_____
27. a. I know people who have been caught and lost their licence for driving after using illicit drugs	Yes.....1 No.....2 Refused (DNRO).....98 Dont Know (DNRO).....99
b. I know people who have been caught and fined for driving after using illicit drugs	Yes.....1 No.....2 Refused (DNRO).....98 Dont Know (DNRO).....99

Thank you most sincerely for helping with this study