Personality Characteristics and Attitudes of Young Traffic Offenders

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ABSTRACT

In Australia and other developed countries, young drivers are more likely to be involved in fatal and injurious crashes than older, more experienced drivers. The aim of the present study was to identify the characteristics and motivations of a group of younger drivers known to engage in risky driving. The characteristics of young drivers, aged 16 to 24 years, who were detected committing one or more traffic offences by police (*N*=336) were compared with a group of drivers in the same age group, university students (*N*=270). The offenders and students were administered a questionnaire that measured a wide variety of personality characteristics and driving-related attitudes. Driving records were also examined. The profile of characteristics for the offender group, a high-risk group, indicated that they were well-adjusted and generally did not differ greatly from the students. However, there were notable differences on some measures related to aggression. Young offenders reported higher levels of driving-related aggression than students, and young male offenders reported higher levels of driving to reduce tension than did young male students. In addition, offenders in general had less safety-oriented attitudes towards road safety issues than students. Female offenders also reported higher alcohol use than female students. These findings have implications for the tailoring of interventions to the specific motivations of young traffic offenders.

INTRODUCTION

In Australia and other developed countries, young drivers (aged 16 to 24 years) represent only a minor proportion of the licensed driving population, yet are substantially more likely to be involved in fatal and injurious crashes than older, more experienced drivers. For example, in South Australia from 1999 to 2002, young adults aged 16 to 24 years comprised around 14 per cent of licensed drivers, yet accounted for 24 per cent of all drivers killed and 30 per cent of drivers injured in a casualty crash (Transport Information Management Section, 2003).

In order to tailor interventions and public education to the motivations and needs of young drivers, we need to gain a better understanding of the characteristics defining young drivers at a higher risk in traffic. Previous research has found that a wide range of personality characteristics, motivations, driving-related attitudes and behaviours are related to increased levels of driving risk (e.g. Beirness, 1993). However, studies investigating the relationship between personality characteristics and the consequences of risky driving (i.e. crash involvement and traffic offences) have been criticised because they are not systematic (Williamson, 1999), are not validated in different populations, and exhibit methodological problems such as inadequate control for variation in exposure, small sample sizes and the use of inadequately standardised tests (Grey *et al.*, 1989).

The aim of the present study was to identify the characteristics and motivations of a group of young South Australian drivers known to be at high risk. Thus, the characteristics of a sizeable sample of young drivers who were caught by police committing one or more traffic offences were examined. We selected a group of young traffic offenders because research suggests that traffic offences are more closely related to variations among individuals than crashes; driving behaviour leading to detection for a traffic offence (e.g. drink driving) is considered more intentional and connected to the motivations of the driver (Burg, 1970; Harrington, 1972). In contrast, drivers generally do not try to be involved in a crash. Moreover, most research examining driving records has found traffic offences to be a better predictor of crash involvement than crashes among young drivers (e.g. Elliot *et al.*, 2001; Harrington, 1972).

The characteristics of the young traffic offenders were examined in relation to a comparison group of young South Australian drivers, university students. Note that the students represent a comparable group of young drivers on a provisional licence, but they cannot necessarily be considered as representative of the general young driver population in South Australia. To the best of our knowledge, this was the first study to examine the characteristics of young South Australian traffic offenders. Furthermore, this study was important because it investigated personality factors and attitudes in more depth than previous studies of young high-risk drivers.

The offenders and students were administered a questionnaire, originally developed by Donovan and Marlatt (1982), based on a wide variety of personality characteristics, hostility measures, and driving-related attitudes and behaviours known to be associated with high-risk drivers. Based on these measures, a profile of the offender group was developed relative to the student group. Driving histories, both self-reported and official records, were also examined to confirm that the offender group was a higher risk group in traffic than the student group. In order to determine if offenders continued to be a higher risk group than students, official driving records were followed for one year following administration of the questionnaire.

In light of the previous findings for high-risk drivers, the young traffic offenders were expected to have high scores, relative to the students, on sensation seeking (e.g. Beirness & Simpson, 1988; Renner & Anderle, 2000), measures of aggression and hostility (particularly overt hostility; Lajunen & Parker, 2001), driving-related aggression (e.g. Begg & Langley, 2004), competitive speed or driving in a competitive way (e.g. Deery *et al.*, 1998), and driving to reduce tension and frustration (e.g. Mayer & Treat, 1977). Offenders might also be expected to report a depressive state (Donovan *et al.*, 1986), and have some degree of personal or emotional maladjustment, although previous findings have been inconsistent (e.g. Lajunen, 2001; Mayer & Treat, 1977). Offenders would be expected to be less likely to hold road-safety-oriented attitudes than the students, be more likely to perceive risky behaviour as acceptable, perceive less risk in driving situations and be overconfident in their driving skills (e.g. DeJoy, 1992). With regard to driving behaviour, offenders would be expected to exhibit a riskier driving style than the students (e.g. Baxter *et al.*, 1990). According to Problem Behaviour Theory (Jessor, 1987), the offenders would also be expected to report higher levels of mild social deviance, alcohol consumption and risky behaviours other than risky driving (e.g. Beirness & Simpson, 1988; Wilson & Jonah, 1988). Finally, offenders were expected to have more subsequent crashes and traffic offences than the students.

METHOD

Participants

Participants comprising the 'offenders' group were recruited from among young drivers attending the Driver Intervention Program (DIP) run by the South Australian Department of Transport, Energy and Infrastructure. Any driver aged 25 years and under who has violated the conditions of their learner's permit or provisional driver's licence, resulting in licence disqualification[1], is required to attend the program. The majority of drivers attending the program reported committing speeding offences.

Drivers attending DIP were approached at DIP sessions conducted between October 2003 and January 2004, at all venues operating in metropolitan Adelaide. Program participants were invited to participate in the study at the beginning of the session. To ensure all participants had some unsupervised driving experience, only data from participants who had held a current South Australian provisional driver's licence were retained for analysis. The final sample of offenders consisted of 336 drivers (273 males, 63 females) aged 16 to 24 years (M=18.5, SD=1.2).

1 A driver whose learner's permit or provisional licence is disqualified may subsequently appeal against the penalty of disqualification. However, even if the appeal is successful, they are still required to attend DIP. Thus, not all offenders received the penalty of licence disqualification.

The comparison group consisted of 270 drivers (78 males, 192 females) holding a current South Australian provisional driver's licence, aged 17 to 21 years (M=18.1, SD=0.7). All were undergraduate psychology students enrolled at the University of Adelaide. They participated in the study to receive course credit. The university students represent a comparable group of young drivers on a provisional licence with varying levels of unsupervised driving experience. However, the student group cannot necessarily be considered as representative of the general young driver population in South Australia.

The majority of both the offender (74%) and student (61%) groups reported at least 12 months of unsupervised driving experience on a provisional licence.

Questionnaire

Participants completed an extensive self-report questionnaire consisting of 136 items. The questionnaire took approximately 10 to 15 minutes to complete. The first part of the questionnaire sought information on a number of general background variables (e.g. age, sex). The second section incorporated 72 true-false items measuring general personality traits: assertiveness (Rathus, 1973), depression (mood rather than clinical symptoms; Costello & Comrey, 1967), emotional adjustment (Howarth, 1976), sensation seeking (Thrill and Adventure Seeking and Disinhibition scales; Zuckerman, 1971) and five measures of the expression of hostility or aggression: assaultiveness, indirect hostility, verbal hostility, irritability, and resentment (Buss & Durkee, 1957). A further 20 true-false items measured a variety of driving-related attitudes and behaviours: driving aggression (Parry, 1968), an attitude of competitive speed (Goldstein & Mosel, 1958), driving inhibition (cautious driving when upset or angry; Donovan & Marlatt, 1982), and the extent to which driving reduced tension (Mayer & Treat, 1977; Pelz & Schuman, 1971). In following sections, a measure of mild social deviance (West *et al.*, 1993), self-reported driving style or risky driving (Deery & Love, 1996), and eight separate items measuring specific driving attitudes were also incorporated, as was alcohol consumption, which is another measure of high-risk behaviour.

Finally, participants were asked to self-report their driving history. Offences were defined as the number of fines for moving traffic offences. In addition, 62 per cent (n=208) of offenders and 70 per cent (n=188) of students gave consent to us to access their official driver records. These driver records were examined for crashes and traffic offences prior to, and 12 months following administration of the questionnaire.

Alpha coefficients indicated that the internal consistency of all scales was acceptable and exploratory factor analysis suggested that the majority of scales had a reasonable degree of internal coherence.

RESULTS

Consistent with expectations, analysis of self-reported and official prior driving records indicated that the students were less likely than the traffic offenders to be detected for traffic offences (F (1, 574) = 102.9, p<.001, F (1, 392) = 123.0, p<.001, respectively), even when the greater driving exposure (estimated number of kilometres driven) of offenders was taken into consideration (F (1, 533) = 79.5, p<.01)[2]. It appeared that the students were also less likely to be crash involved (F (1, 590) = 6.5, p<.05, F (1, 392) = 4.3, p<.05, respectively). However, when driving exposure was taken into account (self-reported crashes only), this effect disappeared.

Personality Characteristics and Attitudes

In order to develop a profile of the young traffic offenders, their mean scores on personality, hostility, driving-related attitude and road-safety-specific attitude measures were compared to student mean scores.

2 Meaningful statistical analyses, that account for driving exposure, could only be performed for self-reported data. This was due to the low number of crashes and traffic offences recorded in official records.

Table 2 shows the means, standard deviations and Cohen's *d* (a measure of effect size) of each measure for offenders and students by sex. In order to address the different sex compositions of the groups, two-way ANOVAs (group x sex) were performed to examine the main effects of group membership and sex, and any possible interactions between these two factors. The ANOVA results are presented in Table 3.

Analyses of the personality measures indicated offenders scored statistically significantly higher than students on assertiveness. While offenders were more emotionally well-adjusted than students, this effect was much stronger among males than females. Interestingly, offenders were less motivated to be socially deviant than students. Generally, the effect sizes indicate that these differences in personality functioning were in the small to medium range. There were no group differences for depression or motivation for sensation seeking.

With regard to hostility measures, offenders reported expressing hostility more physically than students, which was evident in higher scores for assaultiveness, while students expressed hostility by indirect means and were more irritable. However, effect sizes indicate that most group differences for hostility measures were small, apart from indirect hostility among males. Offenders and students did not differ on verbal hostility or resentment.

With respect to the driving-related measures, the greatest group difference was for driving-related aggression, with offenders reporting more driving aggression than students. Several significant interactions were found. For tension reduction, an interaction indicated that male offenders reported more driving to reduce tension or to increase personal efficacy than male students. The effect size of this difference was medium. For driving inhibition, an interaction indicated that female students reported higher levels than female offenders, while male offenders were more inhibited than male students. However, effect sizes indicate that these differences were small. Even though offenders were predominantly caught for speeding offences, they reported lower scores on competitive speed than students. There were no group differences for risky driving style.

Table 2: Summary of means and standard deviations for personality, hostility and driving-related attitude measures for males and females

	Males					Females				
	Offender (*N*=273)		Student (*N*=78)			Offender (*N*=63)		Student (*N*=192)		
Measure	Mean	*SD*	Mean	*SD*	*d* [a]	Mean	*SD*	Mean	*SD*	*d* [a]
Personality										
Assertiveness	7.9	1.3	7.0	1.4	0.7	8.0	1.3	7.4	1.4	0.4
Depression	10.2	1.8	10.6	2.4	-0.2	10.4	2.0	10.2	2.1	0.1
Emotional adjustment	7.3	1.4	8.0	1.8	-0.5	8.2	1.7	8.5	1.6	-0.2
Sensation seeking	27.1	3.2	27.3	3.5	-0.1	25.3	3.2	25.6	3.7	-0.1
Mild social deviance	12.4	3.1	13.8	3.4	-0.4	11.3	2.8	12.9	3.1	-0.5
Hostility and aggression										
Assaultiveness	13.8	2.1	13.1	2.1	0.3	12.4	2.1	11.8	2.1	0.3
Indirect hostility	7.6	1.2	8.2	1.5	-0.5	8.9	1.3	9.0	1.2	-0.1
Verbal hostility	9.5	1.5	9.6	1.5	-0.1	8.9	1.5	8.9	1.5	0.0
Irritability	11.3	1.9	11.8	2.0	-0.3	11.5	1.9	11.9	1.9	-0.2
Resentment	5.6	1.2	5.5	1.2	0.1	5.4	1.1	5.3	1.3	0.1
Driving-related										
Aggression	13.4	2.5	12.1	2.2	0.5	12.6	2.5	11.8	1.9	0.4
Competitive speed	7.6	1.7	8.0	1.4	-0.2	6.3	1.5	6.8	1.5	-0.3
Inhibition	4.4	1.1	4.1	1.3	0.3	4.5	1.2	4.8	1.2	-0.2
Tension reduction	3.3	0.8	2.8	0.9	0.6	3.0	0.9	2.9	0.9	0.1
Risky driving style	19.4	6.2	18.2	4.7	0.2	16.5	4.7	15.9	4.3	0.1
Attitudes [b]										
Speeding acceptable	2.8	1.3	3.0	1.2	-0.2	2.4	1.2	2.4	1.2	0.0
Drink driving acceptable	2.5	1.6	1.8	1.2	0.5	2.4	1.7	1.7	1.2	0.5
Low risk of dying in crash	1.9	1.2	1.5	0.9	0.4	1.7	1.2	1.2	0.6	0.6
Friends don't drive safely	3.2	1.2	2.9	1.1	0.3	2.8	1.2	2.4	1.2	0.3
Low likelihood of being caught	2.5	1.2	2.9	1.1	-0.3	2.2	1.3	2.5	1.1	-0.3
Lack of concern for hurting others	1.9	1.3	1.5	0.9	0.3	1.1	0.6	1.2	0.5	-0.2
Poor driving skill	2.0	1.1	2.0	1.0	0.0	2.1	1.1	2.0	0.8	0.1
Low safety motivation	2.1	1.1	1.9	0.9	0.2	2.5	1.1	1.9	0.9	0.6

Note: For each measure, higher scores indicate higher levels of the variable, except for emotional adjustment where higher scores indicate lower levels of adjustment.

[a] A positive value indicates that offenders have a higher mean than students; a negative value indicates that students have a higher mean than offenders.

[b] For each attitude measure, higher scores indicate non-safety orientated attitudes.

The attitudinal measures, specific to road safety, suggested that offenders were less likely than students to hold safety-oriented attitudes. Offenders reported a more favourable attitude towards drink driving, were less apprehensive about the risk of dying in a crash, were less likely to report friends driving safely, and were less motivated to drive safely than students. A significant interaction was evident for concern about hurting others in a crash, with male offenders being less concerned than female offenders. In comparison to the students, offenders perceived that there was a greater risk of detection for a traffic offence, most likely because they had been caught committing traffic offences. Of these differences in attitudes, attitude towards drink driving, the risk of dying in a crash, and safety motivation (for females only) were of a medium effect size; the remainder were small.

Table 3: Summary of ANOVA results (F-Ratios) for personality, hostility, driving-related and attitudinal measures

	Main effects		
Measure [a]	Group	Sex	Interaction
Personality			
Assertiveness	33.9**	3.6	1.9
Depression	0.4	0.6	1.8
Emotional adjustment	10.1**	17.2**	1.6
Sensation seeking	0.6	27.6**	<0.1
Mild social deviance	25.0**	11.4**	0.2
Hostility and aggression			
Assaultiveness	10.8**	40.6**	0.1
Indirect hostility	7.6**	69.6**	3.7
Verbal hostility	0.1	18.7**	0.2
Irritability	5.8*	0.7	0.1
Resentment	0.5	1.6	<0.1
Driving-related			
Aggression	23.3**	6.0*	1.3
Competitive speed	9.4**	72.5**	0.2
Inhibition	<0.1	12.9**	5.1*
Tension reduction	12.2**	3.0	3.9*
Risky driving style	3.2	26.5**	0.3
Attitudes			
Speeding acceptable	0.6	20.7**	0.3
Drink driving acceptable	26.6**	0.7	<0.1
Low risk of dying in crash	20.2**	7.6**	<0.1
Friends don't drive safely	10.4**	15.5**	0.5
Low likelihood of being caught	11.0**	7.7**	0.4
Lack of concern for hurting others	3.8	35.4**	4.2*
Poor driving skill	0.9	0.2	0.4
Low safety motivation	18.9**	2.5	3.8

[a] ANOVA N=606, df=1,602.
*p<.05, **p<.01

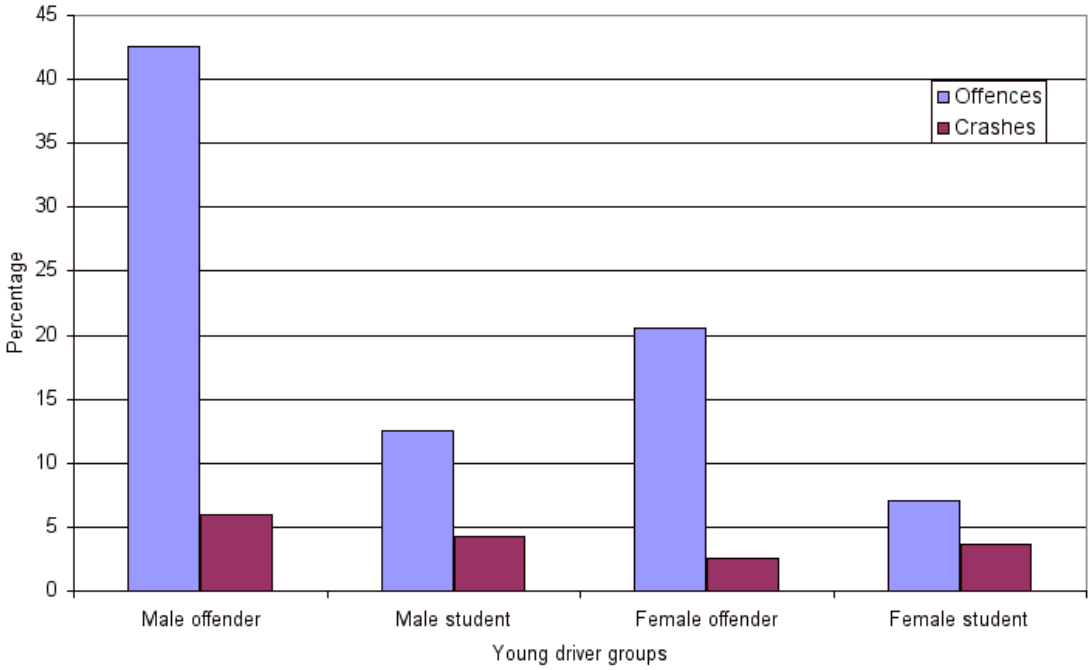
Although not a primary focus of the study, a number of sex differences were found. With respect to personality variables, males reported higher motivation for sensation seeking and mild social deviance, and were more emotionally well-adjusted than females. As for hostility measures, males expressed hostility more overtly with high levels of assaultiveness and verbal hostility, while females expressed more indirect hostility. Furthermore, males reported higher levels of driving-related aggression, competitive speed, had a riskier driving style, and were less inhibited when driving than females. For attitudinal measures, males had less safety-oriented attitudes than females; they had more favourable attitudes towards speeding, were less concerned about dying or hurting others in a crash, were less likely to report friends driving safely, and perceived there was a lower risk of detection when committing a traffic offence.

Participants were asked how many standard alcoholic drinks they would consume on a typical drinking occasion based on six response categories. Females' alcohol consumption was found to differ by group membership ($\chi^2(4)=16.9$, p=.002), with female offenders reporting the consumption of more drinks than female students. There was no group difference among males.

Driving Record Follow Up

The percentage of young drivers with at least one crash or traffic offence recorded in the 12 months after the initial survey can be seen in Figure 1 by group and sex. Of note, both male and female offenders continued to be detected for more traffic offences than the respective male and female student groups ($\chi^2(1)=14.7$, $p<.001$, $\chi^2(1)=6.0$, $p=.014$, respectively). Some young offenders had their provisional driver's licence disqualified during the 12-months following the initial survey. Consequently, not all offenders were driving during the entire follow-up period and, therefore, had less opportunity to be crash involved or commit traffic offences. In order to account for potentially reduced driving exposure, driver records were reanalysed excluding drivers disqualified for more than one month during the follow-up period ($n=53$). Similar results were found for males, but for females, the results were no longer statistically significant ($\chi^2(1)=9.8$, $p=.002$, $\chi^2(1)=3.1$, $p=.076$, respectively). Male offenders reported greater driving exposure than male students. However, the difference in driving exposure was not sufficient to explain the greater proportion of traffic offences among male offenders. There were no group differences for crashes, although there was a trend among male offenders for greater crash involvement than male students.

Figure 1: Percentage of young drivers with at least one crash or traffic offence in 12 months after initial survey by group and sex



DISCUSSION

Personality traits, by definition, are relatively stable over time and cannot be manipulated by modest psychological means over a short period. However, understanding the personality functioning of young offenders might assist in matching interventions to their needs. The analyses presented in this study have provided a profile of the personality characteristics, attitudes, and driving behaviours of young traffic offenders in relation to a comparison group of young drivers. The profile of characteristics for young offenders, a high-risk group, indicates that they were not a psychologically dysfunctional group but were well-adjusted and generally did not differ greatly from the students. The relatively normal personality functioning of the young offenders suggests that they feel they are in personal control of their lives.

The fact that the offenders were no more likely than students to report some of the characteristics measured was contrary to previous research.

Studies that have identified a number of these characteristics (i.e. sensation seeking, competitive speed, mild social deviance, risky driving style) in groups of traffic offenders (Deery & Love, 1996; Donovan *et al.*, 1985; Wilson, 1991) examined populations of more serious traffic offenders (i.e. convicted drink driving offenders, multiple offenders). It appears that there is a continuum of psychological well-being operating among traffic offenders, with the degree of personality dysfunction being related to the severity and type of traffic offences committed. In the present study, the young offenders were predominantly caught for speeding and may have committed only a single offence. Thus, the results apply to these specific types of offenders (i.e. not drink driving recidivists, multiple offenders etc.). Further research could examine the personality characteristics and attitudes of young traffic offenders by traffic offence type.

The finding that offenders were not psychologically deviant is consistent with an Austrian study that examined a similar type of young traffic offender (Renner & Anderle, 2000). Nonetheless, the group of young traffic offenders in the present study continued to be detected for traffic offences (i.e. some offenders became multiple offenders), and there was a trend among males for greater crash involvement than students. Therefore, there is justification for this high-risk group to continue to be targeted with interventions matched to their motivations and needs as identified in this study.

An important finding from this study was that there were group differences on some measures related to aggression. Offenders reported a tendency for overt hostility and higher levels of driving-related aggression than students, and male offenders reported higher levels of driving to reduce tension than did male students. The finding that young traffic offenders reported more aggressive behaviour in the driving context is consistent with previous research (e.g. Begg & Langley, 2004; Deery et al., 1998). Thus, offenders driving behaviour did not appear to be motivated by sensation seeking, or serve as a means of coping with personal or emotional problems. Rather, it appeared to function as a means of releasing tension, frustration and aggression in drivers with a predisposition for overt hostility.

It is important to note that personality traits (i.e. hostility) are resistant to change, but behavioural manifestations of these traits in the driving context (i.e. driving aggression, using driving to reduce tension) have been learned and are, therefore, more amenable to change. Indeed, there have been reports of successful psychological interventions to reduce driving anger, and subsequently driving aggression. For example, Deffenbacher and colleagues (Deffenbacher *et al.*, 2000) reported positive results for relaxation and cognitive restructuring interventions. However, as the difference in driving-related aggression between offenders and students in the present study was not large, such an intensive intervention may not be necessary for these young offenders. The offenders may benefit from group-discussion-based interventions in which effective strategies to manage hostile feelings and anger arising from the driving context are discussed, and in which drivers are encouraged to find means other than driving to express aggression.

The greatest contrasts between the two groups were found for some of the road-safety-related attitudinal measures. Consistent with previous research that has shown that non-safety-oriented attitudes are prevalent among high-risk young drivers (Beirness & Simpson, 1988; Ulleberg & Rundmo, 2002), offenders perceived risky behaviour (drink driving) as acceptable, did not perceive the risk or consequences of crashing as serious, and reported low motivation to alter their behaviour. Moreover, their social norms indicated unsafe driving was common among their peers, suggesting that offenders might be more likely to exhibit unsafe driving. Clearly, a change in offenders' attitudes towards road safety issues is needed. However, changing attitudes is not an easy task and some researchers (e.g. Burgess & Webley, 1999) suggest that attitude change is more likely to follow behaviour change rather than vice versa.

Consumption of high levels of alcohol has been considered part of a general risk-taking propensity related to the lifestyle of high-risk young drivers (Gregersen & Berg, 1994; Jonah, 1986) and has also been associated specifically with risky driving behaviour among young drivers (e.g. Horwood & Fergusson, 2000). In the present study, this association was only found for females. Therefore, interventions incorporating lifestyle issues such as excessive alcohol intake may be especially beneficial for females.

This study has a number of limitations. The student group is probably not representative of the general young driver population in South Australia. However, it does represent a group of young drivers on a comparable provisional licence, thus providing a match for licence conditions. Another limitation of the study is the self-reported nature of the data. Although validated scales were used whenever possible, many of the measures of individual differences were based on self-report, providing an opportunity for drivers to give a 'good' or socially desirable account of themselves. A further limitation of the study is the under-reporting of crashes and traffic offences by official driver records. Official records and self-reported driving history were checked against one another. It appeared that official driving records underestimated the number of crashes. This is most likely the result of crash reporting policies: only crashes reported to the police are listed in official records and young drivers are typically involved in many minor crash incidents that result in insufficient damage or injury for the police to be notified. It is also possible that self-reported driving records were under-estimated due to 'forgetfulness'. Nonetheless, the combination of both sources provided a more comprehensive picture of young drivers' crash and traffic offence records.

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