TITLE

Young and unlicensed: Risky driving before entering the licensing system

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ABSTRACT

Objective On-road driving before gaining a valid licence (pre-Licence driving) represents a risk for all road users. Pre-Licence driving among young people who obtained a Provisional licence within an enhanced graduated driver licensing program in Queensland, Australia, was investigated.

Methods Recently-licensed drivers (n = 1032) aged 17-19 years (M = 17.54) completed a survey exploring their driving experiences while on their Learners licence. Six months later, 355 of these drivers completed the same survey exploring their experiences on their Provisional (intermediate) licence.

Results Twelve percent of participants reported pre-Licence driving. Pre-Licence drivers reported significantly more risky driving as Learners and Provisional drivers.

Conclusions Pre-Licence drivers not only place themselves and other road users at risk at the time but also continue to do so through their subsequent risky driving. Pre-licence driving should be discouraged, and parents should be encouraged to monitor car use and the driving behaviour of their children.

KEYWORDS

Young Drivers, Novice Driver, Learner Licence, Provisional Licence, Pre-Licence Driving

INTRODUCTION

Road crash statistics consistently reveal that young drivers are overrepresented in both fatalities and injuries not only in Australia but in motorised countries around the world. Interventions such as graduated driver licensing (GDL) programs have been implemented to reduce the risks experienced by young novice drivers as they become more practised not only in the driving task itself but also the development of hazard recognition skills. It is noteworthy that evaluations suggest GDL are effective, the Learner period remains a safe period for the novice whilst the Provisional (intermediate) period is associated with the greatest risk to the developing driver (Williams et al. 2010).

Young novices who drive outside of the licensing system as unlicensed drivers are at greater risk of crash, injury and fatality (Lam 2003; Watson & Steinhardt 2006). Drivers who have never been licensed experience more than five times the risk of being involved in a serious crash than licensed drivers (Watson 2004) and nearly five times the risk of being involved in a fatal crash (De Young et al. 1997). The unlicensed driving population includes drivers who will never obtain a licence, drivers who are unlicensed due to licence expiration, suspension and cancellation, and young people who drive on the road *prior* to entering the licensing system (pre-Licence driving). Such pre-Licence drivers are the focus of this paper.

Pre-Licence driving has been of interest not only in Australia (e.g., Lam, 2003) but in countries around the world (e.g., Canada, Asbridge et al. 2005; the United States, Williams et al. 1997; New Zealand, Harre et al. 1996; Sweden, Hasselberg & Laflamme 2009). The limited research exploring the behaviour of young people without a driver's licence has focused predominantly upon the involvement of drivers in car crashes, and unsurprisingly pre-Licence drivers have been found to be more likely to be at fault in fatal crashes (Williams et al. 1997). Frequent pre-Licence drivers (Blows et al. 2005) experience nearly double the risk of crashing during the first year of independent driving when they do hold a valid driver's licence than drivers who were not pre-Licence drivers (Stevenson & Palamara 2001).

Pre-Licence driving has also been examined in surveys of novices who subsequently obtained a licence. Half of New Zealand's indigenous Maori population (McDowell et al. 2009) and 12% of Los Angeles high school students were found to engage in pre-Licence driving (Carlos et al. 2009). In addition, pre-Licence drivers have been found to have greater sensation seeking propensity (Begg et al. 2010; Senserrick et al. 2010). Furthermore, unlicensed driving –which includes pre-Licence driving – is more prevalent in rural than urban environments (Senserrick et al. 2010; Elliott et al. 2008). The prevalence of pre-Licence driving, however, remains unknown and is likely to be underestimated as minor crashes are under-unreported in official crash records (Watson 1998).

In Queensland, Australia, the graduated driver licensing (GDL) program was modified in July 2007 to place more restrictions on Learner and Provisional drivers. Of note, Learners have to submit a logbook documenting 100 hours of supervised driving practice. While the changes were intended to reduce novice drivers' crash risk, it is possible they may inadvertently encourage more pre-Licence driving by increasing perceived barriers to licensing. Consequently, a longitudinal investigation

exploring the ramifications of pre-Licence driving for the Learner and subsequent Provisional drivers, within this enhanced GDL context, can provide unique insight into its effects and potentially inform the development and evaluation of policy and countermeasures for pre-Licensed driving. The current study had four aims: 1) explore the incidence of pre-Licence driving among novice drivers post the GDL changes; 2) test the hypothesis that significantly more novices from rural areas, and drivers with higher sensation seeking, would report pre-Licence driving; 3) examine the relationship between pre-Licence driving and self-reported risky driving behaviour and attitudes; and 4) investigate the predictors of pre-Licence driving.

METHODS

Participants

Drivers (*n* = 1032, 609 females) aged 17-19 years (*M* = 17.43, *SD* = 0.67) completed the Learner Survey (Learner drivers) shortly after obtaining their Provisional licence. Six months later, 355 of these drivers (108 females) completed the Provisional Survey (Provisional drivers). Approximately one third of novices were retained in the longitudinal research, however it is noteworthy that the Provisional Survey was conducted when 99% of the state of Queensland was declared a disaster after a wet season characterised by widespread flooding and cyclonic activity.

Materials

Both surveys incorporated sociodemographic questions such as age, gender, study status (*studying, not studying*), and their residential postcode which was collapsed into the corresponding accessibility/ remoteness index of Australia (ARIA) (Commonwealth Department of Health and Aged Care 2001) code as *urban* (ARIA code 1) and *rural* (ARIA codes 2-5). Participants reported pre-Licence driving (*no, yes*; *number of times*), unsupervised driving (*no, yes*), and difficulty obtaining driving practice (*not difficult, neither, difficult*) in the Learner Survey. In both surveys, participants reported crash and offence involvement (*no, yes*), likelihood they would (1 = *very unlikely*, 7 = *very likely*) and intention to (1 = *definitely will not*, 7 = *definitely will*) bend [1] road rules over the next year, how dangerous they thought bending rules was (1 = *very dangerous*, 5 = *not at all dangerous*), and how safe (1 = *not very safe*, 7 = *very safe*) and risky a driver (1 = *never risky*, 7 = *very risky*) they considered themselves. Participants completed the Brief Sensation Seeking Scale (BSSS) (Hoyle et al. 2002) (1 = *strongly disagree,* 5 = *strongly agree*) (Cronbach's α Learner Survey = .83, Provisional Survey = .80) and Behaviour of Young Novice Drivers Scale (BYNDS) (Scott-Parker et al. 2010) (1 = *never,* 5 = *nearly all the time*) (Cronbach's α Learner Survey = .88, Provisional Survey = .92) in both surveys.

Design and Procedure

Queensland drivers who progressed from a Learner to a Provisional (intermediate) driver's licence from April through June 2010 were invited to participate in longitudinal research commencing with the Learner Survey. Novices aged less than 20 years were considered in this study, since they had experienced the enhanced GDL program only. The online survey was administered using KeySurvey Enterprise Online Survey Software (IBM).

Statistical Analysis

Means were compared via analysis of variance and Pearson Chi-square tests. Multinomial logistic regression identified predictors of pre-Licence driving (*none*, *1-5 times*, *> 5 times*). No missing values were imputed. Analyses were evaluated at a significance level of $p = .05$ and conducted using Predictive Analysis SoftWare (PASW) version 18.0.

RESULTS

Learner Survey, *n* = 1032

Twelve percent (n = 125) of Learners reported pre-Licence driving, with an average of 14.72 times (*SD* = 36.40, range 1 – 150, 81.0% ≤ 10 times). Learners currently in a relationship, who spoke a language other than English at home and were born in a country other than Australia reported more pre-Licence driving (Table 1). Pre-Licence drivers (PLDs) were significantly more likely to report driving unsupervised and being detected for a traffic offence as Learners, than those who were not PLDs Males and females had similar involvement in pre-Licence driving, but male PLDs did so more frequently (30.4% > 10 times) than females (7.0% > 10 times). A significantly greater proportion of male PLDs reported driving unsupervised and experiencing less difficulty obtaining driving practice while on their Learner licence than those participants who were not PLDs (Table 1).

Pre-Licence drivers reported significantly greater sensation seeking propensity (BSSS) (*M* = 24.66, *SD* = 6.84) than non-PLDs (*M* = 23.12, *SD* = 6.77). Male PLDs reported significantly greater personal propensity for sensation seeking (*M* = 26.80, *SD* = 6.33) than female PLDs (*M* = 23.29, *SD* = 6.83). The incidence of PLD among rural and urban participants did not differ, irrespective of gender.

A multinomial logistic regression conducted to explore the predictors of PLD incorporated sociodemographics, rurality and sensation seeking propensity (BSSS quartiles) and compared 'no PLD' with '1-5 times' and '> 5 times' groups of PLDs. The model was a good fit to the data, Pearson χ^2 (810) = 1076.99, p = .09, Nagelkerke R^2 = .082. Study status ($p < .05$) emerged as the only significant predictor, with Learners who reported that they had engaged in pre-Learner driving 5 or more times less likely to be studying (β = 1.62).

Longitudinal Research: Learner and Provisional Survey, *n* = 355

PLDs reported significantly more risky driving (BYNDS) as Learner and Provisional drivers (Table 2), and male PLDs reported significantly more risky driving than female PLDs. Male PLDs also reported being involved in more crashes and offences as Provisional drivers than female PLDs. In each survey, PLDs were significantly more likely to report they were unlikely to comply with, as well as held stronger intentions to bend, road rules in the future. PLDs reported they were less safe drivers at both licence levels. Compared to non-PLDs, PLDs reported not following the road rules as a Learner was *more* dangerous; however these drivers subsequently reported not following road rules was *less* dangerous when they were a Provisional driver.

DISCUSSION

The research has provided insight into a comparatively neglected risky driving behaviour - young people driving on the road before entering the legal licensing system. Importantly, the research operationalised a longitudinal methodology which explored novice behaviour *prior* to entering the licensing system, as a *Learner*, and as a *Provisional* driver. One in eight Learner participants reported having engaged in pre-licence driving. PLDs were more likely to report engaging in continued risky

behaviours as Learner and Provisional drivers, and whilst there were no differences in terms of rurality, PLDs had greater sensation seeking propensity.

Pre-Licence drivers are on the road without any demonstrated knowledge of road rules, or skills and abilities in hazard perception, car control and safe road use (Heck et al. 2008). Therefore they may pose a threat not only to their own safety but also to that of other road users. The age of the pre-Licence driver also merits consideration, as age-related variables have been found to be influential in young novice driver behaviour and crash involvement (Waller et al. 2001). Under Queensland's former GDL program, drivers who engaged in pre-Licence driving because they had not yet reached licensing age could be aged up to 16.5 years old. Under Queensland's enhanced GDL program, these same novices now would be aged up to only 16 years of age. Whilst the survey did not incorporate items that measured the age at which the pre-Licence driving was undertaken, nor the duration between pre-Licence driving and when the novice obtained their Learner driver's licence, the younger age of this group of risky drivers may have considerable consequences for road safety. Adolescents aged less than 16 years should be encouraged not to engage in pre-Licence driving; rather they should wait to drive on the road until after they have successfully passed the Learner theory test, allowing them to develop safe road use and road rule knowledge.

The literature has reported that PLDs are more likely to be involved in single vehicle crashes (Hanna et al. 2010), and the pre-licence driving participants in the current study reported more risky driving behaviour over time and across driver's licence, and they continued to state that they were less likely to follow road rules in their future driving. As such, it appears that pre-Licence driving may be a good predictor of risky driving. Future research is needed however to elucidate whether such pre-Licence driving predisposes young people to later risky driving, or whether young people who take risks as drivers are predisposed to drive before they get a licence and then continue to drive in risky ways. Interventions may need to be developed to address both possibilities, focusing on preventing pre-Licence driving whilst young people detected as PLD may require additional interventions, particularly as PLDs were found to have greater sensation seeking propensity. Targeted interventions also need to consider the gender differences in PLD. Specifically, male PLDs reported a greater propensity for sensation seeking, less difficulty obtaining supervised driving practice, and more risky and unsupervised (Learner) driving than females.

GDL programs and their features have been appraised for their effectiveness in reducing young driver crashes and fatalities (Williams et al. 2010); however, they may inadvertently be contributing to pre-Licence driving (Senserrick et al. 2010); particularly in Queensland, with the inclusion of the 100-hour minimum logbook requirement. Pre-Licence driving hours may have been recorded in the Learner logbook upon licensure. Parents could discuss their planned instruction method with their pre-Licence child so that logbook requirements can be met as easily as possible thus discouraging pre-Licence driving if PLD mistakenly believe they will have difficulty obtaining practice. The majority of the PLD reported that obtaining supervised driving practice as a Learner was not difficult; therefore it appears that anticipated difficulty is unlikely to be the reason for the PLD.

A considerable amount of variance in predictors of pre-Licence driving remained unexplained by sociodemographic and sensation seeking characteristics, suggesting practical considerations such

vehicle availability are influential (Carlos et al. 2009; Senserrick et al. 2010). Parents are pivotal in providing driving and practice opportunities, and potentially pre-Licence driving, because it is frequently the family car that is being driven. PLD were more likely to subsequently drive unsupervised; suggesting that a lack of parental supervision may be a contributing factor. Parents should be encouraged to monitor their child's driving behaviour. Friends may similarly be influential, with a lack of punishment and covert encouragement likely to reinforce unsafe driving practises, whilst overt encouragement is likely to provide the impetus to undertake pre-Licence driving (Scott-Parker et al. under review).

Accordingly, future research could identify other variables involved in pre-Licence driving such as the availability of alternative transport, and pre-Licence driving circumstances such as the time of day and the day of the week of the journey, and the reasons for the pre-Licence driving. Research could also explore if future costs are a factor in getting a Learner licence in the enhanced GDL program in Queensland as has been suggested (Senserrick et al., 2010) and has been found in other jurisdictions (Carlos et al., 2009). The pre-Licence driver should also be asked if parents and friends were aware that the young person was engaging in the behaviour, and if they were aware attempts should be made to establish the nature of their involvement (e.g., condone, lack of punishment). This knowledge could then be used to guide targeted interventions. Longitudinal research could also continue to provide unique insight into the long-term effects of pre-Licence driving, and adolescents could be surveyed biannually from 15 years of age to explore their sociodemographic characteristics, parental and peer influence, car availability, and frequency of pre-Licence driving and licensed driving behaviours and attitudes. Future research should continue to explore the role of attitudes and intentions in pre-Licence driving and risky behaviour by the young novice driver.

This research has a number of strengths, including the diverse state-wide sample of young drivers progressing through an enhanced GDL program, minimal missing data, and being the first to offer an exploration of the relationship between pre-Licence driving, rurality and sensation seeking propensity in a Queensland novice driver population. In addition, the sample of novices reflected the population distribution profile of Queensland residents (60.0% of Queensland's 2006 population and 62.2% of the research participants resided in ARIA 1). However, it is not without limitations. The research was not designed specifically to explore pre-Licence driving and therefore circumstances surrounding pre-Licence driving, such as journey purpose, were not investigated. The Learner Survey was characterised by a low response rate overall [14.4% of 9393 eligible Learners of all ages participated in the larger research project, however privacy restrictions preclude calculation of the proportion of Learners aged 17-19 years who chose to participate in the Survey (Learner Survey respondents were aged 17-39 years, however only those participants aged 17-19 years were considered in the present analyses)], and a greater proportion of Learners aged 17 years chose to participate (66.3% of the participants compared to 49.8% of Queensland's drivers with a Learner licence). In addition, there was considerable attrition from the longitudinal research, however separate analyses were undertaken to account for this. Reliance on self-report data is a further limitation however data regarding PLD is unable to be collected via any other means. Anonymity afforded by the online survey, and the lack of legal consequences, is likely to have minimised potential biases.

Driving on the road before entering the licensing system is a risky behaviour associated with considerable risks not only for the young driver, but to all persons who share the road with them. Twelve percent of Learners surveyed as they progressed through an enhanced GDL program reported they had driven on the road before they had a Learner licence, and pre-Licence drivers reported more risky driving intentions, and involvement in traffic offences, as well as appearing more risky drivers in general. The findings highlight the need for interventions to target the young person and their parents *before* they are eligible for a Learner licence. Young people should be encouraged to drive only with a valid licence and to refuse to travel as a passenger of a pre-Licence driver. Parents should be encouraged to monitor their child's behaviour, and to discourage pre-Licence driving in any circumstance.

ACKNOWLEDGEMENTS Special thanks to the Queensland Department of Transport and Main Roads (formerly Queensland Transport) for their assistance in the recruitment of novice drivers for the research project. The first author is the recipient of a National Health and Medical Research Council Postgraduate Research Scholarship. The research findings regarding the incidence of pre-Licence driving and subsequent risky driving behaviour and attitudes were presented at the Australian Injury Prevention Network 10th National Conference on Injury Prevention and Safety Promotion, Brisbane Australia, on 3 November 2011.

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Table 1. *The pre-Licence driving characteristics reported by all the Learner (n = 1032), and the male, drivers (n = 423).*

Key Measures		Pre-Licence Drivers		Male Pre-Licence Drivers	
		N	%	*N*	%
Learner Survey		*N* = 125		*N* = 49	
Age	17 Years	85	68.0	38	77.6
	18 Years	26	20.8	6	23.1
	19 Years	14	11.2	5	10.2
Gender	Male	49	39.2	NA	NA
	Female	76	60.8	NA	NA
Marital Status	Single	**75**	**60.5** [a]	**38**	**77.6** [b]
	Relationship	**49**	**39.5**	**11**	**22.4**
Education	Grade 12 or less	52	41.6	**29**	**55.8** [b]
	> Grade 12	73	58.4	**20**	**40.8**
Study Status	Studying	98	78.4	39	76.6
	Not Studying	27	21.6	10	20.4
Employment	Working	88	70.4	34	69.4
	Not Working	37	29.6	15	30.6
Country of birth	Australia	108	86.4	43	87.8
	Not Australia	17	13.6	6	12.2
Language	English	**112**	**89.6** [b]	44	89.8
	Not English	**13**	**10.4**	5	10.2
Difficulty	Not Difficult	65	52.4	**34**	**69.4** [c]
	Neither	30	24.2	**9**	**18.4**
	Difficult	29	23.4	**6**	**12.2**
Unsupervised	No	**97**	**77.6** [c]	15	30.6
	Yes	**28**	**22.4**	34	69.4
Crashes	No	119	95.2	48	98.0
	Yes	4	4.8	1	2.0
Offences	No	**115**	**92.0** [b]	44	89.8
	Yes	**8**	**8.0**	5	10.2
Rurality	Urban (ARIA 1)	73	58.4	30	61.2
	Rural (ARIA 2-5)	52	41.6	19	38.8

Note*: Significant differences evaluated at the level of .05 have been highlighted in bold for ease of reference. Sociodemographic characteristics were self-reported in Survey 2 (Provisional survey). Analyses utilised Chi-square tests.* [a] *p < .05,* [b] *p < .01,* [c] *p < .001.*

Table 2. *The beliefs and behaviours of novice drivers self-reported in the Learner Survey and the Provisional Survey according to their experiences as a pre-Licence driver (n = 355).*

Key Measures		Learner Survey		Provisional Survey	
		No Pre-Licence Driving *M (SD)*	Pre-Licence Driving *M (SD)*	No Pre-Licence Driving *M (SD)*	Pre-Licence Driving *M (SD)*
Driver Beliefs					
Risky Driver		**1.99 (1.01)**	**2.32 (1.13)** [a]	**2.34 (1.24)**	**2.88 (1.23)** [b]
Safe Driver		5.32 (1.26)	5.24 (1.32)	5.09 (1.31)	4.95 (1.17)
Likelihood of complying		**2.87 (1.65)**	**3.64 (1.82)** [b]	**3.10 (1.79)**	**4.14 (1.79)** [c]
Intentions to comply		**2.24 (1.44)**	**3.34 (1.91)** [c]	**2.58 (1.63)**	**3.60 (1.68)** [c]
Dangerousness of non-compliance		1.81 (0.94)	1.69 (0.94)	1.85 (0.97)	2.05 (1.01)
Driver Behaviour					
Crash *N(%)*		9 (3.0)	3 (7.1)	32 (10.5)	5 (11.9)
Offence *N(%)*		**3 (1.0)**	**5 (11.9)** [b]	37 (12.0)	7 (16.7)
BYNDS	Composite	**68.39 (9.34)**	**74.02 (11.10**) [c]	**75.24 (14.85)**	**84.76 (14.63)** [c]
Subscales	Transient Violations	**18.55 (4.63)**	**21.48 (5.29)** [c]	**22.12 (7.14)**	**27.45 (8.26)** [c]
	Fixed Violations	10.34 (1.04)	10.50 (0.86)	10.58 (1.84)	10.86 (1.72)
	Misjudgement	13.17 (3.01)	13.24 (3.37)	12.22 (2.89)	12.71 (2.92)
	Risky Exposure	**21.66 (3.40)**	**23.33 (4.43)** [b]	**25.05 (5.15)**	**27.55 (5.10)** [b]
	Driver Emotions	**4.67 (1.94)**	**5.48 (2.62)** [a]	**5.27 (2.29)**	**6.19 (2.71)** [a]

***Note**: Significant differences evaluated at the level of .05 have been highlighted in bold for ease of reference. Analyses utilised analysis of variance. [a] $p < .05$, [b] $p < .01$, [c] $p < .001$.*