



**Queensland University of Technology**  
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[Truelove, Verity](#), Freeman, James, & [Davey, Jeremy](#)  
(2019)

'You can't be deterred by stuff you don't know about': Identifying factors that influence graduated driver licensing rule compliance.  
*Safety Science*, 111, pp. 313-323.

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<https://doi.org/10.1016/j.ssci.2018.09.007>

1 ***“You can’t be deterred by stuff you don’t know about”*: Identifying Factors that influence**  
2 **Graduated Driver Licensing Rule Compliance**

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Final article available at: <https://doi.org/10.1016/j.ssci.2018.09.007>

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## Abstract

27 This study aimed to identify and explore the major mechanisms that influence young drivers'  
28 compliance with the Queensland, Australia Graduated Driver Licensing (GDL) (also known  
29 as graduated licensing or graduated driver licensing systems) restrictions. Due to the limited  
30 research focus on compliance with GDL restrictions, a qualitative approach was utilised. The  
31 study consisted of 11 focus groups (N = 60) of young Queensland drivers aged between 17  
32 and 25 years (Mage = 20.50 years, SD = 2.69). Results were analysed using an inductive  
33 thematic analysis. Participants had low perceptions of enforcement certainty for the GDL  
34 restrictions, due to the difficulty in identifying these behaviours. Enforcement of these  
35 restrictions is linked to displaying the provisional licence (P) (also known as intermediate  
36 licence) plates, however this was reported to be violated quite often. Surprisingly, a number  
37 of the restrictions were unknown to participants, despite the restrictions being in place for  
38 over 10 years. The GDL phone restriction, particularly using the phone for Global Positioning  
39 Service (GPS) applications and the use of Bluetooth to listen to music, as well as the  
40 passenger loudspeaker restriction were the least complied with restrictions. Meanwhile, the  
41 zero-alcohol limit was the most complied with restriction. Compliance with these restrictions  
42 was linked with perceptions of enforcement certainty and severity, social acceptance, as well  
43 as perceptions of legitimacy of the restriction and perceived danger associated with violating  
44 the restriction. The punishments for violating these restrictions were widely unknown and  
45 several participants stated they were more likely to comply with the restrictions when they  
46 found out the severity of the punishments. This study identified differences in compliance  
47 with each GDL restriction, as well as detecting a number of factors that influence  
48 compliance. These results can aid in the development of countermeasures that may improve  
49 GDL rule compliance, and the young driver road trauma rate.

50 Key words: Deterrence; enforcement; young drivers; novice drivers; graduated driver  
51 licensing

## 52 **1. Introduction**

53 Young drivers aged under 25 years are consistently overrepresented in road crash  
54 statistics within Australia (Bureau of Infrastructure, Transport and Regional Economics,  
55 2017) and worldwide (Elvik, 2010; World Health Organisation [WHO], 2015). To reduce the  
56 high road trauma rate among this age group, Graduated Driver Licensing (GDL) (also known  
57 as graduated licensing or graduated driver licensing systems) restrictions have been  
58 implemented in a number of countries. These restrictions commonly involve specific  
59 requirements for learning to drive and obtaining a provisional licence (also known as  
60 intermediate licence), as well as ensuring novice drivers gain experience in low risk driving  
61 situations before they graduate to driving in higher risk situations (Bates et al., 2014). It has  
62 been reported that many new drivers violate GDL restrictions at some point, yet despite this  
63 there has still been a significant decrease in young driver road crashes after these restrictions  
64 have been implemented (Bates et al., 2014; Scott-Parker, Watson, King & Hyde, 2012).

65 While there has been extensive research from the U.S. surrounding the effectiveness of GDL  
66 passenger restrictions (e.g. Fell, Todd, & Voas, 2011; Vanlaar et al., 2009; Williams, 2007;  
67 William & Shults, 2010) and GDL night-time restrictions (e.g. Carpenter & Pressley, 2013;  
68 Williams, 2007; Williams & Shults, 2010), research surrounding *compliance* with GDL  
69 restrictions has primarily focused on the night time specific GDL restriction (Mayhew,  
70 Simpson, Ferguson, & Williams, 1998; Williams, Nelson & Leaf, 2002). As such, there has  
71 been a lack of research examining the extent to which young drivers' comply with the GDL  
72 restrictions beyond the night time ban. Therefore, this research will undertake the first steps  
73 in exploring the mechanisms that influence young drivers' compliance with GDL restrictions  
74 in the state of Queensland, Australia.

75 **1.1 GDL in Queensland**

76 The GDL restrictions are different in each Australian state and territory as well as in other  
77 countries where they have been implemented. In Queensland, these initiatives involve a learner  
78 phase, consisting of a minimum of 100 supervised hours for learners under the age of 25 years  
79 before passing a 1 hour driving test. They also include a provisional 1 (P1) and provisional 2  
80 (P2) licence phase for drivers aged under 25 years. The P2 phase is obtained by holding the P1  
81 licence for at least 1 year and passing a hazard perception test. Each licence phase involves  
82 different restrictions that need to be followed while driving, which are presented in Table 1.

83 Table 1

84 *Driving Restrictions on Queensland's Graduated Driver Licensing System*

GDL Restrictions on Learner and P1 Licence Phases	GDL Restrictions on P2 Licence Phase
Zero blood alcohol concentration.	Zero blood alcohol concentration.
Must visibly display the correct plates while driving.	Must visibly display the correct plates while driving.
Complete mobile phone restriction of the driver, including hand-held, hands-free, Bluetooth and loudspeaker functions.	
Passenger phone restriction: restriction of the loudspeaker function of a mobile phone for passengers of drivers on these licence stages.	
Night time passenger restriction: drivers are not allowed to have more than one passenger under the age of 21 years who is not an immediate family member, between the hours of 11pm and 5am.	

85

86 It should be noted that while P2 drivers are no longer required to comply with the  
87 complete mobile phone restriction, they are allowed to use a hands-free phone but are banned  
88 from using any hand-held phone functions while driving; this phone restrictions carries  
89 through to the open licence. As this study is focusing on compliance with GDL initiatives, it  
90 will only focus on the GDL restrictions reported in Table 1, not on the requirements needed

91 to progress through each licence stage, as it is almost impossible for drivers to avoid these  
92 requirements (apart from the 100 hours of supervised driving experience) and obtain a  
93 licence. However, parents in Queensland and New South Wales have reported the recording  
94 of supervised hours to be relatively accurate, and were infrequently asked by their learner to  
95 record false driving hours (Bates, Watson, & King, 2014). Interested readers are encouraged  
96 to refer to previous research that has already addressed compliance with the 100 hours of  
97 supervised practice rule for further information (e.g. Bates et al., 2014; Scott-Parker, 2015;  
98 Scott-Parker, Bates, Watson, King, & Hyde, 2011).

### 99 **1.2 GDL Phone Use While Driving**

100 The Queensland GDL phone restriction (banning all phone functions for learner and  
101 P1 drivers) and passenger phone restriction has not been widely implemented in jurisdictions  
102 outside of Queensland. As such, there is limited research surrounding young drivers'  
103 compliance with these rules. One jurisdiction that has implemented a similar restriction is  
104 North Carolina, U.S. This restriction differs to the Queensland phone restriction, as a  
105 complete phone ban while driving only applies to drivers aged under 18 years. It was found  
106 that there were no significant differences in observed phone rates between young drivers in  
107 this state and young drivers in another U.S. state which did not have this restriction, neither 5  
108 months after its implementation (Foss, Goodwin, McCartt, & Hellinga, 2009), nor 2 years  
109 later (Goodwin, O'Brien, & Foss, 2012). These results are concerning, as it suggests that the  
110 enforcement of these laws are ineffective. However, as these studies occurred in the U.S., and  
111 an observational approach was used, the results may differ in other countries and with  
112 different research methodologies. Further, although some research has assessed the GDL  
113 driver phone restriction, to the best of the authors' knowledge, there has been no published  
114 research which has assessed *passenger* phone restrictions.

### 115 **1.3 GDL Passenger Restriction**

116 In Queensland, it is illegal for learner and P1 drivers aged under 25 to carry more than  
117 one passenger under the age of 21 between 11pm and 5am. This restriction is unique, as it  
118 combines a passenger restriction with a night restriction; most GDL restrictions of a similar  
119 nature ban either the number of passengers a young driver can carry, regardless of the time of  
120 day, or they ban young drivers from driving altogether during certain hours of the night.  
121 Research that has assessed compliance with these restrictions has found that young drivers  
122 were more likely to comply with the passenger restriction than the night restriction (Begg,  
123 Langley, Readers & Chambers 1995). The current research will extend upon previous  
124 research by exploring the factors which influence compliance with the passenger specific  
125 night restriction in Queensland, Australia.

### 126 **1.4 P Plates**

127 The mandatory displaying of licence stage via plates on the vehicle as a GDL rule has  
128 primarily been utilised in Australia, with New Jersey being the only state in the U.S. which  
129 practices this rule (however, small red reflective decal stickers that can peel on and off a  
130 licence plate are used instead of the provisional (P) plates) (Bates, Scott-Parker, Darvell, &  
131 Watson, 2017). However, it has been explained that this rule may increase compliance with,  
132 and enforcement of, not only the GDL restrictions but also other road rules due to the  
133 identifying nature of the plates (Bates et al., 2014). In a recent quantitative study among  
134 Queensland young drivers, it has been identified that displaying P plates while driving plays a  
135 role in influencing young adults to drive more carefully, however this influence is larger  
136 among P1 drivers compared to P2 drivers (Bates et al., 2017).

137 When compliance with this rule is examined, it has been found that many young  
138 drivers believe the plate rule is not well enforced (Bates, Allen, & Watson, 2016).  
139 Interestingly, despite this, further research has shown a majority of young drivers display

140 their correct plates when driving (Bates et al., 2017; VicRoads, 2017). Encouragingly, drivers  
141 who reported not regularly displaying their P plates were more likely to report the police  
142 would use cues other than the plates to identify provisional drivers (Bates et al., 2017). As the  
143 plate rule plays a large role in enforcement of the GDL requirements, it is important to  
144 identify the factors that influence compliance with this restriction.

### 145 **1.5 GDL Alcohol Restriction**

146 Drivers on their learner or provisional (P1 or P2) licence who are aged under 25 years  
147 must have a zero blood-alcohol limit while driving, whereas drivers on their open licence can  
148 have a blood alcohol concentration (BAC) limit of below 0.05. The GDL zero alcohol limit  
149 has been associated with clear reductions in young driver road crashes (Senserrick &  
150 Williams, 2015) and alcohol offences (VicRoads, 2017) in Australia. These results are  
151 associated with a strong combination of a) high perceptions of enforcement certainty, and b)  
152 strong perceptions of social unacceptability. Bates et al. (2016) suggests that the high  
153 perceptions of enforcement for drink driving are associated with the campaigns that have  
154 been targeted at reducing this behaviour, making it seem like enforcement is frequent.  
155 Identifying further factors which influence compliance with this restriction will help in 1)  
156 applying some of these factors to other GDL restrictions to increase compliance and 2)  
157 identifying factors which may aid in further increasing compliance with this restriction.

### 158 **1.6 GDL and Deterrence**

159 Enforcement through traffic laws is the primary method used to promote rule  
160 compliance with the GDL restrictions. The decision to enforce specific road rules has been  
161 based on the extent to which these behaviours contribute to crash risk (Bates, Soole, &  
162 Watson, 2012). Therefore, it is necessary to explore perceptions of enforcement for these  
163 restrictions in order to establish the effectiveness of the current countermeasures. Legal  
164 enforcement is based around classical deterrence theory, which stipulates that an individual is



165 deterred from a crime via a combination of three factors; certainty of apprehension, severity  
166 of punishment and swiftness of punishment (Beccaria, 1764/2007; Bentham 1780/1970). A  
167 reconceptualization of this theory has also been created, which identifies that individuals are  
168 deterred from committing a crime via a combination of experiences with direct punishment,  
169 direct punishment avoidance, indirect (i.e. experienced through others) punishment and  
170 indirect punishment avoidance (Stafford & Warr, 1993).

171         Despite the large role deterrence theory plays in enforcement of GDL restrictions,  
172 there has been very limited research that has considered the effectiveness of deterrents on  
173 GDL rule compliance. Research surrounding deterrence theory and road safety has primarily  
174 focused on the behaviours of speeding (e.g. Fleiter, 2010; Truelove, Freeman, Szogi, Kaye,  
175 Davey & Armstrong, 2017) and drink driving (e.g. Freeman, Kaye, Truelove, & Davey,  
176 2017; Szogi, Darvell, Freeman, Truelove, Palk, & Armstrong 2017). When studies have  
177 considered perceptions of enforcement in relation to GDL restrictions, the different types of  
178 GDL restrictions have rarely been separated. This can be considered a large oversight due the  
179 differences in nature, cognitions and motives associated with compliance with each  
180 restriction. A recent study did break up the Queensland GDL restrictions, along with other  
181 major road rules, into fixed rule violations (e.g. a rule that can be broken before the driver  
182 gets into the car) and transient rule violations (e.g. a rule that can be broken while driving, or  
183 can be broken multiple times within the one trip) (Bates et al., 2016). Differences between  
184 fixed and transient rule violations were found, with participants more likely to comply with  
185 fixed rules. These results highlight the importance in separating the different GDL  
186 restrictions when studying GDL rule compliance. However, it is noteworthy that compliance  
187 with these restrictions may differ within the fixed and transient categories. Therefore, it is  
188 necessary to examine the specific GDL violations separately in order to delineate young

189 drivers' compliance with each restriction, the major factors which influence such compliance,  
190 and the effectiveness of the current enforcement initiatives.

### 191 **1.7 GDL and Non-Legal Sanctions**

192 A major problem associated with GDL rule compliance is the difficulty in enforcing  
193 such laws (Bates et al., 2014), as there is an inherent difficulty present in the enforcement of  
194 laws that only apply to a specific population, and whose primary source of identification is  
195 via displaying P plates (Bates et al., 2016). This highlights the necessity to include a focus on  
196 non-legal factors as well as legal factors when exploring GDL rule compliance.

197 When non-legal factors have been explored, parental influence has been shown to  
198 have a large impact on GDL restriction rule compliance (e.g., Allen, Murphy, & Bates, 2017;  
199 -Bates et al., 2016; Beck, Shattuck, Raleigh, & Hartos, 2003; Scott-Parker et al., 2012),  
200 although this appears to have a larger impact on P1 drivers compared to P2 drivers (Bates et  
201 al., 2017). A recent study found that, among young Queensland drivers on the GDL system,  
202 parental punishment was a stronger deterrent for road rule violations than legal deterrence  
203 measures (Allen et al., 2017). In addition, it has been suggested that young drivers need to  
204 consider the GDL rules reasonable in order to comply with these restrictions (Foss &  
205 Goodwin, 2003). It has also been suggested that young drivers' ability to deal with peer  
206 pressure in relation to road rule violations can be limited (Poirier, Blais, & Faubert, 2018).  
207 This past research supports the idea that non-legal factors also play a role in GDL rule  
208 compliance. Consequently, the current study included a focus on non-legal sanctions as well  
209 as legal sanctions.

### 210 **1.8 The Current Study**

211 Most of the research surrounding compliance with GDL restrictions has examined the  
212 rates of compliance, without looking into the factors that influence such compliance. In order  
213 to explore the mechanisms by which young drivers are influenced to comply (and not

214 comply) with the Queensland GDL restrictions, an exploratory qualitative analysis via focus  
215 groups was conducted. As each restriction is unique, an effort was made to focus on each of  
216 the separate restrictions, as opposed to the GDL restrictions as a whole. This research may  
217 aid in the evaluation of countermeasures used to promote GDL rule compliance, with the  
218 intention of increasing young drivers' compliance with these restrictions to further reduce the  
219 high road trauma rates among this high-risk age group. The following research question will  
220 be addressed in the current study: what are young drivers' knowledge and perceptions of  
221 deterrence associated with the GDL restriction violations?

## 222 1. Method

### 223 2.1 Participants

224 Participants ( $N = 60$ , 40 females)<sup>1</sup> were aged between 17 and 25 years ( $M_{age} = 20.50$   
225 years,  $SD = 2.69$ ) and held either a provisional (P1 or P2) or an open Queensland licence.  
226 There was little difference in the number of participants in the P1 licence class ( $n = 23$ ), P2  
227 licence class ( $n = 18$ ) and open licence class ( $n = 19$ ). It is beneficial to include participants  
228 who have some differences, so that other participants can be challenged, and it can allow  
229 them to think more deeply and reflect about the topic being presented (Forrester, 2010;  
230 Ritchie, 2003). Therefore, participants were not divided into groups based on gender and  
231 licence class (P1 licence, P2 licence and open licence), in order to allow a more in depth and  
232 challenging conversation among participants (refer to the online supplement for a summary  
233 of participant groups and further demographic information). Perceptions expressed in focus  
234 groups varied more among individuals than between P1, P2 and open licence holders.

235 Participants were recruited via a mixture of online recruitment ( $n = 34$ ), snowball  
236 sampling ( $n = 6$ ) or were self-selected first year psychology students who received course  
237 credit for completing the study ( $n = 20$ ). Participants who were not offered course credit were

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<sup>1</sup> One participant did not report their gender.

238 instead offered a \$50AUD shopping gift card. All participants were from South-East  
239 Queensland, which consists of metropolitan areas. The researcher organised groups of  
240 between 4-8 participants<sup>2</sup>, as this was considered the ideal number for focus groups (Finch &  
241 Lewis, 2003; Forrester, 2010).

## 242 **2.2 Procedure and Materials**

243 Ethical approval for this study was obtained via the University Research Ethics  
244 Committee. There were 11 focus groups in total, with participant discussions ranging from 40  
245 minutes to 90 minutes. Before each focus group commenced, participants were given an  
246 information sheet to read, a consent form to sign and a short demographic survey to  
247 complete. Semi-structured interview questions were used to guide the discussion. The  
248 questions are a part of a larger study. The questions specific to GDL are included in  
249 Appendix A. These questions focused on identifying participants' perceptions around each  
250 GDL restriction, with a focus on the factors – both legal and non-legal - that influence  
251 compliance with these restrictions.

## 252 **2.3 Data Analysis**

253 A critical realist/contextualist thematic analysis approach was used to analyse this  
254 data. This approach means that reality is constructed through individual's perceptions, and an  
255 individual's version of reality is discoverable through their words (Clarke, Braun, &  
256 Hayfield, 2015). Due to this study's reliance on perceptions, and the exploratory nature of the  
257 study, an inductive approach was used. The purpose of the study was to explore perceptions  
258 relating to compliance with GDL restrictions, so that ideas and themes can come through by  
259 themselves, instead of applying the theory to the data, which may omit important ideas. The  
260 focus groups were recorded and transcribed verbatim by the first author. The analysis

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<sup>2</sup> Due to participants not showing up, there was one group of 2 participants and one group of 3 participants.

261 followed the six phases of thematic analysis: familiarisation, coding, searching for themes,  
262 reviewing themes, defining and naming themes and writing up the themes (Braun & Clarke,  
263 2006; Clarke et al., 2015). This method allowed analysis to occur sequentially, which enabled  
264 the author to determine when the data no longer modified or created new codes, resulting in  
265 data saturation which meant that the data collection should then be terminated (Hancock et  
266 al., 2009; Mason, 2010). To address the validity and reliability of the approach, another  
267 researcher outside of this project also analysed the data and adjusted the codes (thus ensuring  
268 inter-rater reliability). The researchers had a 96.35% coding agreement rate. The first author  
269 and researcher then worked together to finalise the themes.

270

## 271 **2. Results and Discussion**

272

273 The results are presented via the main themes that emerged. This section begins with the  
274 themes addressing the GDL restrictions overall then narrows down into the themes that  
275 address the GDL restrictions separately. The themes consisted of: (i) The GDL laws are not  
276 well enforced, (ii) Some GDL laws are widely unknown, (iii) The GDL phone restriction rule  
277 was not complied with as it was not perceived as well enforced or legitimate, (iv) The GDL  
278 phone restriction was consistently violated for GPS phone applications and listening to music  
279 via Bluetooth, (v) GDL phone laws have not been updated to keep up with the emerging  
280 technology, (vi) It is easy to unintentionally violate the GDL plate rule, (vii) The GDL plate  
281 rule is intentionally violated to avoid police, (viii) The zero alcohol limit GDL restriction is  
282 the most complied with GDL restriction, and (ix) The punishments for GDL violations are  
283 widely unknown and larger than expected. Themes are highlighted by direct participant  
284 quotes. To ensure participants' anonymity, a quote from a female will begin with 'F' and a  
285 quote from a male will begin with 'M'.

286 **3.1 Theme: The GDL Laws are not well Enforced**

287 There was a common perception amongst most participants that the GDL restrictions  
288 are difficult to enforce. This was reported among almost all of these laws, apart from the zero  
289 alcohol limit rule, which was described as being efficiently enforced through Random Breath  
290 Testing (RBT) and the police.

291 The GDL restrictions that were most commonly reported to be perceived as having  
292 low enforcement rates included the passenger phone restriction, mentioned by 18  
293 participants, and the driver phone restriction, mentioned by 30 participants. This was because  
294 neither of these violations are clearly visible to police.

295 It was mentioned several times that if the plate rule (e.g., displaying the correct  
296 licence type via plates on the car) was violated, it would make detection of any other GDL  
297 offence very difficult. The following quote demonstrates this perception:

298 *F: How do they know, when they look at you, unless they think you're a P plater, they*  
299 *wouldn't pull you over*

300  
301 Experience with punishment avoidance was also very common among participants  
302 when violating the GDL laws. This finding is consistent with the direct punishment  
303 avoidance component of Stafford and Warr's (1993) reconceptualised theory of deterrence  
304 which can aid in explaining participants' perceptions associated with the lack of enforcement  
305 of GDL restrictions. An example of this is demonstrated below:

306 *M: I got pulled over before when I first got my red Ps and I forgot them and they didn't say*  
307 *anything to me*

308  
309 This theme is consistent with previous literature in which drivers perceive GDL laws  
310 to have very low enforcement rates (Bates et al., 2016; Goodwin, O'Brien, & Foss, 2012).  
311 Consistent with the principles of deterrence, increasing perceptions of enforcement is key to  
312 increasing rule compliance with these restrictions (Beccaria 1764/2007; Bentham 1780/1970;  
313 Piquero, Paternoster, Pogarsky, & Loughran, 2011). Possible suggestions for improving

314 enforcement of GDL restriction include encouraging parents to enforce these restrictions  
315 (Scott-Parker et al., 2012) and having a larger focus on ensuring drivers display their  
316 corresponding P plate when driving (Bates et al., 2016).

### 317 **3.2 Theme: Some GDL Laws are widely Unknown**

318 Not only did participants believe GDL laws were not well enforced, some participants  
319 were not aware of some of the laws that were associated with the system despite either  
320 recently progressing through the GDL system or currently being on GDL restrictions. There  
321 were two GDL rules that were most commonly unknown among participants. One of those  
322 rules was the phone restriction rule, 19 participants stated they did not know the extent of this  
323 rule – in particular, a number of participants stated that they were unaware of the Bluetooth  
324 restriction. The following quotes demonstrate this:

325 *F: I actually didn't know it was a rule for a P plater to not have a Bluetooth system. Is that*  
326 *right?*

327

328 *F: That blows my mind because I didn't know that*

329

330 *F: I think it's not a common knowledge rule that P platers are not meant to have it*

331

332 The other GDL rule that was frequently reported to be unknown among participants

333 was the passenger phone restriction rule in which passengers of learner and P1 licence  
334 holders cannot use a phone that is on loudspeaker. This was reportedly more unknown than  
335 the GDL personal phone restriction rule, 37 participants stated they were unaware of this rule.  
336 This is demonstrated through the following quotes:

337 *F: I don't think they made that clear when they're learning, because I don't remember*  
338 *anyone saying that to me*

339

340 *M: Never even heard of that rule!*

341

342 When participants were aware of all the GDL rules it was commonly acknowledged  
343 that they only knew about it via a talk that was given when they were in high school. Some  
344 participants said their school did not give any talk on the GDL rules, and they were not made

345 aware of the rules via any other form, therefore they were not aware of some of the rules  
346 associated with different stages of licensing.

347 These findings are consistent with previous research on a young driver complete  
348 phone ban in which many young drivers were unaware of the phone restriction (Foss,  
349 Goodwin, McCartt, & Hellinga, 2009; Goodwin, O'Brien, & Foss, 2012). However these  
350 studies took place five months and two years after this law was employed; the Queensland  
351 GDL phone restriction has been in place for over 10 years, yet this rule is still widely  
352 unknown among those who are currently under the GDL system. The aforementioned studies  
353 did find that knowledge of these rules increased after targeted intervention, so it may be  
354 suggested that implementing a similar intervention strategy could improve the knowledge of  
355 the GDL restrictions in Queensland, Australia.

356 In contrast to the GDL phone restrictions, the plate rule and zero alcohol limit were  
357 almost universally known among participants. Meanwhile the passenger restriction was also  
358 well-known, yet the details of this restriction were commonly misperceived, particularly the  
359 component of the restriction which stipulates that more than no more than one passenger aged  
360 over 21 years (that is not a family member) is allowed in the vehicle, as well as the specific  
361 time this restriction begins. This is demonstrated in the comments below:

362 *F: 11 o clock you can't drive with any, you can't drive with other people. Is that right?*

363 *M: Sorry was that more than 1?*

364 *F: You can't have more than one passenger after midnight. Is that right?*

365 **2.3 Theme: The GDL Phone Restriction Rule was not complied with as it was not**  
366 **perceived as well Enforced or Legitimate**

367 It was consistently mentioned that the GDL rule least likely to be complied with was  
368 the phone restriction rule: all phone functions, including Bluetooth, hands-free and



369 loudspeaker functions are banned while driving on the learner and P1 licence phases for  
370 drivers under 25 years, whereas only the hand-held phone functions are banned on other  
371 licence stages.

372           There were primarily two reasons why the GDL phone restriction rule was least  
373 complied with. Firstly, this rule was considered unnecessary; most participants believed they  
374 would be safely able to use the phone functions which were only restricted for learner and P1  
375 drivers. Due to the rule not being perceived as legitimate, many participants disregarded it.  
376 This is consistent with previous research which found that perceived legitimacy influences  
377 rule compliance (Ramcilovic-Suominen & Epstein, 2015) and more specifically, compliance  
378 with traffic laws (Hertogh, 2015; Van Damme & Pauwels, 2016). These statements  
379 demonstrate this point:

380                           *F: I feel like it's seen as a lesser offense, so more people do it.*

381

382           *F: Not for, um, like the reasons that would cause accidents, like they're not on their phones*  
383                           *talking, but things like Google maps and stuff, like for the most part*

384

385           The second reason is that most participants also believed that this rule could not be  
386 enforced. In particular, it was explained that using the hands free or Bluetooth functions on a  
387 phone while driving are very difficult for police to identify due to the lack of physical  
388 evidence. This is consistent with previous literature in which perceived certainty of  
389 apprehension contributes to road rule compliance (Freeman & Watson, 2009; Homel, 1988;  
390 Piqueuro et al., 2011). The following comments demonstrates this:

391           *F: It's hard to prove that you're using it though. Like if they pull you over and you've got*  
392                           *your phone.*

393

394           *M: Kind of hard to tell when someone's on Bluetooth or something. Driving by, like they*  
395                           *could have just been singing*

396

397           **2.4 Theme: The GDL Phone Restriction was Consistently Violated for GPS Phone**  
398           **Applications and Listening to Music via Bluetooth**

399           The types of GDL phone restriction violations that were most commonly reported  
400 included using the phone as a Global Positional System (GPS) and the use of music via  
401 Bluetooth. These results are consistent with recent research that has identified music and  
402 navigation to be prevalent phone use while driving behaviours (George, Brown, Scholz,  
403 Scott-Parker, & Rickwood, 2018). While both of these phone function GDL bans were not  
404 well known among participants, as mentioned above, most participants stated they would not  
405 comply with these rules even if they were aware of them. Most participants who were aware  
406 of the rule still used those two phone functions while driving, with 41 participants stating  
407 they would use their phone's GPS while driving and 47 stating they would use music through  
408 their phone while driving. Similar to above, this was primarily associated with lack of  
409 enforcement (both legal and non-legal) and lack of perceived legitimacy of the rule – young  
410 drivers are allowed to use a physical GPS and listen to music via CDs/radio but are not  
411 allowed to use the music and GPS functions on a phone.

412           As learner drivers had the supervisor provide them with directions, the GPS phone  
413 ban was not presented as an issue for this licence phase, however almost all participants  
414 viewed this negatively for the P1 licence phase. The primary reasons which emerged for this  
415 GDL violation was these drivers are not yet familiar with the roads and need directions, and  
416 the use of a phone GPS had many advantages over buying a GPS or using a physical map.  
417 These advantages included a) cost; buying a physical GPS is much more expensive than  
418 downloading a GPS application on a phone which, in most cases, is free, b) the GPS  
419 application usually provides updates in a faster and more convenient manner than the  
420 physical GPS, c) the GPS application was perceived as safer than reading a physical map – it  
421 gives the driver enough notice to get into the correct lane and ensures they do not have to

422 make last minutes decisions, and d) the use of a GPS was more well known to participants  
423 than the use of a physical map. The comments below demonstrate some of these perceptions:

424 *F: I use it every day anyway*

425 *M: Like P1 is pretty stupid, but learner it's understandable.*

426 *M: Google maps is just so integrated into what we do*

427 *F: And that's not going to deter me from using google maps, I'm still going to use it*

428 *[laughs]*

429 *F: Navigation. Because GPS' are really expensive and to download google maps on*  
430 *your phone is free.*

431 *F: I think no matter what the penalty was for that, people aren't really going to stop,*  
432 *especially for like maps and music and things*

433 Similarly to the use of a phone for a GPS while driving, almost all participants  
434 reported they would use their phone to listen to music while driving, specifically through the  
435 Bluetooth function. As was stated by many participants for the GPS restrictions, most  
436 participants were more opposed to the Bluetooth restriction during the P1 licence phase  
437 compared to the learner licence phase. The primary reason for this was because participants  
438 were focusing on learning to drive during that phase and listening to music while driving via  
439 Bluetooth was not as much of a concern. The key reasons participants gave for listening to  
440 music via Bluetooth while driving on the P1 stage included: a) there was a clear preference  
441 for listening to music which was on their phone – particularly the use of the music application  
442 Spotify or through music they have downloaded – as opposed to listening to music on the  
443 radio or through CDs, b) they believed it did not interfere with their safety while driving and  
444 c) they believed the radio acted as a larger distraction when driving than their own music –  
445 sirens during advertisements and songs acted as a distraction or confused participants, for

446 example, making them incorrectly believe an ambulance was coming. The following  
447 comments demonstrate these perceptions:

448 *M: You're going to get more distracted from the radio than anything, because they*  
449 *always play sirens and crashes and noises*

450 *F: But I still use that, I still use my music but can, I know it can be distracting but*  
451 *come on [laughs] at least I'm not talking to someone on the other side*

452 *F: But I feel like for PI if it's Bluetooth and you're just using it for music, it should be*  
453 *fine.*

454 These findings present an area of phone use while driving which has received very  
455 little attention in the literature. As the GDL phone restriction is not a common restriction in  
456 other jurisdictions, there has been very limited research that has identified these behaviours as  
457 common road rule violations. Most research has focused on the behaviours of hand-held  
458 phone use while driving (e.g. Backer-Grøndahl & Sagberg, 2011; Neyens & Boyle, 2008;  
459 Oviedo-Trespalacios, Hague, King, & Washington, 2016) or hands-free talking (e.g. Backer-  
460 Grøndahl & Sagberg, 2011; Treffner & Barrett, 2004), with recent extension to social media  
461 use while driving (Basacik, Reed, & Robbins, 2011; McNabb & Grey, 2016). A recent study  
462 into social interactive technology while driving further separated the phone behaviours into  
463 initiating, reading/monitoring and responding, with different predictors reaching significance  
464 for each behaviour (Gauld, Lewis, White, Fleiter, & Watson, 2017). While using the phone  
465 for both GPS and music are not socially interactive phone behaviours, they can be classified  
466 as initiating phone behaviours. Future research could examine whether these initiating  
467 behaviours have similar predictors to social interactive technology initiating behaviours.

468 **2.5 Theme: GDL Phone Laws have not been updated to keep up with Emerging**  
469 **Technology**

470 Many participants believed the GDL law banning all types of phone use while  
471 driving, specifically the use of a GPS phone application and the use of music via Bluetooth,  
472 are not consistent with the current state of technology and need to be updated. This is a  
473 further reason participants provided for their involvement with both behaviours and is linked  
474 with the low perceptions of legitimacy of this law. The use of the GPS application was more  
475 convenient and widespread than the use of a physical GPS or map, as was mentioned in more  
476 detail above. In addition, many participants stated they are not interested in the radio,  
477 especially when it is talk radio. Furthermore, the use of CDs are becoming outdated among  
478 young drivers – they primarily obtain music via their phone and want to listen to this music  
479 when they are driving. This is demonstrated in the following comments:

480 *F: I feel like legislation has such a hard time catching up with technology, so they're*  
481 *just going we're just going to fix it by saying you can't do anything on Bluetooth, just so they*  
482 *can work it out, I guess*

483 *F: Buying a GPS is, it's outdated now, there's no point in buying a GPS, people don't*  
484 *do that anymore*

485 *F: And I think the more arbitrary the rules seem, the more frustrated they get with the*  
486 *rules in general, like that Bluetooth playing music thing, that's just going to annoy people*  
487 *and yeah, I feel like that affects rule compliance because then they go well none of these*  
488 *rules kind of mean anything*

489 **2.6 Theme: It is easy to unintentionally violate the GDL Plate Rule**

490 In total, 17 participants reported they have violated the GDL plate rule  
491 unintentionally, while 30 participants believed it was easy to unintentionally violate this rule.  
492 There were a number of reasons associated with this: a) if they shared a car with someone

493 else who did not have to display plates, it was reportedly very common to forget to put the  
494 plates back on the car when they drove next, b) plates that are stuck to the outside of the car  
495 (either magnetic plates, plastic plates with a suction cup or clear vision static plates) would  
496 fall off as a result of wind and movement from the car, c) in summer, magnetic plates or clear  
497 vision static plates stuck to the outside of the car can melt due to the high temperatures on the  
498 car body, resulting in them falling off, d) if the plates are the type with suction cups that are  
499 stuck to the inside of the car, it was commonly stated they would easily fall down while  
500 driving, e) plates have been stolen (a number of participants reported this occurring at petrol  
501 stations). Some examples of these perceptions are demonstrated in the following quotes:

502 *F: We literally had our plates blow off.*

503 *F: I had a P plate inside and one outside, the person stole the, like why would you*  
504 *steal one P plate? [Laughs]*

505 *F: To forget and like in the summertime, I had the P plates that were stick on*

506 *F: I mean it's purely out of I forgot, or lazy or couldn't find it or whatever, never like*  
507 *intention to break the rule*

508 The ease with which young drivers can unintentionally violate the plate rule is  
509 concerning, considering this is the primary method used to identify whether a driver is  
510 currently in the GDL system and needs to comply with those restrictions, making  
511 enforcement of such restrictions even more difficult. While there has been a focus on  
512 perceptions of the plate restriction (Bates et al., 2017), that research focused on quantifying  
513 perceptions of approval. In contrast, previous research has not explored the ease of  
514 unintentionally violating the plate restriction. However, research has examined the  
515 differences between intentional and unintentional road rule violations more generally and it  
516 has been identified that they involve different psychological processes, with intentional  
517 violations being associated with motivational and social factors, and unintentional violations

518 connected to information processing (Reason, Manstead, Stradling, Baxter, & Campbell,  
519 1990). Additionally, previous scientific efforts in rail crossing literature have identified  
520 differences in rule compliance intention between deliberate violations and unintentional  
521 violations (Darvell, Freeman, & Rakotonirainy, 2015; Freeman, Rakotonirainy, Stefanova, &  
522 McMaster, 2013) which further highlights the necessity of separating these behaviours in  
523 future studies. This presents a major area in need of further development.

### 524 **3.7 Theme: The GDL Plate Rule is intentionally violated to Avoid Police**

525 Whilst many participants reported the violation of the GDL plate rule is largely  
526 unintentional, 11 participants stated they would still intentionally violate this rule. One  
527 reported reason for this is laziness – either the plates have been taken down by someone else  
528 driving the car or the plates have fallen off and the young driver intentionally does not put  
529 them back on. Another reason was the fear of getting pulled over by police, even if they have  
530 not violated any road rules. Participants stated that police frequently pull over drivers who  
531 display a P plate – drivers with red P plates (P1) more frequently than green (P2) – much  
532 more than they would drivers without any plates (based on both personal and vicarious  
533 experiences). This is consistent with the results from Bates et al. (2017), who found that  
534 young drivers believed those displaying P plates were more targeted by the police and other  
535 drivers. While this perception is encouraging as it means these drivers have high perceptions  
536 of apprehension certainty for GDL and general road rule violations, it is more concerning that  
537 many young drivers decide not to display their plates at all because of this fear of police. The  
538 following comments demonstrate these perceptions:

539 *F: Sometimes I'm too lazy and the one at the back it just sits there so I'm like if I get*  
540 *pulled over, I'll just say it fell down because most likely I'll put it up and it will just fall down*  
541 *anyways so yeah*

542 *M: Yeah, I know people who would take their red Ps off because they don't want*  
543 *attention from police. Even if it's still illegal in itself*

544 *F: How bad is it that when I was all through my like red and especially green I would*  
545 *never put mine on*

546 Another reason participants explained influenced their decision to forgo displaying P  
547 plates was the treatment they received from other drivers on the road, where risky driving  
548 behaviours were exerted from open licence holders towards the P plate driver. The following  
549 comment demonstrated this:

550 *F: Uh, sometimes people drive erratically past me or like drive up your ass kind of*  
551 *thing to stress me out. And I notice when I got onto my open licence that happened a lot less.*  
552 *So maybe there's some stigma around P plate drivers.*

553 While some participants stated they would not display their P plates solely to decrease  
554 their chances of getting pulled over despite not violating any road restrictions, other  
555 participants stated P plates would not be displayed to avoid detection from violating the GDL  
556 passenger restriction. This was because the passenger restriction can be clearly visible to  
557 police when the P plates are displayed, whereas the violation of other GDL restrictions are  
558 not as visible, even when the young driver is displaying their plate. This is demonstrated in  
559 the following comments:

560 *F: I think the only time I can imagine people intentionally taking their plates off is like*  
561 *when they're driving after 11 and they've got more people in their car.*

562 This noncompliance with the plate restriction presents a large issue in terms of  
563 enforcement of the GDL restrictions. While this qualitative study was not able to determine  
564 the number of drivers who would violate this restriction, a recent study by Bates et al. (2017),  
565 which also took in place in Queensland (consisting of 226 participants), suggests that the  
566 majority of young drivers would comply with the plate restriction, with 86% of P1 drivers



567 and 76% of P2 drivers reporting they comply with this rule most of the time. Compliance  
568 with this restriction appears much larger in Queensland compared to New Jersey, the only  
569 U.S. state that has a similar restriction; previous studies showed 51% (McCartt et al., 2013)  
570 and 67% of drivers reported using decals all the time (Williams, & McCartt, 2014). After the  
571 decal law was implemented in New Jersey, crash rates among drivers with intermediate  
572 licences decreased by 7.9% per year (Curry, Elliott, Pfeiffer, Kim, & Durbin, 2015) while the  
573 crash rates among learner drivers did not change (Curry, Pfeiffer, Elliot, & Durbin, 2015). It  
574 was found that introduction of the decals did not result in a significant change in compliance  
575 rates of the New Jersey GDL restrictions, suggesting the decline in crash rates was not  
576 associated with larger compliance with the restrictions (Palumbo, Pfeiffer, Elliot, & Curry,  
577 2018). However, New Jersey does not have the night time passenger restriction, which this  
578 study identified to be linked with P plate compliance.

579 It is also interesting to note that a fear of predators was not mentioned as a reason to  
580 intentionally violate the plate rule. Previous research that has examined compliance with the  
581 displaying of decals for young drivers on the GDL system in New Jersey found that a lack of  
582 compliance with this rule was strongly linked to fear of predators identifying that a young  
583 person is in the vehicle (McCartt, Oesch, Williams, & Powell, 2012). Reportedly, this fear  
584 received a large amount of media coverage in New Jersey (Mccart et al., 2012), yet receives  
585 little attention within Australia, where the displaying of provisional plates is more widely  
586 accepted. This may help explain why the fear of predators as a result of displaying plates was  
587 not mentioned among participants.

### 588 **3.8 Theme: The Zero Alcohol Limit GDL Restriction is the Most Complied with GDL** 589 **Restriction**

590 Out of all the GDL restrictions, it was almost unanimous among participants that the  
591 zero alcohol limit is the most complied with restriction, 56 participants stated they would

592 comply with this restriction. The reasons for this included: a) the punishment for violating the  
593 rule is the most severe, b) there were high perceptions of certainty of apprehension, c) it was  
594 perceived as the most dangerous driving behaviour, and d) it was considered socially  
595 unacceptable, significantly more so than violating any other GDL restriction - or more  
596 broadly, more than any other road rule. The social unacceptance appeared to be attached to a  
597 number of factors; several participants stated watching RBT television shows influenced their  
598 perceptions towards drink driving, meanwhile most participants stated they grew up with the  
599 message that it is unacceptable to drink and drive via a combination of advertisements,  
600 parents and other influential people. These results are consistent with drink driving research,  
601 where high perceptions of enforcement certainty influenced less drink driving (Freeman &  
602 Watson, 2009; Freeman, Szogi, Truelove & Vingilis, 2016), drink driving was perceived as a  
603 high risk behaviour (Watling, Armstrong, Smith, & Obst, 2016) and perceived disapproval by  
604 peers and parents has been found to influence drink driving behaviour (González-Iglesias,  
605 Gómez-Fraguela & Sobral, 2015). Participants' perceptions towards this restriction are  
606 demonstrated in the following comments:

607 *M: So much is carried behind it by breaking it, I suppose*

608 *F: They've got RBTs everywhere*

609 *F: I notice it from my brothers group of friends, they will not let anyone drink at all or*  
610 *they will have someone to be the designated driver and it's the same in my group.*

611 *M: And being caught for drink driving sounds a lot worse than having two passengers*  
612 *with you or speeding*

613 *M: But in saying that, we abide by the alcohol one because we're scared of it. So the*  
614 *motivating thing for us is fear*

615 *F: I watch a lot of RBT [participants laugh] so I was never game to drink*

616 Interestingly, compliance with the GDL alcohol limit carried through to the open  
617 licence stage. A number of participants on their open licence explained that despite no longer  
618 being required to maintain a BAC of 0.00 (they are now allowed to drive with a BAC under  
619 0.05), they will not consume any alcohol at all if they know they are going to be driving. This  
620 was connected to either the fear of being unintentionally over the limit or the fear of not  
621 having enough control over the vehicle if they consumed alcohol before driving, even if they  
622 were under the 0.05 BAC limit. These perceptions are demonstrated in the following  
623 comments:

624 *F: I don't drink that much anyway but like, I think that, like when I do, like even if I*  
625 *just have one, like obviously I don't feel that great, but I still wouldn't really be comfortable*  
626 *driving*

627 *F: So personally I just don't, like I'm on my opens but I don't even have a drink with*  
628 *it, like if I'm having dinner*

629 *F: I think it forces you to be cautious as well, like you kind of, if you can get someone*  
630 *in that mindset it kind of carries. I'm really careful about it now because like, you know,*  
631 *because of that.*

632 *F: I think um having like 0 as a limit for all P platers is kind of a good thing because*  
633 *it kind of dissociates drinking and driving. Because it's kind of like well if I have a drink I*  
634 *probably won't drive and so you know, in the future, the default isn't I'm drinking and then*  
635 *I'm driving, it's more will I have a drink or will I not have a drink*

636 Interestingly, while this perception was prevalent among a number of female  
637 participants, no male participants within the focus groups put forward this opinion.

638 **3.9 Theme: The Punishments for GDL Violations are Widely Unknown and Larger**  
 639 **than Expected**

640 The majority of participants were unaware of the punishments associated with each  
 641 GDL violation. The only participants that knew the exact punishment were those who have  
 642 previously been punished for violating a restriction. The specific punishments are outlined in  
 643 Table 2. The punishment for violating the zero alcohol restrictions is the same as the  
 644 punishment for violating the general alcohol limit of 0.05 BAC level on an open licence, i.e. a  
 645 maximum fine of \$1400 AUD and/or 3 months imprisonment and a minimum licence  
 646 disqualification of 3 months and maximum of 9 months (Clarity Law, 2015).

647 Table 2

648 *Punishments for Graduated Driver Licensing Offences (Queensland Government, 2018)*

Graduated Driver Licensing Offence	Legislation	Demerit Points	Fine (AUD)
P1/P2 licence holder failing to display correct P plates clearly legible from front and rear of car	Driver Licensing Reg – Section 61(2)(b) and Section 62(2)(b)	2	\$195
P1 licence holder aged under 25 years driving between 11pm and 5am carrying more than 1 passenger under 21 years who is not an immediate family member	Driver licensing Reg – Section 74(2)	3	\$365
Learner or P1 licence holder under 25 years using a mobile phone when driving	Driver licensing Reg – Section 68(2)	3	\$365

649 *Note.* Learner and Provisional Licence holders in Queensland can only accumulate 4 or more  
 650 demerit points within a 1 year period before being required to choose between licence  
 651 suspension or a period of good driving behaviour.

652 While participants were aware that the punishment would consist of a fine and  
 653 demerit points, when they were told of the specific punishments, participants perceived them  
 654 to be much higher than expected. This is demonstrated in the following comments:

656 *F: It's excessive but I think if more people knew that they wouldn't be like oh we can*  
 657 *just risk it*

658 *F: Yeah, how would anyone be influenced by the penalties because no one actually*  
 659 *knows what they are, like you can't be deterred by stuff you don't know about [laughs]*

660 *F: It's excessive but I think it's a deterrent*

661 These results suggest that the punishments for the GDL violations need to be made  
662 more widely known to enhance their deterrent effect. This is consistent with classical  
663 deterrence theory, in which knowledge and severity of punishment contributes to an  
664 individual's perception of deterrence (Bentham, 1780/1970; Andenaes, 1974).

#### 665 **4. Conclusions and Practical Implications**

666 This study explored young drivers' perceptions of compliance with the GDL specific  
667 restrictions, as well as the factors that influence these perceptions. Overall, perceptions of  
668 enforcement were low; participants believed it was very difficult for police to enforce the  
669 GDL laws, especially if the plate rule was violated. Compliance with each GDL restriction  
670 was mixed; the passenger phone restriction was the least complied with restriction, followed  
671 by the driver phone restriction, while the zero alcohol limit was the most complied with GDL  
672 restriction. There were clear associations between compliance with these restrictions and the  
673 classical deterrence constructs. The zero alcohol limit restriction was associated with high  
674 perceptions of apprehension certainty and high severity of punishment, while the restrictions  
675 which were frequently violated had very low perceptions of enforcement certainty, consistent  
676 with previous research on deterrence and road rule violations (Freeman et al., 2017; Szogi et  
677 al., 2017; Truelove et al., 2017). Additional factors that influenced compliance with these  
678 rules included perceived legitimacy of the rules, perceived danger associated with violating  
679 the rules and social acceptability associated with either violating or complying with the  
680 restrictions. The low perceptions of perceived legitimacy is consistent with previous research  
681 that has identified younger drivers hold more negative views towards enforcement of road  
682 rules (Watling, 2017; Watling & Watling, 2015).

683 There has been limited, if any, research which has explored the effect of using a GPS  
684 via a phone application and listening to music via Bluetooth on driver behaviour. Therefore,

685 it is not yet known whether these restrictions have any effect on young driver safety. As these  
686 behaviours are allowed when isolated from a phone - physical GPS devices and music used  
687 via the radio or a CD may be used when driving while on any GDL stage - it may be  
688 suggested that the banning of these applications is primarily for the purpose of ensuring these  
689 functions are not interrupted by alerts from text messages etc. and young drivers are not  
690 tempted to also use other phone functions while driving. However, the focus group results  
691 suggest that young drivers do intend to use the GPS and music phone applications while  
692 driving irrespective of whether it is legal or not. While this finding is concerning, it also  
693 presents an opportunity to prevent the use of other phone functions while driving which *have*  
694 consistently been proven to increase crash risk, for example, reading messages, sending  
695 messages, and talking on the phone (Oviedo-Trespalacios, Hague, King, & Washington,  
696 2016; Senserick & Williams, 2015). Technology is advancing exponentially and the solution  
697 to preventing dangerous phone behaviours while driving may be found in utilising the  
698 technology with evidence-based policy instead of completely banning it. Specifically, a  
699 possible solution may involve changing the GDL phone restriction at the P1 stage to allow  
700 the use of music and GPS phone applications while driving, provided young drivers also use  
701 a mobile phone application that blocks all other phone functions.

702 A plethora of phone applications currently exist which recognise both the demand for  
703 using the GPS and music phone applications and the dangers associated with using other  
704 phone functions while driving (Tchankue, Wesson, & Vogts, 2012). Most of these  
705 applications allow these two functions while blocking the use of other phone applications  
706 while driving, however the specific functions which are blocked varies between applications  
707 and does not necessarily reduce riskier behaviour (Oviedo-Trespalacios, Haque, King &  
708 Washington, 2018; Oviedo-Trespalacios, King, Truelove, & Kelly, 2018). Allowing these  
709 types of applications at the P1 stage would ensure young drivers are not tempted to use other

710 phone functions or read notifications while driving, yet still allow them to use the most  
711 desired phone functions while driving. This may also aid in increasing drivers' perceptions of  
712 legitimacy of the phone rule, which has been linked to road rule compliance (Tyler, Goff,  
713 MacCoun, 2015; Van Damme & Pauwels, 2016) and may follow through to later driving  
714 stages. It is important to note a number of factors that would need to be considered, including  
715 an investigation into which phone functions should be allowed and the extent to which  
716 drivers can access the music and GPS phone applications while driving. As explained by  
717 Oviedo-Trespalacios et al., (2016), there are many phone functions drivers can use, yet they  
718 do not all represent the same amount of risk. The current applications that block specific  
719 phone functions are voluntary in nature, which presents further issues in relation to the  
720 number of young drivers who would use the application, and whether those with 'problem'  
721 phone behaviours would be less likely to use such an application (Oviedo-Trespalacios, King,  
722 Vaezipour, & Truelove, 2018). Evidence-based policy surrounding phone use while driving,  
723 especially while on the GDL system, needs to be established and application developers  
724 would need to be involved in the process. This is an important area for further investigation.

725         A major issue with the GDL restrictions identified from this study was that a large  
726 proportion of participants were unaware of a number of these restrictions. The primary GDL  
727 rules that were most commonly unknown included the passenger phone restriction rule and  
728 the driver phone restriction rule. A fundamental assumption of deterrence theory is that an  
729 individuals must be aware that something is illegal in order for any deterrent to have an  
730 influence on that individual (Beccaria, 1764/2007; Bentham 1780/1970). Therefore it is  
731 crucial that initiatives are taken which increase awareness of these rules. Possibilities of  
732 increasing awareness around these restrictions include the use of media campaigns and giving  
733 out the information to drivers when they receive their P1 licence.

734 Another issue identified with the GDL restrictions was the noncompliance with the  
735 plate restriction, either intentionally or unintentionally. This occurred much more frequently  
736 with P plates than L plates. Displaying the corresponding plates to the licence stage is the  
737 main method of detecting GDL violations, as the GDL rules only apply to drivers on their  
738 learner, P1 and P2 licence, with different rules attached to each phase. Many participants  
739 noted this occurs unintentionally for a number of reasons while others stated they would  
740 intentionally not comply with the rule either out of laziness or to avoid increased attention  
741 from the police and other drivers. Possible solutions for the unintentional violation include  
742 the development of plates that do not melt off in the summer, the use of plates inside the car  
743 so they are not easily stolen and the development of a device that reminds the driver to put  
744 their plates on before they start driving (if a phone app were to be developed for the GDL  
745 stages, this reminder could be incorporated). As many participants stated they believed  
746 compliance with the GDL restrictions would be higher if the punishments were more widely  
747 known, increasing awareness of the punishment for violating the plate restriction may also  
748 aid in increasing compliance with this restriction. This is supported by Bates et al. (2017),  
749 where it is suggested a severe punishment for not displaying P plates – the Queensland  
750 punishment is 2 demerit points and a \$195 fine (Queensland Government, 2018) – is likely to  
751 influence compliance.

#### 752 **4.1 Limitations**

753 The participants in this study resided in the Australian state of Queensland, and the  
754 GDL restrictions which were focused on were the Queensland specific restrictions which  
755 limits the generalisability of this study - this should be considered when interpreting these  
756 results. However, a number of similarities do exist within the Queensland GDL laws and the  
757 GDL laws in other states and countries, as stated in the introduction. The small number of  
758 participants in some focus groups should also be acknowledged as a limitation (Morse &



759 Field, 1995). However, this was unavoidable due to either no-shows or last minute  
760 cancellations. The possibility of group bias effects should also be recognised, in which there  
761 was the chance that participants were conforming to the opinions of other focus group  
762 members (Morgan, 1996). To control for this, at the beginning of each focus group, all  
763 participants were asked to give their opinion, even if it was different from what others have  
764 said. In addition, as this study used self-report data and was exploring illegal behaviours,  
765 there is the possibility of social-desirability bias, in which participants answered questions  
766 based on what they believe was most favourable (Krumpal, 2013). An effort was made to  
767 control for this by asking participants to give their true opinion, and they were told there were  
768 no wrong or right answers. Meanwhile, the facilitator made a conscious effort to remain  
769 neutral during each focus group session. It should also be acknowledged that a number of  
770 participants were self-selected or recruited via snowball sampling. Additionally, all  
771 participants were recruited from South-East Queensland, which is a metropolitan area and  
772 does not include regional or remote areas, and the majority of participants were university  
773 students. This needs to be considered in the generalisability of the results.

774 **4.2 Conclusion**

775       The results from this study offer an important addition to the extant literature on GDL  
776 restriction compliance. There has been very limited research on rule compliance for the  
777 Queensland GDL specific restrictions; this study has identified a number of specific factors  
778 which contribute to rule compliance – and lack of rule compliance – for each of these  
779 restrictions. As road trauma rates among young drivers remain the highest among all age  
780 groups (WHO, 2015) and GDL initiatives have been shown to effectively decrease road crash  
781 rates among this age group (Bates et al., 2014; Senserrick & Williams, 2015), yet many  
782 young drivers still violate these restrictions (Bates et al., 2014). Therefore, it is necessary for  
783 future quantitative studies to further examine the major factors identified in this study which

784 influence GDL rule compliance. The results from this study may contribute to the  
785 implementation of countermeasures which further decrease road trauma rates among the high  
786 risk group of young drivers.

787 **Acknowledgement**

788 This research was funded by the Australian Research Council Discovery Scheme.

789 **Declarations of interest:** none

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## Appendix

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### *Focus groups: Script and semi-structured questions*

1049 First participants read and sign the consent form.

1050 Participants then complete the short demographic questionnaire items.

1051 **Script:**

1052 Thanks for taking the time to participate in this discussion.

1053 The purpose of this focus group/ interview is for you to discuss your impressions, thoughts,  
1054 and feelings towards the graduate licensing system (GDL) and general rule compliance,  
1055 focusing on speeding behaviour and mobile phone use.

1056 There are no wrong or right answers and I expect that you may have different points of view.  
1057 Please feel free to share your point of view even if it differs from what others have said. Also,  
1058 feel free to have a conversation with one another about these questions, but you are not  
1059 required to share anything you feel uncomfortable discussing. I'm interested in hearing from  
1060 each of you and I want to make sure that all of you have a chance to share your opinions.

1061 The session will be recorded as I don't want to miss any of your comments. No names or any  
1062 information that can identify you will be included in any of the recordings. So your  
1063 comments are confidential.

1064 ***The Graduated Licensing System (GDL):***

1065 Introduction: Queensland has a graduate licensing system which aims to encourage safer,  
1066 more proficient drivers, allowing novice drivers to gain more experience and improve their  
1067 driving skills before they are allowed to progress to a higher class of licence.

1068 1. Are you aware of the rules under the Queensland Graduate Licensing system? Yes/No

1069 1a. [If yes] Can you think of specific examples of the GDL rules?

1070 1b. [If no] Interview to provide interviewees with a print out of the GDL rules

1071 2. What do you think about the rule of [list rules in order on print out]

1072 3. Which rules do you think that other young drivers are more likely to comply with?  
1073 Why?

1074 4. Which rules do you think that other young drivers are more likely to ignore/ not  
1075 comply with? Why?

1076 5. Do you think that the GDL rules are enforced on our roads? Explain.

1077 6. Are you aware of the penalties associated with breaking the law? Do these penalties  
1078 influence the way you and other young drivers drive?

1079