

The driving exposure of learner drivers in New South Wales: Insight from a smartphone app

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Abstract

Young drivers persist as a major public health problem due to their over-involvement in road crashes in which they and other road users are injured. In New South Wales (NSW), young drivers progress through graduated driver licensing (GDL), logging a supervised practice minimum of 120 hours in the learner phase. While logbooks record some information regarding the Learner's driving exposure, such as distance driven, much remains unknown regarding their driving exposure during this period. A smartphone app is currently being used by a group of learner drivers in NSW, providing unique insight into the nature of the young driver's exposure during this learning phase.

Background

In order to mitigate road crash risks, young drivers in NSW must first complete the learner licence phase which is characterised by minimum practice requirements (120 logbook hours, 12 month duration; Scott-Parker & Rune, 2016). Some insight into driving exposure during the learner phase has been gleaned through recent research (NSW: Bates, Watson, & King, 2008; Queensland: Scott-Parker, Bates, Watson, King, & Hyde, 2011; Scott-Parker, Watson, King, & Hyde, 2011), including the appeal and usability of a gamified app (Fitz-Walter, Johnson, Wyeth, Tjondronegoro, & Scott-Parker, 2017). However, much remains unknown regarding the nature of the learner driver's exposure to different driving contexts.

Method

Since the 27th of August, 2017, Learners have been invited to download the *Roundtrip Learner Logbook* iOS app at NSW Customer Service Centres, at the NSW Roads and Maritime Services (RMS) website at <http://www.rms.nsw.gov.au/roads/licence/driver/learner/logbook/digital-logbook.html>, and via the Apple app store (see Figure 1), as one of three NSW-approved Learner digital logbook apps that can be used as an accepted substitute for the paper logbook. Roundtrip utilises smartphone sensors to automatically capture logbook data for the Learner (including start and end location, start time and end time, minutes of day-time driving, minutes of night-time driving, and weather). Learners are required to manually input the nature of the roads driven upon, the traffic conditions, and how they felt the practice went, at the end of each drive. Learners can also input drives recorded in their paper logbook, particularly if the Roundtrip app was previously unavailable to them (i.e., the Learner gained some of their driving experience before the 27th of August, 2017). As at 10 July 2018, logbook app data was available for 1,936 verified Learners aged 16-19 years ($M(SD)=16.44(0.75)$; $n=1059$ females, 54.7%, $n=2$ other, 0.1%, $n=3$ rather not say, 0.2%, $n=25$ nil (did not enter), 1.3%). Learners had recorded 103,482 trips during this time.

Results

On average Learners recorded approximately 31 hours of supervised driving, with an average of 35 minutes of driving, in the Roundtrip app. Mothers provided significantly longer supervision of sons and daughters. Trips completed during the weekend, and during weather conditions that were not fine, were also significantly longer. Regarding the time of day, trips most commonly commenced

between the hours of midday and 6pm (47% of all drives, $p < .001$). Further results will be presented at the conference.

Conclusion

The data collected through this pilot project can to inform further research within this domain, and can be used to guide the development, implementation and evaluation of exposure-related interventions for young novice drivers during the learner licence phase. Future work involves investigating how gamification can be added to the app to encourage learner drivers to undertake more diverse practice.



Figure 1. Screenshots of the app

References

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