

Teenage Driving Patterns in NC: Pre- and Post-GDL

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Purpose. The purpose of this study was to measure and better understand the characteristics of teen driving exposure and risk conditions in North Carolina before and after a graduated drivers licensing (GDL) system came into place. Researchers calculated the average number of trips taken for each teen subject, and looked across subjects to determine the average and median trip time and distance. They calculated the proportion of trips that occurred at night, during the weekend, and under various passenger conditions. These descriptive statistics are presented according to license type in order to compare pre-GDL to post-GDL license types.

Methods. The data were collected using a multi-stage cluster sampling process. The researchers randomly sampled 72 North Carolina high schools (about 20 percent of schools in the state) and then gathered student household contact lists from a proportion of the sampled schools. From these lists, the researchers randomly sampled households, screening for exclusion factors. A total of 2,600 households completed the interview. The data were collected in 3 waves: May 1998, before the GDL program was effectively in place in NC, and also in May of 2000 and 2001. The researchers interviewed teens, asking about their travel in the 24-hour period the day before the interview and the conditions of each trip. The interviews were conducted on all days of the week, and the data were weighted by day of the week in the analysis. This analysis is restricted to car trips taken by the teen interviewed, where the teen was driving, a subset of 4,991 reported trips taken by 1109 individual teen drivers.

Measures. Teens aged 15-17 were included in the study. The sample included pre-GDL licensed teens and three levels of GDL license types. Driving exposure was measured in three ways: 1) count of trips taken in past 24-hour period, 2) amount of time (in minutes) spent driving, and 3) miles driven. Characteristics of driving exposure and risk conditions were also measured, including travel time (time of day and day of week) and passenger conditions. Nighttime driving was defined as a trip that began between 9pm and 5am. Weekday travel was defined as travel that started on or after Friday at 6pm up to Sunday at 6pm, while weekend travel was defined as a trip that started on or after Sunday at 6pm up to Friday at 6pm. When looking at the passenger conditions, researchers took into consideration both the number of passengers and their age. Travel destinations were also collected.

Results and Discussion. Self reported trip distance and duration are crude measures, but they appear consistent across license types and with the other published measures of teen driving exposure. There is a slightly higher proportion of weekend trips for Level 1 drivers, likely because parents may be more available to supervise teens on the weekends. The percentage of night trips taken was lower after the GDL restriction on driving hours was in place (i.e., for Level 1 and Level 2 drivers; Level 2 allowed teens to drive at night to work or with a parent). Since there are exceptions to the restriction, researchers cannot infer the true violation rate of nighttime driving. The majority of teen-driven trips were taken alone, except when supervision was required (for Level 1 drivers). Less than 10 percent of trips where teens were driving involved 2 or more teen (only) passengers. This is consistent with what we know about passenger presence from other teen crash studies. Overall, it appears that the teens going through the GDL program are driving about as much and at similar times as those who were driving before the GDL system was in place. GDL restrictions (such as limiting the time of travel and passenger load) do not appear to be overly burdensome in that they do not affect a large percentage of trips. However, GDL restrictions may still be effective in limiting the small proportion of trips that are known to be the most risky. In examining the (lack of) accuracy and precision of self report data, researchers should continue to look at other methods to measure teen driving exposure, including number of trips, distance, and duration of travel. Additional data from other localities is needed to compare travel patterns across states and to better understand and predict teen driving exposure, and to see if travel patterns are robust to time and place.