ABSTRACT

Teen driving safety is a national concern for teens, parents, and drivers alike. According to the Centers for Disease Control roughly 2,000 teens were killed and 200,000 injured in motor vehicle accidents in 2014. The University of Michigan’s Transportation Research Institute (UMTRI) is conducting a series of studies to explore what impedes and improves teen driving. Adolescents spend a vast amount of their time with friends, often doing activities that require transportation and travel by car. As a result, the most prominent factor considered in this project is the effect passengers have on drivers.

METHODS

The experimental study was executed by observing teen drivers in a driving simulator, both alone and with two of their friends. The simulator includes a fully outfitted car in a climate controlled studio surrounded by large screens. To maximize realism the screen tilts when you come to a virtual stop, and the mirrors all depict images that correspond to the virtual environment.

Additionally, the recruited passengers were two real friends of the driver, to further build a realistic scenario. Each subject drove in both rural and urban settings and was presented with a variety of speed limits, intersections, stop lights, pedestrians and potentially hazardous vehicles.

To analyze the findings we examined how drivers behave in higher risk situations, by tracking each driver’s eye movement, road path, and interactions with passengers. We observed driver behaviors between driving alone versus when they drive with their friends, and compared variables including speed, eye movements, red-light running, speeding and talking to passengers.

EXPECTED RESULTS

While analyses are ongoing and the study has not yet yielded concrete results, our hypothesis is that the presence of passengers will negatively affect a driver’s focus, safety and road performance. This will be demonstrated by the data collected, as we expect to see risky behaviors such as higher speeds, increased red-light running, and more distraction behaviors when the driver has passengers versus when he is alone. We expect to find useful information from this study to highlight areas in need of improvement within driver’s education programs and ultimately contribute to lowering teen mortality rates.