

Virtual Reality's Effects on Texting and Driving in an Adolescent Population

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Background & Purpose Statement

The CDC estimates that each day in the United States approximately nine deaths and more than 1,000 injuries result from crashes reported to involve a distracted driver. One study found that nearly half of high school students in the United States, age 16 years and older, text while driving (Olsen, Shults, & Eaton, 2017). These statistics emphasize the importance of educating teenagers on the importance of avoiding distracted driving. The purpose of this research project was to determine if a virtual reality (VR) experience among teenage drivers impacted knowledge of the risks of texting while driving and the likelihood to abstain from texting while driving.

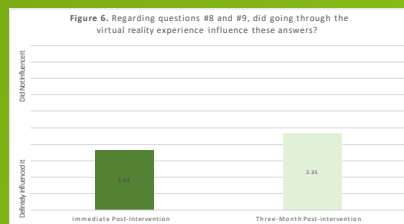
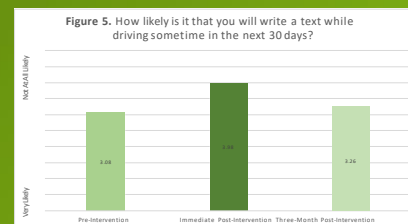
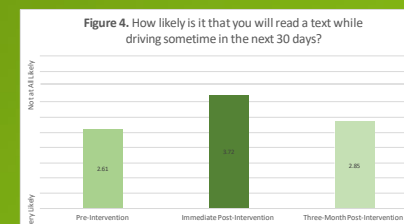
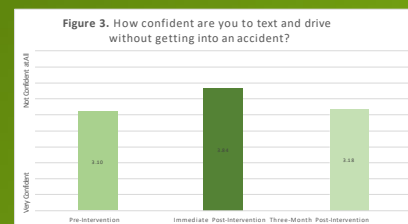
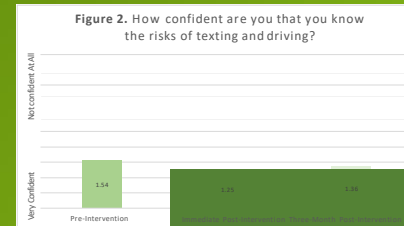
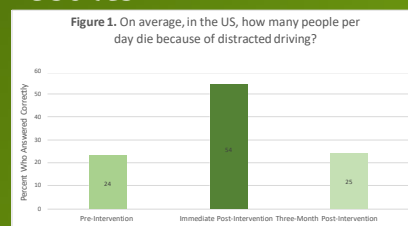
Description

This experimental quantitative study used an interventional pre-post sectional design. The written pre and post survey instrument was developed by the study's investigators and was specific to this study. It included yes/no and Likert scale questions on inclusion criteria, knowledge of the risks of texting while driving, and likelihood to engage in texting while driving. The study was exempted from IRB review by the Harding IRB.

Methodology

Participants turned in a signed consent form prior to participation. The study included 200 high school students from a high school in Arkansas that possessed a cell phone and drivers' license and had access to a motorized vehicle. The pre-survey was given and collected. Participants were then given virtual reality (VR) headsets to engage with the simulated driving experiences created by AT&T as a part of their *It Can Wait* campaign (AT&T It Can Wait, n.d.). A post-survey was given to the same students immediately after the intervention and three months post-intervention. Survey data was collected and entered into Microsoft Excel for analysis.

Results



Survey data was collected and entered into Microsoft Excel for data analysis. Statistical methods of data analysis included the chi-square, Wilcoxon signed-rank, and one-sample t-tests. Specific results are noted above. Results of this study following statistical analysis suggested that this information was very effective immediately post-intervention but had mixed results three months after the intervention.

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Discussion & Conclusions

The study tried to curb the potentially deleterious effects of technology use while driving through a virtual reality simulation experience. The statistical evidence we obtained suggests that community organizations, school programs, and healthcare providers should implement technology-driven distracted driving interventions, such as virtual reality, with high-school drivers in order to influence the knowledge of risks associated with distracted driving and encourage them not to engage in these behaviors. Further, large-scale studies are needed to obtain more data regarding long-term retention of these risks and avoidance of potentially deadly distracted driving behaviors in teenagers.

Acknowledgments

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- Simulated driving experiences available from AT&T *It Can Wait* (n.d.). <https://www.itcanwait.com/>

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