Simulations

Developing a High-fidelity, Veteran-centric, Driving Simulator to Promote Road Safety

Motor vehicle crashes are a leading cause of injury and death for Veterans of our recent wars. Veterans are 75 percent more likely to die in a motor vehicle crash than the overall population (*Lew et al., 2011*). Effective driving interventions have potential to increase safety and reduce motor vehicle crashes and the resulting injuries and deaths. Furthermore, promoting driving fitness may also have carryover effects supporting other key arenas of community re-integration such as family function, employment, participation in society, and satisfaction with life. To this end, researchers at the University of Florida (Gainesville, FL) developed the "DriveSafety" high-fidelity simulator, based on the control panel from a Ford Focus and engineered into the cab of a passenger van. Veterans train with the DriveSafety simulator by driving the car through predesigned courses, during which their responses are monitored and assessed by a trained evaluator; past investigation by the group has shown the need to train evaluators for consistency across tests. The scenarios are particularly Veteran-centric because they include items like roadside clutter, which presents a significant threat in battle environments where it can conceal improvised explosive devices (IEDs) but is a mere distraction in everyday driving. The Veteran is re-tested, ultimately narrating his experience to detail the use of techniques and practices learned from the evaluator, and driving improvements are recorded.

The University of Florida investigators have been engaged in a randomized controlled trial to show the ability of the intervention to reduce driving errors in the simulator. This study has demonstrated the feasibility of a protocol for use of the DriveSafety simulator as a rehabilitation tool for Veterans experiencing driving difficulty. Several disciplines, including psychology, social work, and community service coordinators that engage in the reintegration of Veterans, benefit as this work complements work they are engaged with to address driving difficulty, unintentional injury, and prevention. Development of this Veteran-centric content now makes it available to multiple military and Veterans Affairs (VA) websites using the DriveSafety simulators for rehabilitation (Figure 1). In addition to articles and a book chapter, the driving intervention has been presented at national conferences including those devoted to driving rehabilitation. By reducing driving errors, it is expected that Veterans will have a greater level of safety, and a reduced burden of crashes, unintentional injury, and other negative sequelae, thus enabling them to be more mobile within their communities.

This effort was supported by MSIS/JPC-1.

FIGURE 1: DriveSafety Simulator (Figure used with permission from the authors).

REFERENCES:

Lew, H. L., Kraft, M., Pogoda, T. K., Amick, M. M., Woods, P., & Cifu, D. X. (2011). Prevalence and characteristics of driving difficulties in Operation Iraqi Freedom/Operation Enduring Freedom combat returnees. J Rehabil Res Dev, 48(8), 913-925.