Ignite Session

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Virtual simulation training system (VSTS)

Background: With healthcare increasingly provided in the home, there is a corresponding increase in need for healthcare worker training in identifying and managing home hazards. Existing training methods using simulated home environments are costly to construct, maintain, and can support only limited data on learning outcomes. In conjunction with the NORA aims to develop new research strategies using technologies such as virtual reality to collect and analyze data, we have developed a virtual simulation training system (VSTS) for training workers to assess and manage hazards that pose a risk to their safety.

Methods: To assure content validity, a mixed-methods participatory strategy (employing focus groups, interviews, and questionnaires) was used to develop a "virtual paradigm". Gaming technologies were used to create a virtual training system for providing an engaging, active, multi-dimensional learning environment. The environment supports interactive selection and uses dialogue boxes to verify hazards, designate severity, and suggest techniques for management. The system automatically collects information on location, selections, time to decision, and time on task. Embedded tutorials promote usability in relation to three training modules that address: 1) electrical, fire, and burn; 2) slip, trip and lift; and, 3) environmental hazard scenarios. The VSTS was evaluated by our user community during hands-on usability, usefulness, and desirability (UUD) studies and is currently being tested for efficacy in a randomized study.

Discussion: We have developed the VSTS, a realistic virtual environment for training healthcare workers to identify and manage various hazards encountered in the home healthcare environment. The current version uses a standard desktop environment and can be downloaded from the Internet. We are actively translating the system to utilize an untethered interface that is considerably more intuitive, promoting search and investigation. In addition, we will introduce physiological metrics to help establish participant status when making decisions when dealing with hazards.

Presenter Abstracts
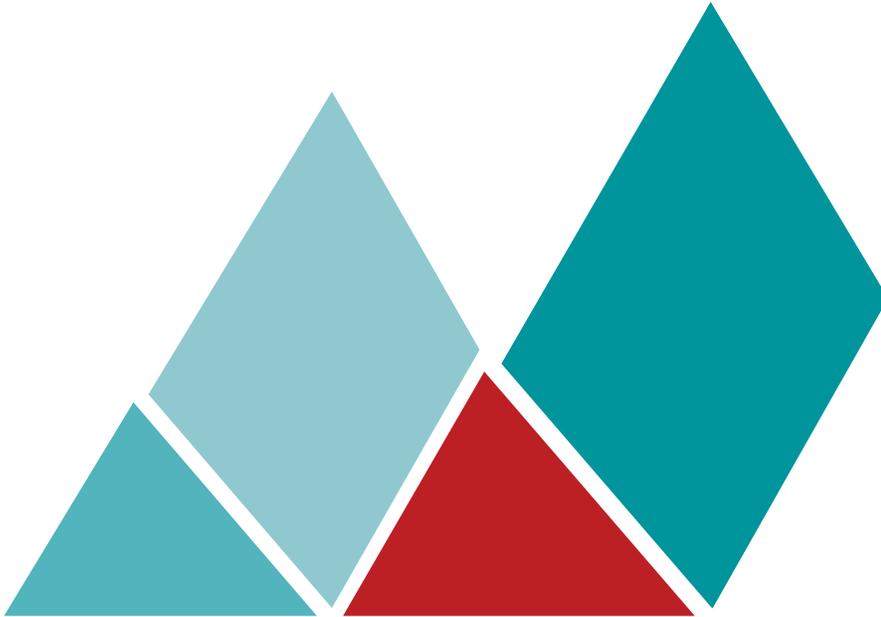
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