

Virtual Simulation for Home Safety Training Among Adolescents With Acquired Brain Injuries: Recommended Modifications to an Existing Program

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PURPOSE: Acquired brain injury (ABI) is a leading cause of death and disability among children and adolescents. These youth experiences safety hazards at home, but few targeted intervention tools exist. Virtual simulations can be used to improve safety training for this population. This research aimed to understand the necessary functions and features of a virtual safety training program for this population.

DESIGN: This study was part two of a descriptive study using a convergent mixed-methods instrumental case study design, intended to collect pilot data about technology design. Participants were eligible if they were a healthcare provider (e.g., OT, SLP, PT), an adolescent (aged 12-19) diagnosed with ABI, or a primary caregiver of an adolescent with ABI. Participants were recruited via word of mouth/fliers and medical record data from the community and the local children's hospital.

METHOD: Participants completed questionnaires on demographics (and injury severity) and program usability. Participants also experienced the current virtual program, the HH-VSTS, and described their perceptions of it in individual or group interviews. Questionnaire data were analyzed with descriptive statistics, and interview transcripts were coded and thematically analyzed.

RESULTS: Participants included 13 healthcare providers, 5 adolescents with ABI, and 5 caregivers. All participants rated the HH-VSTS as having good usability, usefulness, and desirability for adolescents with ABI. Adolescents consistently rated these qualities high, while clinicians and caregivers rated them lower. Themes of recommended modifications were developed and used to create a list of priority enhancements.

CONCLUSION: These findings describe the necessary characteristics of a virtual safety training program for adolescents with ABI. This research will improve our understanding of virtual reality technology development for adolescents with ABI and be used to develop a targeted safety training tool.

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