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Poster Session | July 2015

Virtual Simulation Training in Home Health Care

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American Journal of Occupational Therapy, July 2015, Vol. 69, 6911515068p1. doi:10.5014/ajot.2015.69S1-PO2104

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Abstract

Date Presented 4/16/2015

The study informs the field of occupational therapy about health and safety risks in home health care environments and the participatory design as a method for intervention development.

SIGNIFICANCE: There is increasing demand for home health care services and home health care professionals (HHPs). As a workplace, the home environment is more challenging and variable than other environments. Although HHPs are at high risk of injury and illness, health and safety training is limited, inconsistent, and incomplete. In this study, we are developing and testing an interactive virtual simulation training system (VSTS) to educate HHPs and to assess their ability to identify, assess, and respond to in-home hazards.

INNOVATION: In this study, we address a significant gap in HHP health and safety using a unique training approach. The VSTS assesses risk perceptions and decision making regarding in-home hazards, can be delivered cost effectively via fixed media or the Internet, and is developed using an interdisciplinary participatory approach.

APPROACH: This phase of the study answered the following questions: What hazards do HHPs from different disciplines experience when providing care to clients in their homes? Can a participatory design approach be used to design a virtual simulation intervention?

Occupational therapy professionals in home health care provide services in unpredictable and challenging environments. Empirically sound methods for home-based health and safety training are needed.

METHOD: A participatory design was used for this study, which is a user-centered, iterative process. The research team iteratively designed the VSTS with information from participant interviews to ensure realistic scenarios and to address participant recommendations.

The study took place in community, professional, and virtual settings. A total of 69 home health occupational therapists, physical therapists, nurses, and home health aides participated in this phase of the study. Participants completed a background questionnaire and attended focus group or structured individual interviews. They identified hazards encountered in client homes, provided insights

about VSTS design, created drawings of rooms and hazards, and reviewed an initial VSTS (basic four-room environment).

Quantitative data were analyzed descriptively (with SPSS Version 21). Interviews were recorded, transcribed, and verified. Qualitative data were analyzed with constant comparison methods. Drawings were analyzed by participants and investigators using an iterative method of drawing and depicting hazards and a systematic method of hazard prioritization. The final coding scheme and thematic layers were established in multiple consensus meetings.

RESULTS: Hazards were modeled on participant descriptions, feedback, and drawings. Hazard categories include Electrical and Fire, Slip, Trip, Lift and Fall, and Environmental, and they address direct (e.g., throw rugs, frayed electrical cords) and indirect (e.g., emulation of haze, animal droppings) hazards. Avatars depict client-related hazards, such as an obese client (direct hazard) with limited mobility (indirect hazard is indicated by a nearby wheelchair).

CONCLUSION: HHPs encounter a common set of health/safety hazards in client homes, though they vary in the type of response expected (home health aide identifies hazard but looks to the occupational therapist for a solution). It is feasible to use a participatory approach to design a VSTS to prevent injuries and illnesses across multiple professional disciplines. In the next phases of the study, we will assess the usefulness, usability, and desirability of the VSTS; continue iterative modifications; and test the effectiveness of the VSTS as a training tool.

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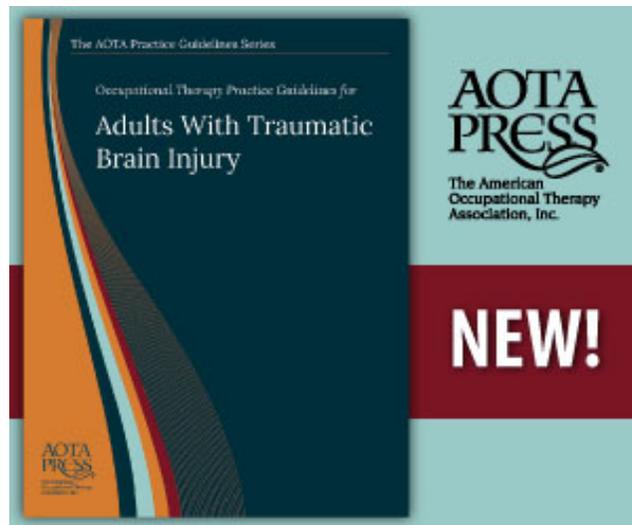
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