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Virtual Reality in Military Healthcare: Applications and Policy

ABSTRACT

Background: Veterans from Operations Iraqi Freedom and Operation Enduring Freedom have been returning from combat with increasing prevalence rates of PTSD and TBI, but with lower treatment rates. As part of a community health partnership, I was part of a multidisciplinary team of clinical experts and virtual reality technical experts that created a virtual supermarket to conduct cognitive rehabilitation and psychotherapy. As part of the project, I sent a qualitative survey to VA therapists to assess the feasibility of using virtual therapy with mild PTSD/TBI patients.

Methods: I served as a liaison to link the two separate teams together. Meetings were held biweekly to identify key features for development, discuss the goals of the clinical team, and how these goals would be carried out by the technical team. The goals are to have the patient conduct an ingredient comparison for low fat and sodium soups, and check out using a virtual wallet. Constructing virtual characters and the dialogue took place in UF's Virtual People Factory. The survey assessed the following items: Comfort levels among therapists using virtual technology, effectiveness of tasks in the supermarket for treatment of TBI/PTSD, policy changes of virtual therapy, reducing barriers to care with virtual therapy, and suggestions for technical improvement.

Results: We developed a prototype virtual supermarket with the following features: shelves stocked with groceries, ingredient lists, a virtual wallet, navigation, and a full dialogue for the patient and cashier. The therapists indicated that patients with TBI are more likely to benefit from Vmart than patients with PTSD. All were open to using Vmart with proper training, and 60% unsure if Vmart would reduce barriers to care. The therapists would like more interaction and detail in the program, and 20% thought virtual reality may become mandatory for treatment of PTSD and TBI.

Conclusions: Vmart may serve as an adjunct to traditional therapy for PTSD/TBI with additional development and testing. Virtual reality technology may also be used to screen soldiers to see if they are ready for or go back into combat. Virtual screening tests can be used to desensitize soldiers to the horrors of combat, or filter out soldiers who are deemed unfit for duty. There is evidence to indicate people treat virtual humans similar to real humans, but ethical and policy questions remain concerning the use and application of virtual reality.