Virtual Reality Enhances Treatment of PTSD

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For the treatment of combat-related post-traumatic stress disorder (PTSD), virtual reality exposure with arousal control (VRE-AC) may be effective, according to U.S. Navy investigators.

One of the few things that have been proven to be effective is exposure therapy. VRE-AC is a 3-dimensional computer simulation of settings that are triggers for PTSD episodes, developed by the Virtual Reality Medical Center in San Diego, CA. Robert McLay, MD, PhD, Naval Medical Center, San Diego, CA, and colleagues attempted to improve upon this standard approach by adding simulation that is manipulated and monitored by a clinician. The clinician can modulate sights, sounds, and the intensity of the scenario. Physiological monitoring helps subjects confront their fears in a controlled way and learn to tolerate them gradually.

The patient wears a headset and views a screen that displays a city, for example, in Iraq. The therapist sits next to the patient and controls all aspects of this virtual world (Figure 1). Changes can be made to the weather, sounds, and the level of violence. Odors and vibrations can also be introduced. The therapist also observes the patient's physical response to the stimulation and monitors patient progress by communicating with the patient.

Figure 1. Example of VRE-AC Simulation.

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Dr. McLay and colleagues compared VRE-AC to treatment as usual (primarily exposure therapy) for combat PTSD in 20 active-duty service members who were diagnosed with PTSD that stemmed from experiences in Iraq or Afghanistan. Most had not responded to standard therapies.

Participants were randomly assigned to receive 10 weeks of treatment with VRE-AC (n=10) or standard therapy (n=10). Treatment success was defined as a ≥ 30% response on the Clinician Administered PTSD Scale (CAPS). Outcomes were available for all VRE-AC participants and nine subjects in the control group.

Success was achieved by nine subjects in the VRE-AC arm (90%) compared with one control subject (11%; $p<0.01$). The VRE-AC group improved an average of 35 points on the CAPS (83.4 vs 48.1), while mean improvement with standard treatment was 10 points (82.8 vs 72.3; $p<0.05$).

Jeffrey Borenstein, MD, chair of the APA's Council on Communications and Medical Director of Holliswood Hospital, Queens, NY, commented, "If virtual reality can assist in the exposure component of PTSD treatment, it is of tremendous potential."

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