

Researchers use 'Virtual Iraq' simulation to study post-traumatic stress disorder

May 14 2007

Weill Cornell Medical College researchers are using a virtual reality simulation called "Virtual Iraq" to better understand how symptoms of post-traumatic stress disorder (PTSD) develop. In their ongoing research trial, participating Iraq War and Gulf War veterans with and without PTSD are shown a brief, 3-D virtual-reality simulation of an urban combat scenario. They wear a headset, through which they hear, see, and -- using a keypad -- "move" through a "virtual world" in which images change in a natural way along with head and body movement.

A recent Archives of Internal Medicine study found that as many as 13 percent of recent veterans are diagnosed with PTSD.

The Weill Cornell researchers are testing whether physiological arousal (heart rate, stress hormones) and anxiety while viewing the simulation -- as well as suppressing memories after viewing the simulation -- affect the ability to remember the scenario and suppress intrusive scenario memories.

The study's principal investigator, Dr. Loretta Malta, a clinical psychologist at Weill Cornell Medical College, states: "It isn't possible after a traumatic event to study, in a controlled way, conditions that lead to the development of specific types of PTSD symptoms. Usually this is studied by comparing people who develop PTSD months or even years after trauma exposure. With this pilot study, we are trying to develop a paradigm in which we can use virtual reality to learn more about how the responses of people exposed to trauma contribute to the development of

PTSD re-experiencing symptoms, like intrusive memories or physiological reactivity to trauma reminders. By better understanding how PTSD symptoms develop, we hope to create effective prevention programs and improve current treatments."

The researchers are testing the hypothesis that verbalizing the traumatic experience, instead of suppressing it, enables patients to better integrate the experience into regular conscious memory, in turn, making the triggering of intrusive traumatic memories (and other re-experiencing symptoms, like flashbacks) less likely. "Research suggests that memories formed during trauma exposure are easily cued by environmental stimuli, and memory suppression has been associated with the development, maintenance and severity of PTSD," adds Dr. Malta.

One of every 10 persons will develop PTSD during their lifetime, potentially resulting in chronic distress and debilitation. Exposure to aversive events evokes the release of stress hormones and neurotransmitters that, in animal models, have been shown to facilitate the learning of highly persistent conditioned fear associations and responses.

The study includes a diagnostic assessment of PTSD and other mental health problems, and veterans in need of treatment are provided with treatment referrals. It is open to Iraq War or Gulf War English-speaking veterans, aged 18 to 55, with and without PTSD. A total of 44 patients will be recruited throughout 2007.

The "Virtual Iraq" virtual-reality environment was developed by Dr. Albert Rizzo of the University of Southern California (USC) Creative Technologies Laboratory and Ken Graap of Virtually Better, Decatur, Ga., with funding from the U.S. Naval Research Office.

Source: Weill Cornell Medical College

Citation: Researchers use 'Virtual Iraq' simulation to study post-traumatic stress disorder (2007, May 14) retrieved 17 April 2024 from <https://medicalxpress.com/news/2007-05-virtual-iraq-simulation-post-traumatic-stress.html>

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