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How Virtual Reality Can Transform PTSD Treatment



An image from Bravemind exposure therapy. Recreating the exact details of a traumatic situation can help patients through PTSD, says WSJ Leadership Expert C. L. Max Nikias.

Photo courtesy of USC Institute for Creative Technologies

By C. L. Max Nikias

Virtual reality (VR) has been hailed as the next frontier for the entertainment industry, with the digital gaming segment in particular already undergoing a significant metamorphosis. Indeed, Goldman Sachs pegs videogames as VR's largest market, bringing in as much as \$27 billion in revenues by 2025.

Gaming may be the primary sector driving the technology forward, but it is far from the only industry VR will disrupt. It's showing tremendous promise in the area of mental health—specifically,

post-traumatic stress disorder, or PTSD. The problem is significant: the National Institutes of Health reports that nearly 8% of Americans suffer from PTSD, and up to 30% of combat veterans.

Exposure therapies, which help patients relive the experiences that led to their trauma in the first place, have proved successful when done in a safe environment with the guidance of a trained clinician. But there is one caveat: These therapies rely on patients to repeatedly reimagine their traumatic experiences. And since

one of the primary symptoms PTSD patients experience is the avoidance of those very memories, there is fierce, sometimes insurmountable resistance.

This is where VR comes in.

Bravemind, a Department of Defense-funded initiative created by researchers at the Institute for Creative Technologies at my school, the University of Southern California, was developed to overcome the natural human tendency to avoid reliving trauma. To participate, PTSD patients must only describe their trauma once. For

veterans, this involves customizable and realistic terrain that captures the detail of combat in Iraq or Afghanistan, as well as the ability to select time of day, weather conditions, vehicle (if any) and even their position in that vehicle, as well as many other details. The information is loaded into the system to re-create events in a highly realistic rendering. Once a patient puts on a headset, he or she is right back there, immersed—sight and sound—in the situation that brought on their condition. With professional support, it is this chance to replay the exact scenario they endured in combat that holds the key to overcoming their trauma.

I have experienced a demonstration of the system and found it very reminiscent of a VR gaming environment. This impression is partly what our researchers had in mind. They believed that young people who have grown up with digital gaming technology might feel more comfortable in a VR treatment approach than with traditional “talk therapy.”

A six-year clinical study with the Pentagon is currently ongoing, but early

data supports the researchers’ assertions: 75% of patients said that if given a choice, they would select VR treatment.

Although the project is still in its research phase, it has already been deployed in more than 100 military bases, hospitals, veterans affairs centers and other sites. Outside of the U.S., it has been adopted by the Canadian military and a rollout is currently under way in Norway and Denmark.

One former Marine and Army reservist who signed up for three consecutive deployments to Iraq and Afghanistan, came home suffering from PTSD, which magnifies the barriers many veterans already face in transitioning to civilian life.

“I think this is an amazing tool,” he told our researchers, “It’s almost like a confessional. I got it off my chest, and now I can work on it.”

As VR transforms the digital gaming industry, the technology that underpins its advancement holds far more promise than mere entertainment. It offers new hope to those for whom looking back has been a barrier to moving forward.



University of Southern California president C. L. Max Nikias holds eight patents in digital signal processing and is a member of the National Academy of Engineering, a fellow of the American Academy of Arts and Sciences and a charter fellow of the National Academy of Inventors (NAI).