

New generation of virtual humans helping to train psychologists

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New technology has led to the creation of virtual humans who can interact with therapists via a computer screen and realistically mimic the symptoms of a patient with clinical psychological disorders, according to new research presented at the American Psychological Association's 120th Annual Convention.

"As this technology continues to improve, it will have a significant impact on how clinical training is conducted in psychology and medicine," said psychologist and virtual reality technology expert Albert "Skip" Rizzo, PhD, who demonstrated recent advancements in virtual reality for use in psychology.

Virtual humans can now be highly interactive, artificially intelligent and capable of carrying on a conversation with real humans, according to Rizzo, a research scientist at the University of Southern California Institute for Creative Technologies. "This has set the stage for the 'birth' of intelligent virtual humans to be used in clinical training settings," he said.

Rizzo showed videos of [clinical psychiatry](#) trainees engaging with virtual patients called "Justin" and "Justina." Justin is a 16-year-old with a conduct disorder who is being forced by his family to participate in therapy. Justina, the second and more advanced iteration of this technology, is a sexual assault victim who was designed to have symptoms of post-traumatic stress disorder.

In an initial test, 15 psychiatry residents, of whom six were women, were asked to perform a 15-minute interaction with Justina. Video of one such interaction shows a resident taking an initial history by asking a variety of questions. Programmed with speech recognition software, Justina responds to the questions and the resident is able to make a preliminary diagnosis.

Rizzo's [virtual reality](#) laboratory is working on the next generation of virtual patients using information from this and related user tests, and will further modify the characters for military clinical training, which the U.S. Department of Defense is funding, he said. Some future patients that are in development are virtual veterans with depression and suicidal thoughts, for use in training clinicians and other military personnel how to recognize the risk for suicide or violence.

In the long term, Rizzo said he hopes to create a comprehensive computer training module that has a diverse library of virtual patients with numerous "diagnoses" for use by psychiatric and psychology educators and trainees. Currently, psychology and psychiatry students are trained by role-playing with other students or their supervisors to gain experience to treat patients. They then engage in supervised on-the-job training with real patients to complete their degrees. "Unfortunately, we don't have the luxury of live standardized 'actor' patients who are commonly used in medical programs, so we see this technology as offering a credible option for clinical psychology training," he said. "What's so useful about this technology is novice clinicians can gain exposure to the presentation of a variety of clinical conditions in a safe and effective environment before interacting with actual patients. In addition, virtual patients are more versatile and can be available anytime, anywhere. All you need is a computer."

More information: Presentation: "Virtual Reality Goes to War: Innovations in Military Behavioral Health Care," Albert Rizzo, PhD,

Session 2257, Friday, Aug. 3, 2 p.m., Rooms W206B and C, Orange County Convention Center

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