

Understanding PTSD: A novel approach to medical education through computer mediated reality

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Introduction

The field of Psychiatry is evolving in terms of treatment options and educational tools through the use of computer mediated reality¹. Virtual reality exposure therapy (VRET) has been used for fear reduction in people with phobias, stress management in cancer patients, pain reduction in burn patients and the treatment of PTSD, to name a few^{2 3}. In terms of medical education, however, there seems to be a gap in the availability of suitable computer mediated reality (CMR) educational modules. Clinical exposure to post traumatic stress disorder (PTSD) in medical education can vary across institutions and amongst individuals. This project aims to use CMR to teach medical students about PTSD.

By immersing participants into a realistic, controlled environment that stimulates the visual, auditory, olfactory and kinesthetic senses, we hope to provide a more engaging method of learning.

Purpose/Hypothesis

To enhance the understanding of PTSD in medical education, encourage the development of increased empathy for patients with PTSD, as well as to contribute towards the future of PTSD treatment methods.

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Materials & Methods

Participants experienced a PTSD demonstration simulation by watching a 360 degree video with binaural audio by means of a mobile phone, headphones, Google cardboard and a sensory theater. This pre recorded video, portraying the life of someone with PTSD, allows a controlled sequence of events to occur through which the participant experiences a simulation of the symptoms of PTSD in first person. Peripheral attributes of the sensory theater were designed to complement the visual experience in order to aid in imposing realism. This was achieved by using devices programmed to safely stimulate changes in air pressure, temperature, scents and vibratory sensations. The peripheral devices of the sensory theater were controlled by a separate microprocessor that initiated stimulation subsequent to the experiences within the simulation.

Results

Anticipated.

Participants will be evaluated based on a pre and post simulation questionnaire. Before the simulation, participants will be shown a short presentation about the DSM-V criteria for diagnosing PTSD. The pre and post simulation questionnaires will aim to address knowledge, empathy and attitudes about PTSD and towards patients with PTSD.

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Discussion

The treatment of PTSD using VRET is an important step forward in the use of CMR. VRET produces a controlled environment to deliver multi sensory and context relevant cues to evoke and modify the pathological elements of stimuli such that they no longer invoke fear³. Using this project, medical students can be immersed in a CMR that exposes them to the apparently harmless stimuli that may serve as triggers and the distorted cognitions present in PTSD, all of which is not present at this point in the current literature. Limitations include the pre recorded video content, which is currently based on a veteran.

References

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Conclusion

We hope for this project to allow for medical students to have improved recognition of the symptoms of PTSD in patients, and to also result in a more empathetic approach towards these patients.

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