

October 2021

Can We Walk in Our Patients' Shoes? Immersive Virtual Reality as an Empathy Training Tool for Medical Students

Riham Alieldin
University of Rochester

Raffaella Borasi
University of Rochester

Anne Nofziger
University of Rochester

Karen DeAngelis
University of Rochester

Sarah Peyre
University of Rochester

Follow this and additional works at: <https://repository.rit.edu/frameless>



Part of the [Artificial Intelligence and Robotics Commons](#), [Educational Technology Commons](#), and the [Medical Education Commons](#)

Recommended Citation

Alieldin, Riham; Borasi, Raffaella; Nofziger, Anne; DeAngelis, Karen; and Peyre, Sarah (2021) "Can We Walk in Our Patients' Shoes? Immersive Virtual Reality as an Empathy Training Tool for Medical Students,"

Frameless: Vol. 4: Iss. 1, Article 13.

Available at: <https://repository.rit.edu/frameless/vol4/iss1/13>

This Research Abstract is brought to you for free and open access by the RIT Libraries. For more information, please contact repository@rit.edu.

Can We Walk in Our Patients' Shoes? Immersive Virtual Reality as an Empathy Training Tool for Medical Students

Riham Alieldin*
University of Rochester

Raffaella Borasi
University of Rochester

Anne Nofziger
University of Rochester

Karen DeAngelis
University of Rochester

Sarah Peyre
University of Rochester

Empathy is arguably the “backbone” of the patient-physician relationship. It has been shown to have numerous positive clinical outcomes especially in a patient-centered careservice. Nevertheless, studies have shown a disintegration of empathy and compassion in physicians during medical school and residency training due to the lack of standardization of empathy training in medical education.

The ability of immersive virtual reality (IVR) to allow individuals to viscerally experience encounters from another person's perspective makes it a potential effective technology to reverse the erosion of empathy in medicine and improve clinical practices. In this research project, IVR as an

innovative teaching platform for enhancing and sustaining empathy in medical students is examined.

BACKGROUND

Why IVR in medical education?

Owing to its ability to immerse its user in a sensory real-life experience, IVR has been proposed in literature as a promising technology for medical empathy training by allowing its users to virtually “step into the patients' shoes”. Given that perspective-taking is a core component of empathy, it is not surprising that VR experiences have been shown to enhance empathy in its users by enabling them to embody another person in

*Corresponding Author, Riham Alieldin

Submitted DATE

Accepted DATE

Published online April 18th, 2022



Figure 1. Medical Students using Embodied Labs

a virtual realistic environment. Studies have shown that this embodiment can have the capacity to modulate empathic responses and behaviors, bridge connections and empower people to understand others. Moreover, empirical research that explored the role of IVR in teaching empathy to health professionals have shown that participants had mostly positive learning experiences, demonstrated enhanced empathy levels and recommended its integration into their curricula.

The IVR Empathy Training Educational Intervention

In this research project, first-year medical students experience a user-focused VR scenario using the Embodied labs platform (see figure 1) from a first-person perspective.

A scenario that focuses on loneliness and social isolation in elderly patients and their effect on their health outcomes is used for this project. The IVR training focuses on key strategies of empathy and empathic communication that involve recognizing patients' emotions, the importance of eliciting a shared understanding of the patient's experiences and responding

empathically to patients. Data is collected using pre-training and post-training surveys as well as interviews.

CONCLUSION

This talk will provide an overview of this research project, the VR software that was used and will share some of the students' feedback on the training. The importance of empathy in patient care and the value of IVR as a tool for clinical empathy training will be discussed through empirical literature. The talk will conclude with a glimpse into the limitless possibilities afforded by XR/VR technologies in medical education and patient care.

Keywords— *Empathy, Virtual Reality, Medical Education*

REFERENCES

- Buchman, Sherleena, and Deborah Henderson. "Interprofessional Empathy and Communication Competency Development in Healthcare Professions' Curriculum through Immersive Virtual Reality Experiences." *Journal of Interprofessional Education & Practice* 15 (2019): 127-30. <https://doi.org/10.1016/j.xjep.2019.03.010>.
- Dyer, E., B. J. Swartzlander, and M. R. Gugliucci. "Using Virtual Reality in Medical Education to Teach Empathy." *J Med Libr Assoc* 106, no. 4 (Oct 2018): 498-500. <https://doi.org/10.5195/jmla.2018.518>. <https://www.ncbi.nlm.nih.gov/pubmed/30271295>.
- Elzie, Carrie A., and Jacqueline Shaia. "Virtually Walking in a Patient's Shoes—the Path to Empathy?" *Medical Science Educator* 30, no. 4 (2020): 1737-39. <https://doi.org/10.1007/s40670-020-01101-0>.
- Ferreira-Valente, A., J. S. Monteiro, R. M. Barbosa, A. Salgueira, P. Costa, and M. J. Costa. "Clarifying Changes in Student Empathy Throughout Medical School: A Scoping Review." *Adv Health Sci Educ Theory Pract* 22, no. 5 (Dec2017): 1293-313. <https://doi.org/10.1007/s10459-016-9704-7>. <https://www.ncbi.nlm.nih.gov/pubmed/27465064>.
- Herrera, F., J. Bailenson, E. Weisz, E. Ogle, and J. Zaki. "Building Long-Term Empathy: A Large-Scale Comparison of Traditional and Virtual Reality Perspective-Taking." *PLoS One* 13, no. 10 (2018): e0204494. <https://doi.org/10.1371/journal.pone.0204494>.
- Hojat, Mohammadreza. "Empathy in Health Professions Education and Patient Care." (2016).
- Ingram, Katherine M, Dorothy L Espelage, Gabriel J Merrin, Alberto Valido, Jennifer Heinhorst, and Mary Joyce. "Evaluation of a Virtual Reality Enhanced Bullying Prevention Curriculum Pilot Trial." *Journal of adolescence* 71 (2019): 72-83.
- Moudatsou, Maria, Areti Stavropoulou, Anastas Philalithis, and Sofia Koukouli. "The Role of Empathy in Health and Social Care Professionals." Paper presented at the Healthcare, 2020.
- Trope, Yaacov, Nira Liberman, and Cheryl Wakslak. "Construal Levels and Psychological Distance: Effects on Representation, Prediction, Evaluation, and Behavior." *Journal of consumer psychology* 17, no. 2 (2007): 83-95.
- Wiederhold, B. K. "Forging Stronger Bonds through Technology: How Virtual Reality Can Instill Empathy." *Cyberpsychol Behav Soc Netw* 23, no. 9 (Sep 2020): 577-78. <https://doi.org/10.1089/cyber.2020.29193.bkw>. <https://www.ncbi.nlm.nih.gov/pubmed/32845732>.
- "The Next Level of Virtual Reality Isn't Technology-It's Storytelling." *Cyberpsychol Behav Soc Netw* 21, no. 11 (Nov 2018): 671. <https://doi.org/10.1089/cyber.2018.29129.bkw>. <https://www>.

ncbi.nlm.nih.gov/pubmed/30421994aV
irtualRealityEnhancedBullyingPreve
ntionCurriculum Pilot Trial.” *Journal
ofadolescence*71 (2019): 72-83.

Moudatsou, Maria, Areti
Stavropoulou,Anastas Philalithis, and
Sofia Koukouli. “TheRole of Empathy
in Health and Social CareProfessionals.”
Paper presented at theHealthcare,2020.

Trope, Yaacov, Nira Liberman, and
CherylWakslak. “Construal Levels
and PsychologicalDistance: Effects on
Representation,Prediction, Evaluation,
and Behavior.” *Journalofconsumer
psychology*17,no. 2 (2007):83-95.

Wiederhold, B. K. “Forging Stronger Bonds
throughTechnology:HowVirtualRealityC
anInstill Empathy.” *Cyberpsychol Behav
SocNetw* 23, no. 9 (Sep 2020): 577-78.
<https://doi.org/10.1089/cyber.2020.29193>.
bkw. [https://www.ncbi.nlm.nih.gov/
pubmed/32845732](https://www.ncbi.nlm.nih.gov/pubmed/32845732).

“The Next Level of Virtual
Reality Isn’t Technology-It’s
Storytelling.”*Cyberpsychol Behav Soc
Netw* 21, no. 11 (Nov2018):671. [https://
doi.org/10.1089/cyber.2018.29129](https://doi.org/10.1089/cyber.2018.29129).
bkw. [https://www.ncbi.nlm.nih.gov/
pubmed/30421994.hjkhjk](https://www.ncbi.nlm.nih.gov/pubmed/30421994.hjkhjk)