



Can Healthcare Students Learn Empathy? Using Virtual Reality Simulation and Traditional Simulation to Help Students Develop Empathy for Persons with Serious Mental Illness

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Introduction - Background

- Empathy skills are essential in healthcare students (Salazar et al., 2023).
- Creating simulations to develop students' empathy for persons with serious mental illness (SMI) is complex.
- Exploratory Learning Model (Thompson et al., 2020)
- Limited evidence exists for virtual reality (VR) simulations.



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Research Questions

- What is the effect of VR auditory simulation compared to traditional auditory simulation on healthcare students' level of empathy for clients diagnosed with schizophrenia (SMI)?
- What is the relationship between the duration of virtual reality simulation and cybersickness?



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Purpose of the Project



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- Compare effects of Virtual Reality (VR) and standard simulations on students' empathy for persons with serious mental illness (SMI)
- Measure VR Sickness

Methods – Design & Ethics

- **Research Design**
 - 2-group experimental pre-test/post-test using random assignment.
 - Feasibility study
- **Ethics**
 - UCCS Institutional Review Board approved the study.
 - No personal identifiable information was collected.
 - Participants could end the study at any time.
 - Qualtrics



Methods – Sampling

- **Population**
 - Prelicensure healthcare students at higher education institutions.
- **Recruitment**
 - Flyers and emails
- **Sampling Method**
 - Convenience sampling
 - Simple Randomization into 2 groups
- **Sample size**
 - 25 healthcare students



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Methods - Sample



- **Sample Demographics**
 - Ages - Range - 18-46 years, Mean - 25.64 years
 - Gender - 72% women and 28% men
 - Race/Ethnicity - 60% White, 20% more than one race, 8% Black/African American, 8% Hispanic, 4% Asian
 - Academic fields of study - 36% nursing, 36% healthcare-other, and 28% pre-healthcare professional.

Methods - Intervention

- **Pre - survey completed**
- **Randomization into groups**
- **Orientation**
- **10-minute scavenger hunt while listening to a simulated hearing voices experience recording "National Power 2 Hearing Voices that are Disturbing" workshop**
 - **Virtual reality (VR) simulation environment in the Unity real-time 3D game using head-mounted display (HMD).**

Methods – Measurement Scales

- **Demographic survey**
 - Participant's age, race/ethnicity, gender, and academic program.
- **Kiersma Chen Empathy Scale-Revised (KCES-R)**
 - For healthcare students
 - Global healthcare professional empathy and self-perceived empathy

Methods - Data Analysis



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- **General Linear Model**
 - Pre and Post test scores
- **Nonparametric ANCOVA (Quades test)**
 - Covariate – Pretest scores
 - Alpha level – 0.05
 - Confidence Interval 95%
- **Kruskal-Wallis**
 - Differences between Healthcare and nursing students

Results

- **Quades test**
 - $F = 0.000$, $p = .990$, CI 95% [9.97-16.02]
- **Both groups significantly increased empathy for persons with SMI with no significant difference between groups.**
 - Pre-test $M = 75.60$ /Post-test $M = 85.75$
 - Kruskal-Wallis $\chi^2 = 3.1587$, $df = 1$, $p = 0.07552$
- **The sample size was small**
- **No significant VR sickness side/effects**
 - 15% reported minimal VR side effects



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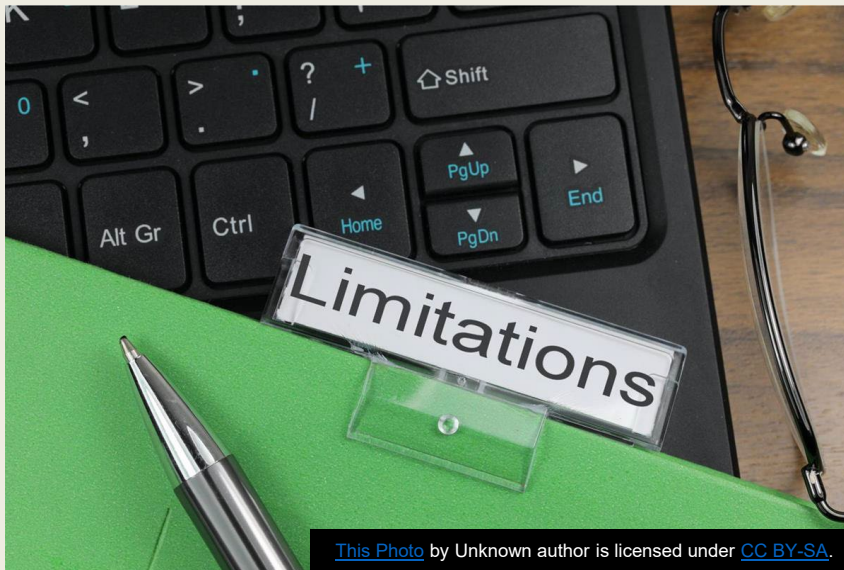
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Discussion - Strengths

- Evidence overall quality of VR simulation
- Improved immediate empathy levels
- No significant side effects to VR simulation
- Decreased exposure to potentially distressing experiences
- Debriefing – facilitated meta-reflection (field notes)
- Decreased staff and space requirement



Discussion - Limitations



- **Equipment/# of participants**
- **Small sample size**
- **Convenience sampling**
- **Could not compare Nursing & Healthcare students**
- **Nonparametric test**
- **Non-generalizability**

Future Directions

- **Education**
 - Quality
 - Engagement
 - Less risk of psychological distress
- **Research**
 - Multi-site/Mixed method/VR modifications
- **Practice**
 - Decrease fear/anxiety
 - Improve healthcare



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Conclusion



- In healthcare students, 10-minute VR simulation is an effective strategy for developing empathy for persons with SMI.
- Feasible

Questions?

- Contact
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*Thank you for attending
our presentation!*



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