

# Virtual Reality Based Mindfulness for Burnout Prevention in a Family Medicine Residency

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## INTRODUCTION & AIMS

- Burnout, which affects 30-50% of physicians, consists of:
  - Exhaustion
  - Cynicism
  - Reduced sense of accomplishment
- Burnout leads to increased medical errors, less professionalism, increased distress, substance use and suicidality.
- Mindfulness training can increase self-awareness and problem-solving with promising evidence as a burnout intervention.
- Barriers to mindfulness practice include perceptions that mindfulness is difficult, boring, or occult.
- The aims of this study were to:
  - Develop mindfulness trainings for burnout prevention
  - Explore mobile virtual reality as a mindfulness training supplement

## TRAINING & MOBILE VIRTUAL REALITY

- Eleven first-year family medicine residents participated in a 2.5-hour workshop on preventing burnout with mindfulness:
  - Overview of physician burnout
  - Rationale for mindfulness as burnout prevention
- Residents received a mobile virtual reality (VR) headset pre-loaded with "Guided Meditation VR," a free mindfulness app.
- The mindfulness app consisted of visually appealing environments (e.g., beach, forest) and guided audio tracks.

## STUDY DESIGN

- Open trial to explore feasibility of mobile VR for mindfulness.
- Qualitative interviews with questions related to:
  - Appealing and off-putting features of mobile VR
  - Recommendations for designing more effective VR apps
- Phenomenological framework to organize the data, identify themes, and describe the "essence" of participants' experience.

### PARTICIPANTS

Age (SD)	Race (%)	Sex (%)
28.44 (4.54)	7 Caucasian (64%) 4 Asian American (36%) 0 Other (0%)	7 Women (64%) 4 Man (36%)

## HOW DOES MOBILE VR WORK?

Mobile VR works by using biconvex lenses, which warps a display so that our eyes perceive two individual images as a single image. This creates the illusion of depth and immersion in the virtual environment (e.g., stereoscopy).



## APPEALING

- Aesthetically pleasing, immersive environments.

*I grew up on a beach and miss it living here in CO. It was really nice for me to be on the beach, even if it was virtual.*

- Audio-tracks for the guided mindfulness exercises.

*I have been reading about mindfulness and practicing some on my own but not with a ton of guides. They helped with my distraction and kept me focused!*

- Visualization of shifting attention around the body during the body scan.

*The little ball of the light moving around helped me follow the instructions during the body scan which was a little longer.*

## OFF-PUTTING

- Navigation difficulties and desire for less screen time.

*Part of my interest in mindfulness is "unplugging" so it felt weird to relax by staring at a screen on a new device.*

- Audio guides are disconnected from the VR scene.

*I'd like more Jon-Kabat-Zinn-like content and audio guides that direct you inside the VR scene or visualize an exercise (like the body scan).*

- Need protected time to practice mindfulness during the work day.

*I would use it more if we had carved out time, even five minutes. It's frustrating to have other things you're being told to do outside of work. Just one more thing.*

## CONCLUSIONS

- First-year family residents responded favorably to practicing mindfulness with VR.
  - Immersive meditations were helpful for resetting and relaxing after stressful encounters.
  - VR is a good way to initiate a mindfulness practice for beginners.
- They had several suggestions for improving their experience.
  - Clearer instructions with video demos.
  - Audio guides that connect to the VR scene.
  - **Protected time in-clinic for practice.**
- Future studies with larger sample sizes, experimental designs, and robust measurement would address many limitations of this project.
- Mindfulness training with mobile VR represents a promising approach to addressing burnout among family medicine residents.