

# A Randomized Controlled Trial to Evaluate the Impact of a Virtual Reality Mindfulness Intervention for Nurse Managers in an Academic Medical Center

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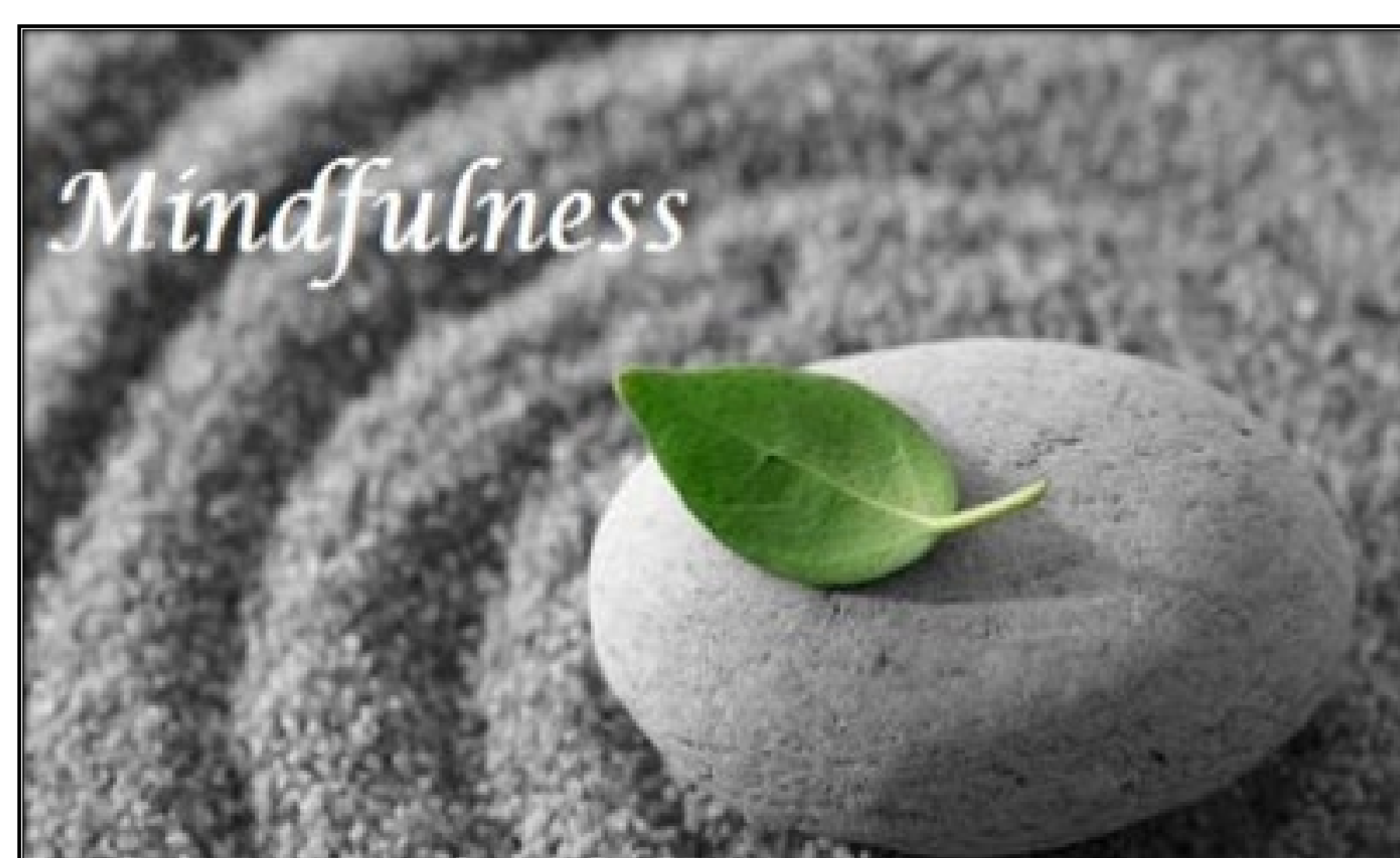


## Background and significance

- The nurse manager role is essential to the success of the organization (Mericle et al., 2023).
- The demands of the nurse manager role are a significant source of stress, fatigue, and burnout (AONL, 2024, Mericle et al., 2023)
- High levels of chronic and recurrent workplace stressors impact the physical, mental, and emotional health and well-being of the health care workers (Dyrbye et al., 2020a, Dyrbye et al., 2020b, Engel, 2023).
- Worksite Mindfulness Based Interventions have been shown to reduce stress and offer skills to improve resiliency, and burnout (Ghawadra et al., 2019, Klatt et al., 2022, Lomas et al., 2018, Steinberg, et al., 2017).
- Virtual reality-based mindfulness sessions have been found to be effective, feasible, and convenient (Harrison et al., 2024, Tamminga et al., 2023, Zhang et al., 2023).

## Study aim

- Evaluate the effectiveness of an 8-week on-demand worksite virtual reality mindfulness-based intervention on: self-reported perceived stress, burnout, resilience, and work engagement.



## Methods

Design	Sample	Measures
<ul style="list-style-type: none"><li>• Randomized intervention wait list control pilot</li><li>• 8 consecutive weeks using VR technology, three times a week for 10–15-minute sessions during work hours</li></ul>	<ul style="list-style-type: none"><li>• Convenience sample of 40 inpatient and ambulatory nurse managers and assistant nurse managers</li><li>• 24/7 unit or department responsibility</li><li>• Ability to participate in the VR mindfulness intervention at least three times a week for the eight-week study period</li></ul>	<ul style="list-style-type: none"><li>• Stress - Perceived Stress Scale-10 (PSS-10)</li><li>• Burnout - Maslach Burnout Inventory-Human Services Survey (MBI-HSS)</li><li>• Engagement - Utrecht Work Engagement Scale-9 (UWES-9)</li><li>• Resilience - Connor-Davidson Resilience Scale-10 (CD-RISC-10)</li><li>• Data measures were collected pre-post intervention.</li></ul>



## Virtual reality mindfulness intervention

- Virtually reality software, commercially developed, includes a virtual reality headset with curated mindfulness content and simulations in 10-12, minute lengths.
- Each week during the 8-week study period, participants interacted with the VR mindfulness intervention three times for 10-12 minutes per use.
- Mindfulness concepts and practices included check-ins to assess current physical and mental state, breath work, awareness and acceptance exercises, and guided relaxation sessions with immersive visual and auditory elements.

## Results

- Compared to waitlist control group, nurse managers in the intervention group experienced significant decreases in stress ( $g=-1.140$ ) and burnout (emotional exhaustion  $g=-0.536$ ; depersonalization  $g=-0.565$ ; personal accomplishment  $g=0.651$ ).
- Compared to waitlist control group, nurse managers in the intervention group experienced significant increases in resilience ( $g=0.679$ ) and work engagement (total  $g=0.96$ ).
- Mean responses were improved with medium to large effect sizes on all outcomes.
- A series of linear regression confirmed that the virtual reality mindfulness intervention was a significant predictor of improvement across all outcome measures (all  $p$  values  $< .02$ ).

## Discussion and implications

- Virtual reality mindfulness interventions can be effective in reducing stress and burnout and improving resilience and work engagement in nurse managers.
- Workplace mindfulness interventions that leverage innovative technology, novel delivery, and on-demand content can offer improved accessibility and integrated solution for nurse manager well-being.
- Healthcare organizations must cultivate supportive and nurturing work environments for NMs and ANMs.
- Implementation of a VR mindfulness intervention can offer an innovative, effective, and efficient strategy to improve the work environment and the health of these essential nursing leaders.

## References

