Mindful Minds: A Virtual Reality-Based Stress Reduction Program for Youth

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NH-ME LEND

Introduction

This project was developed through the UNH Center for Digital Health Innovation (CDHI). CDHI is an interdisciplinary organization that uses digital health innovations and an interprofessional approach to advance the teaching, practice, service, and research missions of the University of New Hampshire's College of Health and Human Services (CHHS). In 2023, CDHI received the USDA Distance Telemedicine Rural grant to promote access to telerehab and telehealth services in rural areas. The REAL i-Series Virtual Reality headsets utilized for this project were purchased through the grant. This partnership with LEND enabled CDHI to explore important ways to increase access to digital and innovative health technologies in these rural areas.

Novel approaches to assisting youth in reducing stress and anxiety, including the use of mindfulness techniques, are emerging. One new approach includes the use of extended reality tools, such as virtual reality (VR). Mindful Minds was developed to explore the efficacy and feasibility of a program centered around youth and young adults learning how to reduce stress through the mind-body connection via a VR program.

Project Description & Implementation

Settings & Population. Participants of Mindful Minds were youth and young adults aged 10 to 22. The program was implemented, in-person or virtually, at various local settings, including community settings (libraries, youth centers) and schools (high school, university).

Program Implementation. At each setting, the program was implemented as follows:

- Participants received an informational program handout and a brief introduction of the VR technology and the purpose of mindfulness.
- Participants were guided through a series of mindfulness activities using the VR technology. Activities included:
  - A 5-minute deep breathing exercise
  - A 3-minute guided mindfulness 'body scan' activity
  - A 5-10-minute exploration of VR environments using the mindfulness techniques learned in the first two activities
- Participants shared their thoughts and reflections about the activities they completed.
- Participants were encouraged to continue the VR mindfulness activities on their own time at regular 5-10-minute intervals over the course of 4 weeks.

Program Evaluation

Perceived Stress Scale.

Statements ' In the last week...'	Never	A little	Sometimes	A lot
...how often did you feel rushed or hurried?				
...how often did you have enough time to do what you wanted?				
...how often did you feel worried about being too busy?				

The Perceived Stress Scale for Children (PSS-C) is an efficient assessment used for identification of stress/anxiety to assist in the development of appropriate interventions (White, 2014). Participants completed this 13-question scale during the initial program session and at the end of the 4-week program to measure changes in their levels of and characteristics of stress/anxiety.

Time Log.

VIRTUAL REALITY HEADSET USE TIME LOG

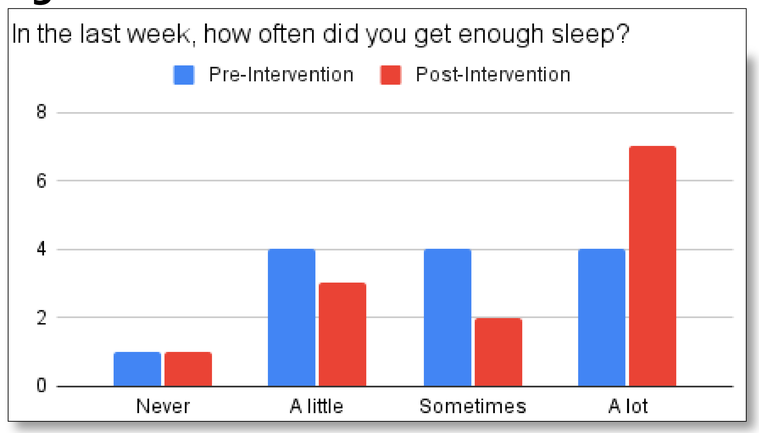
Date	VR Activities Completed	Duration of Headset Use
Example: 12/15/24	**Example**: deep breathing exercises, meditation, VR environment exploration, etc.	**Example:** 15 minutes, 30 minutes, etc.

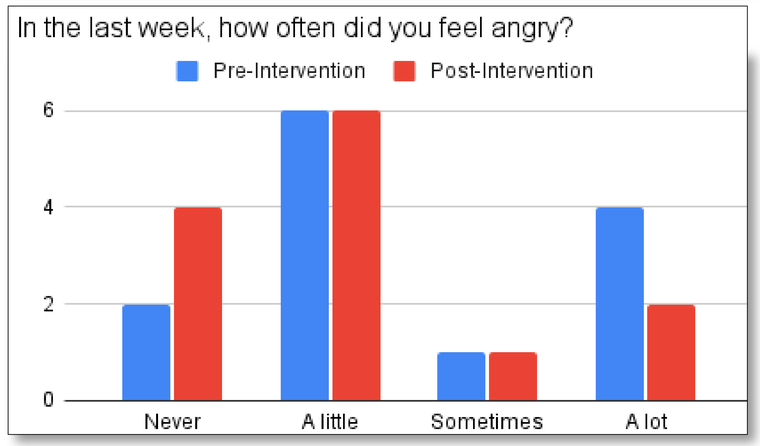
Participants used a time log to track how often they used VR, the duration of use, and which mindfulness activities they completed while using the VR during the 4-week program. This time log was used for additional data to compare program outcomes based on the amount of intervention completed.

Limitations & Barriers

Limitations & Barriers	Description
Access to population	Community settings (libraries, etc.) posed challenges for program implementation due to inconsistent attendance from youth.
Limited number of VR headsets	Only 3 headsets were available for program sessions of 5+ participants. This hindered the structure of the program by causing some participants to lose interest in the activities while waiting to use the VR.
Geographical location	The program was available in rural locations via a virtual session. This caused challenges for the program as it was difficult to fully engage with participants to giude them through the program and activities.

Program Outcomes





"I really liked it. It felt very comfortable to me."
-Participant

"I felt less tense. I wished I was there."
-Participant

Conclusions & Next Steps

This project was an initial step in the process of building out the Mindful Minds program. Lessons learned from this year will be applied to the next iteration of this work. In the summer of 2025, researchers will submit an IRB for a formal research study. In the Fall of '25 we plan to conduct this study to assess the efficacy of stress reduction through the mind-body connection via the Mindful Minds VR program. This year has been an important step in the laying the foundation for this work and unearthing barriers to implementation.

References

White, Barbara. (2014). The Perceived Stress Scale for Children: A Pilot Study in a Sample of 153 Children. International Journal of Pediatrics and Child Health. 2. 45-52. 10.12974/2311-8687.2014.02.02.4.

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