

Mindfulness Training Reduces Psychological Threat in Introductory Physics

Tessa Benson-Greenwald

Avital Pelakh¹, Michael Tumminia¹, Sara Jahanian¹, Eric Kuo², Melanie Good¹, Timothy Nokes-Malach¹, Brian Galla¹

¹ University of Pittsburgh

² University of Illinois, Urbana-Champaign

Intro



- Students under psychological threat may leave STEM pathways prematurely
- Finding interventions that better support current students along STEM pathways is important

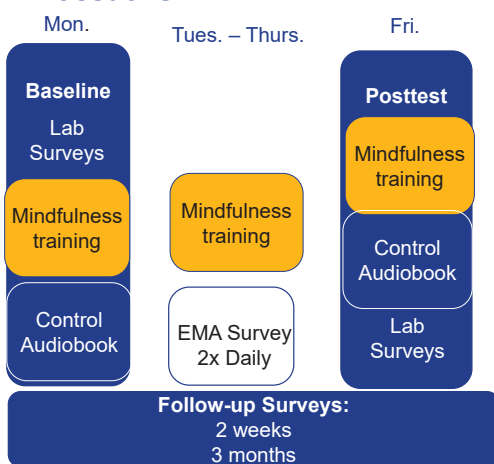
Core Question

- Can mindfulness training reduce psychological threat in introductory physics?

Sample

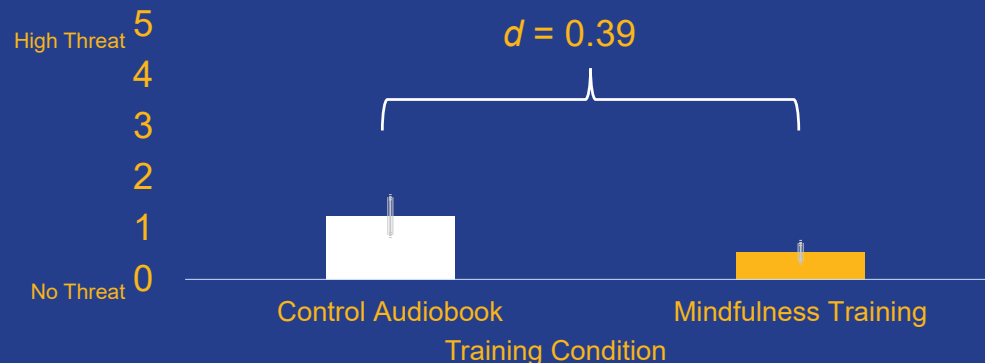
- 149 undergraduate students
- Enrolled in calculus-based introductory physics
- Reported psychological threat

Procedure



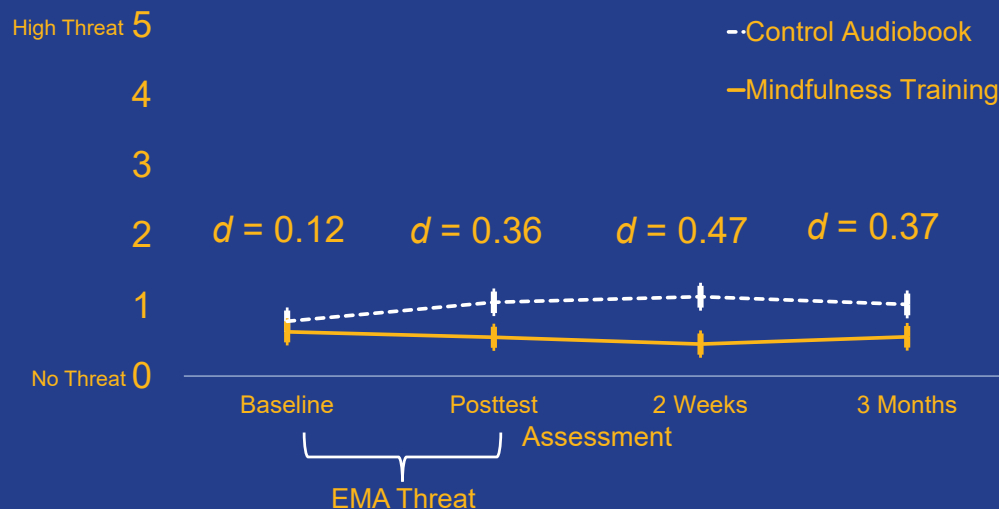
Physics students who received a mindfulness training (vs. control audiobook) reported lower psychological threat during the intervention ...

Figure 1. Mindfulness Training Effects on Ecological Momentary Assessments of Threat



...and this effect endured 3 months later.

Figure 2. Longitudinal Effects of Mindfulness Training



Mindfulness Training

Recognize

- Acknowledge thoughts & feelings

Accept

- Normalize emotions

Investigate

- Examine experiences

Non-Identify

- Experiences as temporary

Results

- Trained (vs. control) students reported greater perceived coping resources
- Intervention had a minimal effect on perceptions of physics demands

Discussion

- Tailored mindfulness intervention can help promote resilience among threatened students who may be vulnerable to withdrawal from the major

Limitations

- Intervention targets individuals, not the context that shapes perceived demands and resources
- Control audiobook is not an active control

Acknowledgments

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