Synergistic Effects of Mindfulness Meditation and Relaxation Response Meditation on Perceived Stress Levels

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Background

Prevalence of Stress
Stress is highly prevalent and can lead to serious negative effects[1]. Undergraduates face high stress levels.

Self-Directed Training
Research is needed to demonstrate the benefits of scalable, affordable, and accessible self-directed interventions[2].

Combined Mindfulness & Relaxation (ARAM)
ARAM may address both psychological and physiological aspects of stress[3].

Identifying the Best Practice
It is important to consider what students respond to.

Research Questions

1. What are the relative contributions of relaxation and mindfulness to stress and mental health?
2. Does a combined ARAM practice produce a stronger reduction in perceived stress levels and greater improvement in mental health as compared to the individual practices of MM and RRM?

Hypotheses

1. ARAM will result in better mental health than MM and RRM.
2. Group will moderate the effect of evaluation schedule.
3. RRM and ARAM will result in greater relaxation than MM.
4. MM and ARAM will result in greater mindfulness than RRM.
5. Changes to mechanistic markers will predict mental health.

Methods

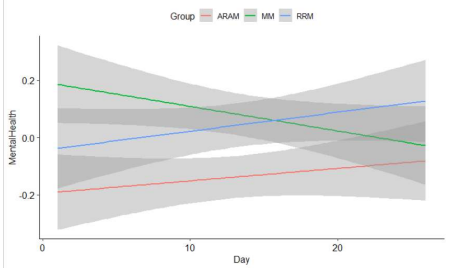
- **Design:** 3 arm randomized control trial.
- 3 levels: across the study period (baseline vs. post study), across sessions (12 sessions), and within sessions (pre vs. post session)
- 3 conditions: Mindfulness Meditation (MM), Relaxation Response Meditation (RRM), Applied Relaxation and Applied Mindfulness (ARAM)
- **Participants:** Undergraduates (N=127); randomly assigned
- **Procedure:** up to 12 sessions (4 weeks): online guided meditations with brief assessment items three times a week.
- **Outcome Variables**
- Study-level:

Mental Health	Patient Health Questionnaire (PHQ-4), Positive Affect Negative Affect Schedule (PANAS), Maslach Burnout Inventory (MBI)
Stress	Perceived Stress Scale (PSS-10)
Mindfulness	Philadelphia Mindfulness Scale (PHLMS), Experiences Questionnaire (EQ)
Locus of Control	Locus of Control Scale

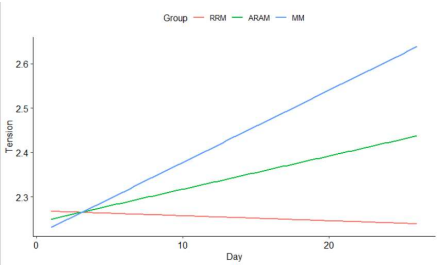
- Session-level (sliders, mood board, and short questionnaires): stress, positive and negative affect, acceptance and decentering, burnout, physical tension and pulse.

Results

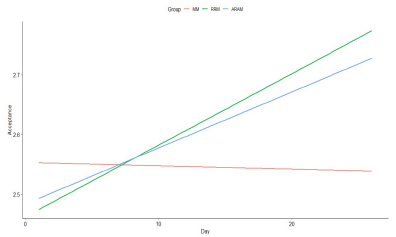
Mental Health
- Across study, significant increase in mental health in RRM and ARAM; decrease in MM.



Physical Tension
- Across study, physical tension slowly increases the most in MM and moderately in ARAM and decreases in RRM.



Acceptance
- Across study, significant increase in acceptance in RRM & ARAM; decrease in MM.



Mechanism
- Variation in physical tension was the best predictor of variance in mental health

Predictor	std. Beta	95% CI	p
Physical Tension	-0.29	-0.32 – -0.25	**<0.001**
Decentering	0.11	0.07 – 0.14	**<0.001**
Acceptance	0.11	0.07 – 0.15	**<0.001**
Pulse	-0.08	-0.12 – -0.04	**<0.00**

Conclusions

1. Self-directed interventions generally improved mental health outcomes.
2. Overall, RRM resulted in better mental health outcomes.
3. For brief interventions, students might benefit most from a focus on physical relaxation (vs. mindfulness)

References

1. Yaribeygi et al (2017)
2. Dimidjian & Segal (2015)
3. Mccann et al (2013)

Lab Site:
http://www.radlab.zone/