

Examining Immediate Effects of Daily Mindfulness and Muscle Relaxation Exercises on Muscle Tension in Adults with Anxiety

Sarah Jo David, Andrew J. Marshall, Emma K. Evanovich, & Gregory H. Mumma
Texas Tech University, Department of Psychological Sciences



Introduction

- Generalized anxiety disorder (GAD) is characterized by excessive, uncontrollable worry and somatic symptoms such as muscle tension and restlessness (DSM-5; APA, 2013)

Muscle-Relaxation Training

- In progressive muscle relaxation, a therapist leads the client through multiple tension and release cycles, teaching the client to recognize and release muscular tension
- Progressive muscle relaxation has been shown to be efficacious in reducing anxiety symptoms (Conrad & Roth, 2007; Arntz, 2003); however, it is often time-consuming, and there is increased interest in examining the effects of brief muscle-relaxation training on anxiety symptoms

Mindfulness-Based Intervention

- Mindfulness-based interventions, which focus on teaching the client nonjudgmental, present-moment awareness, have also been shown to reduce anxiety symptoms (Preddy, McIndoo, & Hopko, 2013)
- Further investigation is needed to determine the immediate effects of brief mindfulness-based and muscle-relaxation exercises on muscle tension in individuals with anxiety

Present Study

- The purpose of the current study was to examine the immediate effects of a daily brief mindfulness-based intervention (MBI) versus muscle-relaxation training (MRT) on muscle tension in adults with anxiety and compare this to participants in an assessment-only control (AOC)

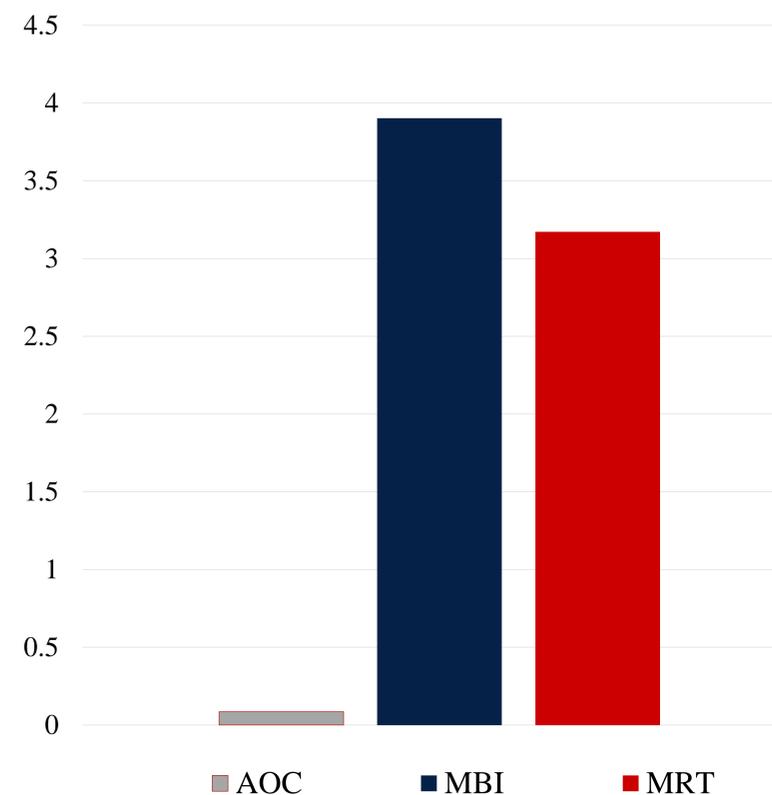
Method

- Participants ($N = 28$) who reported at least moderate generalized anxiety symptoms and moderate muscle discomfort were assigned to one of three groups: a mindfulness-based intervention, muscle-relaxation training, or an assessment-only control
- Participants who participated in the MBI and MRT met weekly with therapists for 15 minutes to learn and practice mindfulness or muscle-relaxation exercises
- Participants in the MBI and MRT groups were instructed to practice an 8-minute or 3-minute mindfulness or muscle-relaxation exercise daily for 21 days
- All participants were asked to fill out an individualized questionnaire daily, in which participants rated their stress and muscle tension before and after completing their mindfulness or muscle-relaxation exercises (assessment-only control rated their muscle tension before and after a short delay)

Hypotheses

- It was hypothesized that those in the brief MBI and MRT groups would experience a greater immediate decrease in muscle tension than those in the assessment-only control
- Additionally, it was hypothesized that those receiving MRT would have a significantly greater immediate decrease in muscle tension than those receiving MBI

Effects of Immediate Practice on Muscle Tension



Results

- Multi-level modeling compared the daily post-homework rated muscle tension to the rated muscle tension prior to the homework practice
- For the MRT group, the average number of days of daily MRT completed was 15.92
- For the MBI group, the average number of days of daily MBI completed was 16.09
- Results indicate a significant main effect of MBI and MRT such that individuals practicing mindfulness meditation ($\Delta b = -3.90, t(24) = 2.76, p = .01$) and those practicing muscle relaxation ($\Delta b = -3.17, t(24) = 2.31, p = .03$) had, on average, a greater immediate decrease in muscle tension when controlling for stress compared to the assessment-only control
- The difference between the mindfulness-based and muscle-relaxation interventions on immediate decrease in muscle tension was not statistically significant

Conclusion

- These results suggest that during daily practice of the intervention, even brief mindfulness-based and muscle-relaxation exercises can have immediate effects on reducing muscle tension in adults with anxiety
- Contrary to hypotheses, muscle-relaxation training did not have a significantly greater immediate decrease in muscle tension than those receiving a mindfulness-based intervention
- Future studies can examine the impact of a variety of factors (e.g., number of times practiced, length of time practiced) on reducing muscle tension in adults with anxiety

