The Effects of Short-Term Mindfulness Meditation on Sustained and Selective Attention

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Background

- Minfulness meditation has been researched heavily over the last 20 years after the rise of Positive Psycholoogy
- Partaking in regular mindfulness meditation is shown to have positive impacts on **sustained** and **selective** attention, especially in the classroom (Chiesa et al., 2011).
- Little research has been done on how these benefits translate to single-sessions, or to online formats

Methods

Participants are randomly sorted into two conditions:

1. Complete a mindfulness meditation (video format), then do the visual search task
2. Just do the visual search task right away

Participants in the **Mindfulness** condition must watch the video and engage with the instructions.

The mindfulness meditation video selected to be included in this study includes **guided breathing**, **body scanning**, and **mindful observation**, which have all been shown to involve intentional regulation of attention (Chiesa et al., 2011).

Attention Task: A shape will appear in the center of the screen.. Participants must press the appropriate button on their keyboard as fast as they can when it appears. There are 10 trials.

Fixation (5–8 Seconds)

+

Press the S key **Press the T key** **Press the C key**

Simulated Results

Reaction time: Welch's t-test, **Accuracy**: Wilcoxon test

Dependent Variable	**Normality** Shapiro-Wilk test	**Homogeneity of Variance** Levene's Test	**Assumption of Independence**
Reaction Time	✓	×	✓
Accuracy	×	✓	✓

Findings:

Welch's t-test results for Reaction Time

Participants in the mindfulness condition (M = 701.67 ms) responded significantly faster than those in the NOmindfulness condition (M = 896.25 ms), $p<0.001$.

Wilcoxon Test results for Accuracy

Participants in the mindfulness condition had significantly higher accuracy scores than those in the NOmindfulness condition, $p<0.001$.

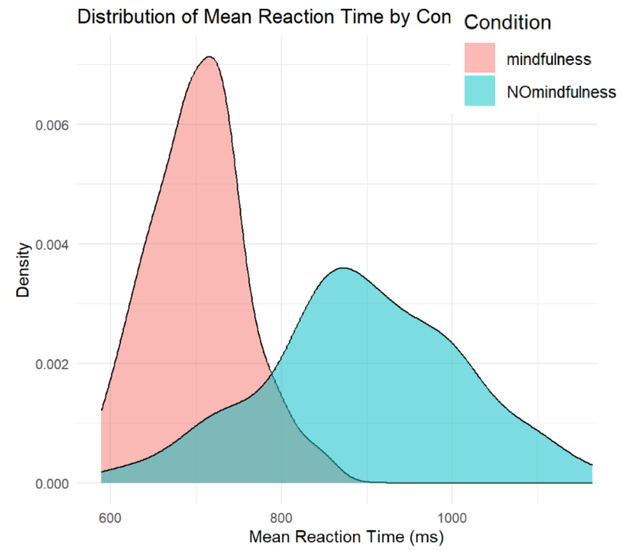
Effect Size for Both

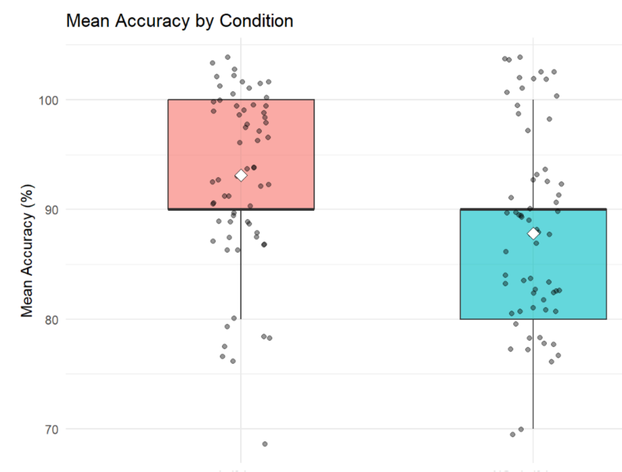
There was a large effect of condition on reaction time ($d = -2.16$) and there was a moderate-to-large effect of condition on accuracy ($d = 0.67$).

Implications

- The results suggest that mindfulness meditations may contribute to a significantly lower reaction time and higher accuracy in sustained and selective attention tasks.
- Studies show that sustained and selective attention are essential for learning at school. (Hobbiss & Lavie, 2024). Online lessons can implement mindfulness tasks at the start to help improve their attention during the lesson (Spadaro & Hunker, 2016).

Data Visualization





References

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3. Spadaro, K. C., & Hunker, D. F. (2016). Exploring the effects of an online asynchronous mindfulness meditation intervention with nursing students on stress, mood, and cognition: A descriptive study. Nurse Education Today, 39, 163–169. https://doi.org/10.1016/j.nedt.2016.02.006

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