# SUSTAINED ATTENTION AND INHIBITORY CONTROL IN PATIENTS EXPOSED TO MINDFULNESS-BASED STRESS REDUCTION

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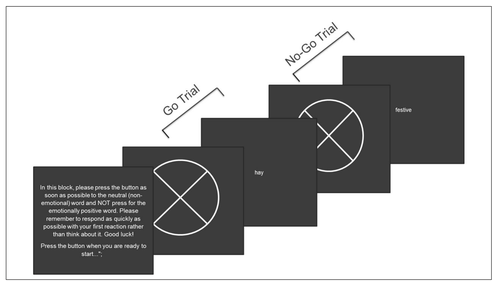
## INTRODUCTION

- Mindfulness-Based Interventions (MBIs) are a family of standardized cognitive and behavioral therapies that focus on cultivating mindfulness-related skills for improving maladaptive cognitive, emotional, and behavioral processes. MBIs have been developed for a wide range of clinical issues and populations in a variety of health settings.
- As the empirical evidence for the efficacy of these interventions continues to grow, the importance of investigating the mechanisms or processes by which they lead to beneficial outcomes is increasingly recognized
- The purpose of the present study was to investigate engagement between MBSR, perceived levels of stress and pain, and performance on an emotional variant of a Go-No-Go task

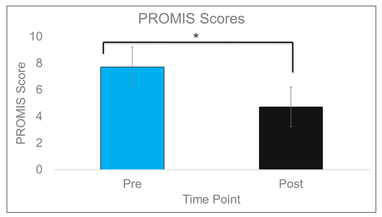
## METHODS

- Pilot data (n = 9) was collected from a multi-site collaboration in individuals with moderate to high levels of stress
- Participants completed the Patient Reported Outcomes Measurement Information System (PROMIS-29) Pain Interference Scale and Perceived Stress Scale (PSS-10), followed by an emotional variant of a Go-No-Go task before and after MBSR
- Perceived levels of stress (PSS-10) and pain interference (PROMIS-29) were measured and analyzed
- Performance of the Go-No-Go task was measured by analyzing:
  - Errors of omission: incorrectly withholding a response to a Go trial
  - Errors of commission: incorrectly responding to a No-Go trial
  - A′: A non-parametric index of sensitivity
  - Coefficient of Variation (CV): variability in reaction time

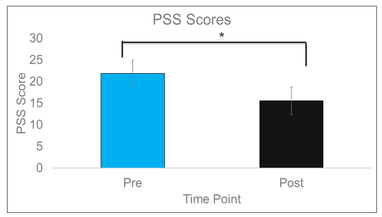



Example of Emotional Go-No-Go run

## FIGURES




Error bars are *SEM*. * Significance $p = .041$

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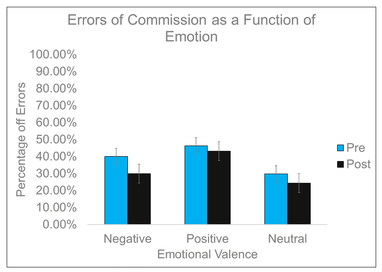


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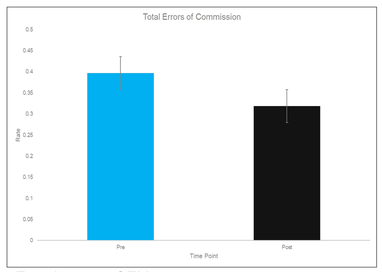


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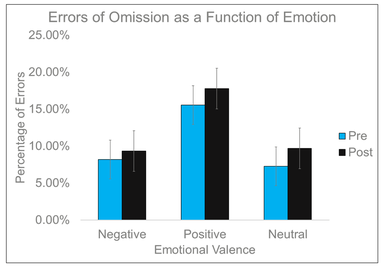


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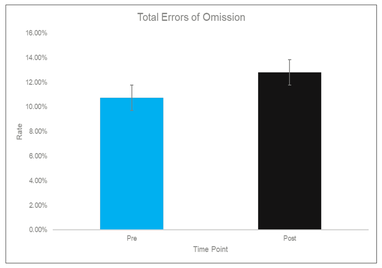


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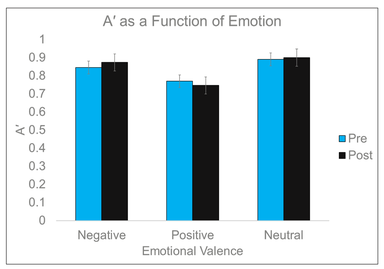


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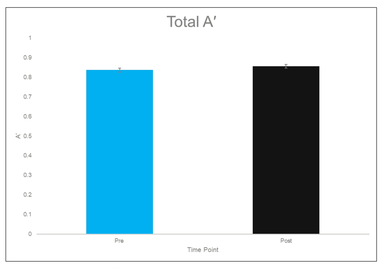


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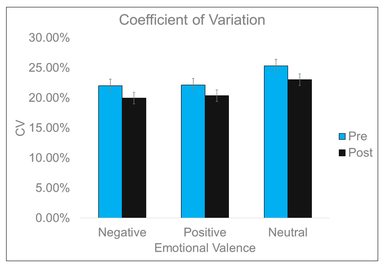


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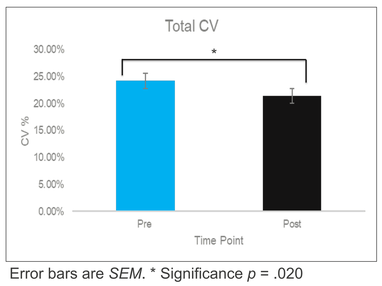


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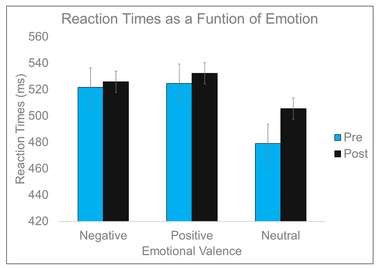


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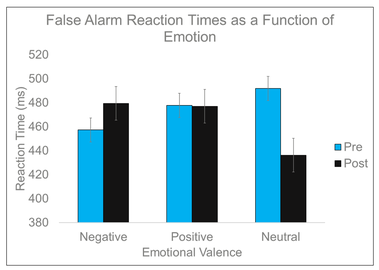


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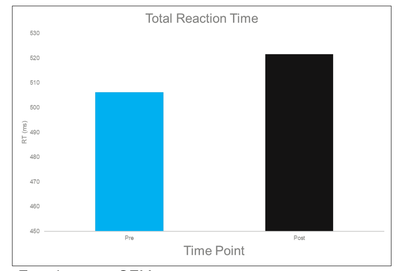


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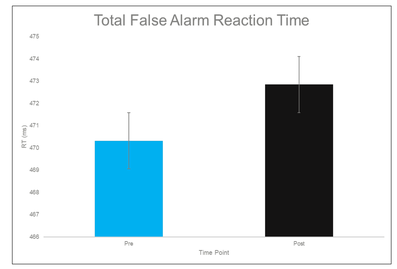


Error bars are *SEM*.

## TABLES

**Correlations Among Post-MBSR PROMIS Scores and Response Variability**

| | PROMIS | Negative CV | Positive CV | Neutral CV |
|---|---|---|---|---|
| **PROMIS** | 1 | | | |
| **Negative CV** | .791 | 1 | | |
| **Positive CV** | .927* | .959** | 1 | |
| **Neutral CV** | .913* | .933 | .988** | 1 |

**Correlation is significant at the .01 level (2-tailed)

*Correlation is significant at the .05 level (2-tailed)

## RESULTS AND CONCLUSIONS

- Preliminary data showed a significant decrease in PSS and PROMIS scores
- Though not significant, there was an increase in errors of omission, and a decrease in errors of commission
- There was a slight increase in A′ for negative and neutral words following MBSR, suggesting participants were better able to distinguish between Go trials and No-Go trials for negative and neutral words after completing MBSR
- There was a significant decrease in CV following MBSR, indicating participants were more consistent in reaction times after completing MBSR
- There was a significant correlation between post-MBSR PROMIS scores and post-MBSR response time variability, suggesting a relationship between perceived pain levels and engagement with the Go-No-Go task
- Taken together, these results suggest MBSR targets self-regulatory mechanisms, leading to changes in perceived stress and pain levels

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