

Differential effects of Mindfulness Meditation vs a control condition on post-stress Heart Rate Variability in students reporting High and Low anxiety: A randomized study

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Introduction: Anxiety disorders are the most common mental health problem in Canada, affecting one in ten persons. Reduced Heart Rate Variability (HRV) through vagal nerve modulations is associated with anxiety and stress related disorder. Mental stress experienced during cognitive tasks can reduce heart rate variability and the regulating effects of the vagus nerve. Although anxiety disorders are associated with reduced HRV, the extent to which resting baseline measures accurately depict anxiety status remains unclear. This study investigates physiological stress reactivity and a post stress Mindfulness Meditation (MM) intervention in individuals with self-reported high anxiety.

Methods; This study closely follows a protocol from a previous study by Azam et al., 2015¹ on perfectionism. Study participants included two groups of undergraduate students with low, or moderate to high anxiety (assessed through the Beck Anxiety Inventory). Individuals were assessed for HRV over the following study phases: baseline, stress task, and a post stress recovery phase. In the post stress phase, participants were randomly assigned to either a brief guided MM audio or to a brief audio description of MM.

Results: Preliminary analyses of HRV data supports the current literature findings that suggest individuals with moderate to high anxiety experience greater vagal withdrawal during a stress task than individuals with lower anxiety. The early findings also suggest that both subgroup may benefit from a post stress mindfulness meditation.

1 Azam, M. A., Katz, J., Fashler, S. R., Changoor, T., Azargive, S., & Ritvo, P. (2015). Heart rate variability is enhanced in controls but not maladaptive perfectionists during brief mindfulness meditation following stress-induction: A stratified-randomized trial. *International Journal of Psychophysiology*, 98(1), 27-34.