A Comparative Study of EMDR and Prolonged Exposure for the Treatment of Posttraumatic Stress Disorder: Does Interoception Moderate Differences in Symptom Reduction?

Kristen Sievert

ABSTRACT

This study aims to compare the efficacy and efficiency of EMDR and prolonged exposure (PE) in the treatment of posttraumatic stress disorder (PTSD) in adults. Both interventions are standardized treatments for PTSD, however, each intervention's mechanism of action are different, with EMDR being classified as a bottom-up psychotherapy model and PE being classified as a top-down psychotherapy model. A second aim of this study is to investigate whether differences in treatment response to EMDR compared to PE is moderated by interoception, a person's ability to be aware of their internal states of their body. To accomplish these goals, a randomized controlled trial will be completed, with participants (adults over 18 meeting *DSM-V* criteria for diagnosis of PTSD) being randomized to either receive EMDR, PE, or a wait-list control for 3 months (weekly sessions, 12 sessions total). Symptoms will be assessed by treatment-blind assessors at posttreatment, and at 3- and 6-months follow-up.

INTRODUCTION

- EMDR and PE are both recommended treatments for PTSD by the International Society of Traumatic Stress Studies (ISTSS). While previous studies have demonstrated both EMDR and PE were effective in PTSD symptom reduction in comparison to minimal intervention, they also indicated EMDR was more efficient than PE in terms of total exposure time to traumatic memories during and between sessions; the number of trauma memories processed over the course of therapy; and time taken to process the primary trauma memory (McGuire Stanbury et al., 2020)
- EMDR is considered a bottom-up psychotherapy intervention while PE is considered a top-down intervention. Top-down interventions are built on an individual's ability to become conscious of their thoughts and their subsequent capacity to change those thoughts, while bottom-up interventions rely on an individual's body sensations an/or movements to access and process trauma (Taylor et al., 2010).
- Interoception refers to the sense that helps individuals understand and feel what is going on inside their body. Having trouble with this sense can also make self-regulation a challenge. Multiple studies have established that differences in interoceptive processing are linked to certain mental health conditions, such as PTSD (Weng et al., 2021).
- This study aims to further investigate differences in bottom-up and top-down psychotherapy interventions for PTSD, while considering how this relates to interoceptive processing. With this, the study hopes to shed more light on the mechanisms of action of PTSD.

PRIMARY AIM AND HYPOTHESES

RQ1: Are there differences in the treatment efficacy of EMDR versus PE in the treatment of adult PTSD?

RQ2: Are there differences in the treatment efficiency of EMDR versus PE in the treatment of adult PTSD?

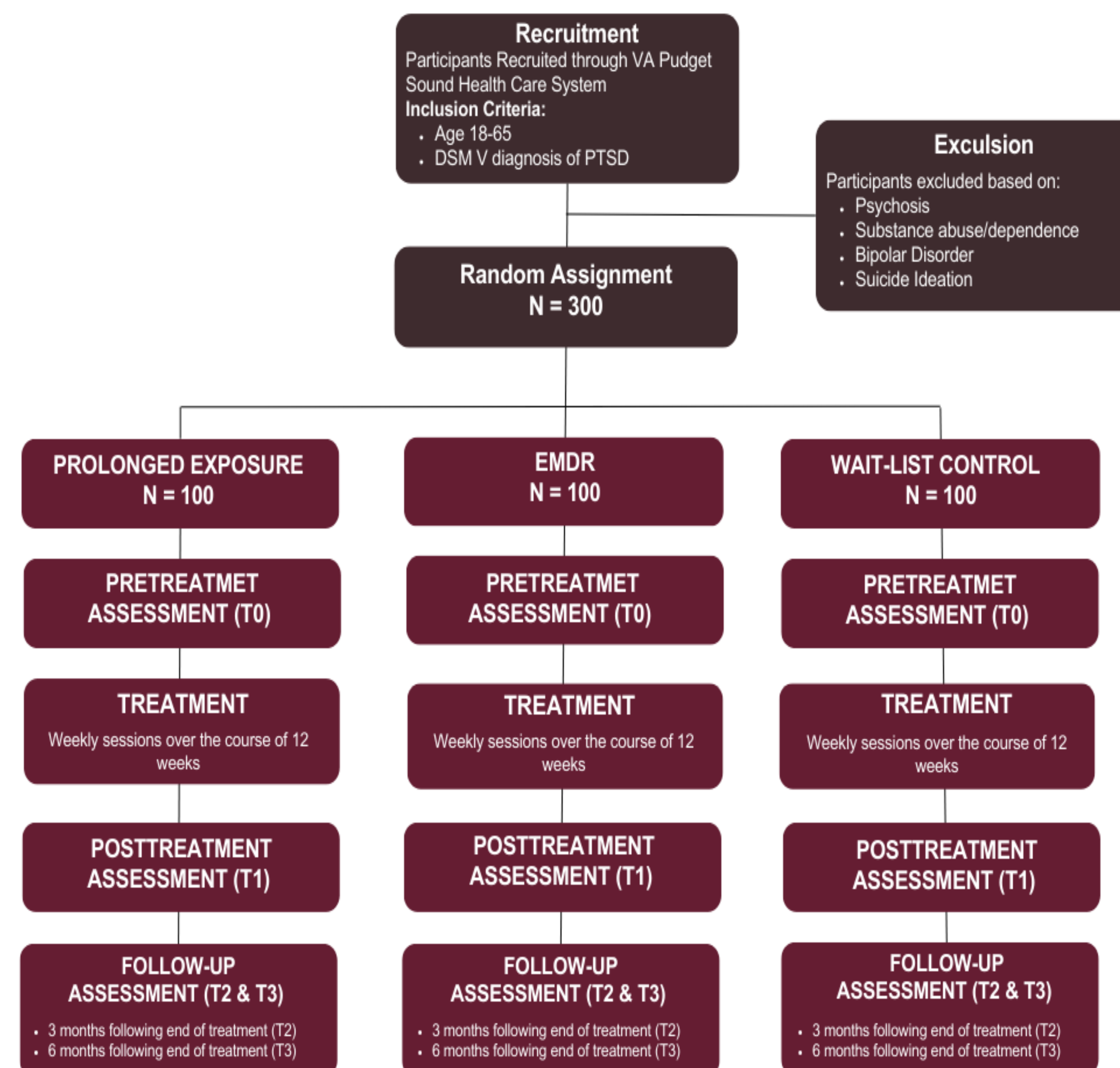
RQ3: If differences in treatment efficacy and/or efficiency exist, does interoception moderate these differences?

H1: There will be no difference in the treatment efficacy of EMDR versus PE in the treatment of adult PTSD.

H2: EMDR will be more efficient than PE in the treatment of adult PTSD.

H3: Interoception will moderate the difference in treatment efficiency between EMDR and PE, with the group receiving EMDR corresponding to greater gains in interoceptive ability than the group receiving PE.

METHODS



MEASURES

- **The Clinician-Administered PTSD Scale (CAPS-5)** – a 30-item questionnaire designed to assess current and lifetime PTSD symptoms for both frequency and severity. CAPS-5 total symptom severity score is calculated by summing severity scores for the 20 *DSM-5* PTSD symptoms. Similarly, CAPS-5 symptom cluster severity scores are calculated by summing the individual item severity scores for symptoms corresponding to a given *DSM-5* cluster: Criterion B (items 1-5); Criterion C (items 6-7); Criterion D (items 8-14); and, Criterion E (items 15-20). A symptom cluster score may also be calculated for dissociation by summing items 19 and 20. To be included in the study, participants need to initially meet at least a Moderate/Threshold severity rating, which suggests the problem satisfies the *DSM-5* symptom criterion and thus counts toward a PTSD diagnosis.
- **PTSD Checklist** – a 20-item self-report questionnaire measuring PTSD symptoms over the past month in accordance with DSM-*V* criteria. *DSM-5* symptom cluster severity scores can be obtained by summing the scores for the items within a given cluster, i.e., cluster B (items 1-5), cluster C (items 6-7), cluster D (items 8-14), and cluster E (items 15-20). A provisional PTSD diagnosis can be made by treating each item rated as 2 = "Moderately" or higher as a symptom endorsed, then following the *DSM-5* diagnostic rule which requires at least: 1 B item (questions 1-5), 1 C item (questions 6-7), 2 D items (questions 8-14), 2 E items (questions 15-20). Initial research suggests that a PCL-5 cutoff score between 31-33 is indicative of probable PTSD across samples.
- **Depression Anxiety Stress Scale (DASS-42)** – a self-report inventory designed to measure states of depression, anxiety, and stress. Items are rated on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Higher scores on each subscale indicate higher levels of depression, anxiety, and stress, with each subscales scores ranging from 0 to 42.
- **The Multidimensional Assessment of Interoceptive Awareness (MAIA – 2)** – an 8-scale state-trait questionnaire with 32 items to measure multiple dimensions of interoception by self-report. Scores are between 0 and 5, where higher score equates to more awareness of bodily sensation. A percentile is also calculated, indicating how the respondent scored in comparison to a normative sample. Interpretation using percentiles helps contextualize scores. For example, percentile below 50 indicate that the individual scored below what is typical. Extreme percentile scores (below 10 or above 90) are of particular clinical significance.

RESULTS

A repeated measures multivariate analysis of variance (repeated measures MANOVA) will be conducted to examine the overall effects of treatment condition (EMDR, PE) on PTSD symptomatology and interoceptive ability over time. Moderated multiple regression (MMR) will be used to determine whether the relationship between the predictor (treatment condition) and the outcome (PTSD symptomatology) depends on a moderating variable (interoceptive ability). All tests will be run in SPSS.

DISCUSSION

- As a clinician, choosing between interventions can often be a difficult process. It is important to understand differences in the efficacy and efficiency of treatment modalities to be able to best match interventions to clients. By better understanding differences in treatment responses following a course of treatment of PE vs. EMDR, clinicians will be better equipped to choose the most suitable intervention when working with clients with PTSD.
- Understanding how interoceptive ability relates to PTSD symptomatology will help researchers shed light onto the relationship between symptoms of PTSD and physiological changes, expanding knowledge of underlying mechanisms of PTSD. This has the potential to improve treatment efficacy across modalities as researchers develop a greater understanding of how the mind-body connection influences PTSD.