2023

The Effects of Prolonged Exposure Therapy on the Symptoms of Patients With Posttraumatic Stress Disorder

Hannah Belle Pontillas
Dominican University of California

https://doi.org/10.33015/dominican.edu/2023.NURS.ST.22

The Effects of Prolonged Exposure Therapy on the Symptoms of Patients With Posttraumatic Stress Disorder

Hannah Belle Pontillas

Department of Nursing, Dominican University of California

NURS 4500: Nursing Research and Senior Thesis

Dr. Patricia Harris

Spring 2023

Abstract

The Diagnostic and Statistical Manual of Mental Disorders or DSM-5 defines posttraumatic stress disorder or PTSD as persistent psychophysiological reactions including intrusive memories of trauma, negative feelings towards such memories, and avoidance of related stimuli—all of which are a direct result of experiencing a traumatic event. The first line of treatment for this particular mental disorder is considered to be prolonged exposure therapy or PE therapy due to its high success rate in treating the symptoms of moderate to severe PTSD as it encourages patients to directly confront and overcome their trauma. However, PE therapy has garnered concern as it has caused patients to drop out before the completion of treatment as a result of symptom exacerbation after repeatedly being reminded of their trauma. Considering this contraindication, this thesis will compare the effectiveness of prolonged exposure therapy to that of psychopharmacotherapy and psychotherapy or combination therapy as alternative treatments for PTSD. A literature review was performed. Six studies that are divided into two categories: prolonged exposure therapy exclusively and combination therapy, were found. The studies of both categories demonstrate how prolonged exposure therapy and combination therapy affect the severity of PTSD symptoms, which ranges from a stagnant change to a moderate decrease in severity. Considering the need for further research on the effectiveness of alternative treatments for PTSD to prevent cases of symptom exacerbation, a research proposal that follows a longitudinal mixed method—qualitative and quantitative—is proposed.

Acknowledgements

I would like to express my deepest appreciation to my family, friends, and significant other for their continuous love, support, and encouragement throughout my journey in nursing school. Lastly, I would also like to thank my thesis advisor, Patricia Harris, who has guided me through the research and writing process of this paper.

Table of Contents

Introduction

Following the experience of a traumatic event, individuals will spontaneously undergo a "range of posttraumatic psychophysiological reactions," which if persistent may lead to posttraumatic diagnoses including post-traumatic stress disorder or PTSD (American Psychological Association, 2017). DSM-5 requires an individual who has personally experienced the traumatic event to exhibit recurring and intrusive traumatic memories, evasion of stimuli connected to the trauma, negative shift in mood relating to the event, and reactivity changes in order to meet the diagnostic criteria to be diagnosed with the previously mentioned disorder (American Psychological Association, 2017).

The treatment of PTSD can involve several types of therapy including cognitive behavioral therapy, cognitive processing therapy, and prolonged exposure therapy in conjunction with pharmacotherapy, particularly selective serotonin reuptake inhibitors. Prolonged exposure or PE therapy is the first line of treatment for PTSD and is implemented in the treatment plan once a patient is assessed and receives an initial counseling session. PE therapy is reported to be a strongly recommended treatment for PTSD by medical health professionals because it lessens the symptoms of the disorder by allowing the patient to learn that the memories, triggers, and situations related to a traumatic event are not threatening in the present time, thus eliminating episodes. This form of therapy involves both imaginal exposure and in vivo exposure. Imaginal exposure consists of the patient detailing the traumatic event in present tense in order to analyze and confront the emotions evoked from the description. In vivo exposure, on the other hand, the patient is challenged to directly confront the feared stimuli related to the traumatic event whether it be a certain place or people such as returning to a similar location where the traumatic event occurred (American Psychological Association, 2017). In conjunction with PE therapy, patients

are also taught breathing techniques in order to manage the anxiety they concurrently experience when they confront their memories during therapy sessions.

Problem Statement

13 percent of United States military members who returned from Iraq and Afghanistan were diagnosed with PTSD in 2013, while the number of veterans receiving care for their diagnosis of PTSD has tripled since 2001 (Eftekhari et al., 2013). In the study conducted by psychologist Afsoon Eftekhari (2013) to examine the efficacy of prolonged exposure therapy, veteran patients received this form of treatment in 8 to 15 sessions after being diagnosed with PTSD from licensed mental health care providers. This study revealed that out of 1,816 patients about 36 percent dropped out of prolonged exposure therapy treatment due to "symptom exacerbation," while an estimate of 41 percent of the patients dropped out for other reasons (Eftekhari et al., 2013). This percentage of patients who dropped out of treatment with reasons related to their disorder suggests that prolonged exposure therapy may worsen the psychotic symptoms of patients, which is one of the concerns found in this form of treatment for PTSD.

Thus, although the first line of therapy recommended for PTSD is prolonged exposure therapy, it has raised concerns due to the risk of potentially exacerbating psychotic symptoms related to the disorder because of the repeated reminder of and exposure to the traumatic event such as what occurred in the previously mentioned study (Van Minnen et al., 2012).

Relevance

According to the American Psychiatric Association, 3.5 percent of adult Americans suffer from PTSD with an 8 percent prevalence in adolescent Americans and twice a greater likelihood of women to be the main group affected (2020). Furthermore, the National Center for PTSD found that women are 10 percent more likely to experience the disorder at some point in their life

compared to men at 4 percent with most cases linked to sexual assault (NAMI, n.d.) Additionally, Latinos, African Americans, and Native Americans are the ethnic groups that are more likely to be affected by PTSD. In 2010, a study examined the ethnic and racial disparities in the lifetime prevalence of PTSD, which was found to be 8.7 percent of African Americans, 7 percent of Hispanics, 7.4 percent of Whites, and 4 percent of Asians (Roberts et al., 2010). In the same study, African Americans, Asians, and Hispanics were found to be "significantly less likely to receive treatment" for symptoms related to their diagnosis of PTSD compared to Whites. The affected population of people living with PTSD, however, can not be represented exactly and accurately considering how many individuals have yet to be professionally diagnosed and can only be depicted by estimated numbers.

Research Question

In patients diagnosed with posttraumatic stress disorder, how effective is the use of prolonged exposure therapy compared with the use of alternative forms of psychotherapy and pharmacotherapy in the treatment of the disorder's distressing symptoms?

Literature Review

Introduction

The research literature of this paper was obtained from the databases of the Dominican Library including PubMed, CINAHL, and ScienceDirect. The keywords used to locate articles relating to the topic included: prolonged exposure therapy, posttraumatic stress disorder, pharmacotherapy, symptom exacerbation, and imaginal exposure. From these databases, six particular primary research articles were found to be closely related to my research question. These research articles explore the efficacy and effects of using prolonged exposure therapy in the treatment of posttraumatic stress disorder.

This literature review is divided into two categories. The first category will concentrate on prolonged exposure or PE therapy, which will explore the findings of research trials that used this form of treatment. The articles in this category demonstrate the changes in symptoms following prolonged exposure therapy in PTSD patients that are represented by the PTSD Checklist for DSM-5 (PCL-5). The second category will focus on combined therapy including pharmacotherapy and other forms of psychotherapy. The articles in this category will dive into the effectiveness of medications with the potential to regulate the symptoms of PTSD in conjunction with receiving psychotherapy. With these two categories, the use of PE therapy alone and combination therapy will be compared based on the increase or reduction of PTSD symptoms. See the Appendix for a literature review summarizing each article.

Category I: Prolonged Exposure Therapy

In this category, there will be three studies that focus on use of prolonged exposure therapy in the treatment of PTSD. These studies examine how the symptoms of patients decreased in severity compared to their initial baseline assessment scores upon receiving this first line of treatment. All three studies aimed to evaluate the efficacy of PE therapy in reducing the symptoms experienced by PTSD patients and explore the possible exacerbation of such symptoms.

In Booysen and Kagee's (2021) quantitative, comparative, and longitudinal study the population of interest were individuals from different socioeconomic and cultural backgrounds who experienced symptoms of PTSD, depression, and anxiety following traumatic events. The sample size included 7 female participants from diverse backgrounds living in South Africa. The baseline assessments of the participants were collected and were asked to share their traumatic experiences in detail before the treatment was initiated (Booysen & Kagee, 2021). The

symptoms of participants were then assessed during, after, and three months upon receiving treatment through the completion of the Posttraumatic Symptom Scale Interview, Beck Depression Inventory-II (BDI-II), and Beck Anxiety Inventory (BAI). In comparison to the baseline results of the participants, there was a moderate decrease in the severity of symptoms relating to PTSD, depression, and anxiety following the completion of PE therapy; however, the participants did report a minor to major increase in distress while receiving treatment (Booysen & Kagee, 2021). The strengths of this study include how there was a follow-up three months after the patients received the treatment to demonstrate the long-term effects of PE therapy. On the other hand, a major limitation to this study is the small sample size that is not an accurate or great representation of the population receiving PE therapy for treatment of PTSD. Another limitation of the sample size is how only women were studied, which restricts the analysis of how PE therapy is effective for the opposite gender.

The second quantitative, comparative, and interventional study by Eftekhari et al. (2013) evaluates the effectiveness of prolonged exposure therapy that is used as the first line of treatment for veterans with PTSD in a large health care system. The population of interest were veterans with a primary diagnosis of PTSD. The sample size involves 1,932 veterans from various periods of war who consented to care and did not require acute crisis stabilization. Veterans Health Administration's mental health care providers received experiential training for prolonged exposure therapy and implemented the treatment into sessions with veteran participants who completed self-report symptom measures for both PTSD and depression after each session, which is referred to as a PCL-5 or a "PTSD Checklist" (Eftekhari et al. 2013). Following this trial, 62.4% of 1,888 patients demonstrated a great improvement from their baseline PCL scores after receiving PE therapy (Eftekhari et al. 2013) . On the other hand, 96%

of patients who presented with moderate to severe depression also demonstrated a great improvement of symptoms (Eftekhari et al. 2013). The strengths of this study were the large sample size of 1,888 veterans who experienced different eras of war and trauma along with the large quantity of licensed mental health clinicians who provided care. The limitations of this study include how there was not a control group to compare the effects of the implemented treatment and how there was not a follow-up on the participants following the study to evaluate the long-term effects of PE therapy.

The third quantitative, comparative, and randomized trial study by Saraiya et al. (2022) compares the effectiveness of clinician-guided and non-guided in vivo exposure therapy with the use of a non-invasive mobile device called BioWare in the treatment of PTSD. In vivo exposure is a form of prolonged exposure therapy that involves a participant to directly confront a personally feared situation, object, or activity (Saraiya et al. 2022). In this case, BioWare allows the participant to confront such fears through virtual reality rather than in person. The population of interest were individuals who met the DSM-5 criteria for the diagnosis of PTSD. With a sample size of 40 participants, the study involved randomly dividing them into two groups that would receive either guided or non-guided in vivo exposure therapy using BioWare through a series of sessions and afterwards be evaluated for an improvement in symptoms. The non-guided group would still be provided the mobile device to use during the in vivo exposure session, but would not receive verbal guidance throughout the treatment from a clinician. Of the 58.97% participants who completed at least eight sessions, the guided group demonstrated a greater decrease in PTSD symptoms compared to the non-guided group (Saraiya et al. 2022). Both groups, however, still exhibited a reduction in their PTSD-related symptoms throughout the course of the treatment (Saraiya et al. 2022). The strengths of this study include how it involved

a control group to compare the effects of two different variations of in vivo exposure therapy and how the cause of the participants' diagnosis of PTSD varied in origin. The limitation of this study is how it had a small sample size of 40 participants compared to previously mentioned study, which results in a more biased conclusion and greater variability of its findings.

Summary of Category I

The three studies demonstrate how prolonged exposure therapy alone without any other form of intervention affected the symptoms of patients with PTSD. Ultimately, all three studies exhibited significant reductions in symptoms of PTSD patients following the implementation of PE therapy. The main strength that was common in all three studies was how the trauma of participants varied in origin, while a common limitation of two studies was a lack of a control group for comparison of results as well as a small sample study size below 50 participants.

Category II: Combination Therapy

In this category, there will be three articles that examine combined therapy, which involves using pharmacotherapy and psychotherapy in contrast with prolonged exposure therapy as treatment for PTSD. The articles in this category essentially delve into the effectiveness of different medications and alternative forms of psychotherapy with the potential to regulate the symptoms of PTSD through the use of randomized trials.

The first quantitative and randomized trial study by Jerome et al. (2020) evaluates the long-term changes in PTSD symptoms following the prescription of 3,4-methylenedioxymethamphetamine or in other words an MDMA in conjunction with psychotherapy in order to potentially combat the drop-out rate from treatment. The population of interest were individuals with moderate to severe chronic PTSD that has persisted for more than

six months and have CAPS-IV scores over 50, all of whom have responded adequately to psychotherapy and pharmacotherapy (Jerome et al. 2020). The sample size included 107 participants from the U.S., Canada, Switzerland, and Israel. This study involved a randomized control group, which received an inactive placebo in conjunction with psychotherapy while the other group received active doses of MDMA ranging in dosages with psychotherapy (Jerome et al. 2020). Near the conclusion of the study, however, every participant received active doses of the medication in either open-label or blinded sessions. The participants were then followed up with an assessment 12 months after the trial. The severity of PTSD symptoms were found to be significantly decreased following the trial of MDMA-assisted psychotherapy compared to the baseline CAPS-IV scores of the participants. 82% of the participants experienced a 15-point or more reduction in CAPS-IV scores indicating a decrease in the severity of their PTSD symptoms (Jerome et al. 2020). The strengths of this study include how it involved a large quantity of participants from various different countries and how it involved a control group to allow for comparison of results. Limitations of this study, on the other hand, is how the sample size involved a total of 107 participants—eight of which dropped out—and was not racially diverse considering how 89.7% of the sample size were Caucasian. Different races and ethnicities may have varied responses to particular medications, thus the lack of racial diversity in this sample size leads to biased findings of this particular medication.

The second quantitative, comparative, and randomized trial study by Rauch et al. (2019) evaluates and compares the effectiveness of PE therapy in conjunction with a placebo, PE therapy in conjunction with sertraline, and sertraline in conjunction with supplemental psychiatric medications. The population of interest were participants who met the DSM-5 criteria for PTSD and who were not in need of acute crisis stabilization. The sample size included 223

patients from four Veterans Affairs medical centers (Rauch et al. 2019). This randomized clinical trial (RCT) involved obtaining a baseline assessment of participants and their PTSD symptoms through a clinician interview and self-report evaluation. Participants received either PE therapy and a prescription of sertraline, PE therapy and a pill placebo, or a prescription of sertraline with other psychiatric medications without PE therapy for a total of 24 weeks (Rauch et al. 2019). Another key element of the study is how neither the clinicians providing the treatment nor the participants were aware of the pill placebo throughout the trial. The symptoms of participants receiving the treatment involving PE therapy and a pill placebo significantly decreased while the participants receiving PE therapy and sertraline as well as sertraline in conjunction with supplemental psychiatric medications without PE therapy did not experience a great decrease in symptoms, which was indicated by their post-treatment PCL scores (Rauch et al. 2019). The strengths of this study are how the sample size involved participants from different sites and a control group to allow for comparison of results. Meanwhile, the limitation of this study is how only combat veterans were evaluated, which produced biased results because the effects of this trial were not applied to other trauma populations.

The third quantitative, comparative, and randomized trial study by Schnurr et al. (2022) compares the efficacy of PE therapy and cognitive processing therapy or CPT in the treatment of PTSD in veterans. The population of interest were veterans with PTSD caused by their experiences during active duty with CAPS-5 scores higher than 25. The sample size involved 916 veterans from 17 different Veteran Affairs outpatient mental health clinics (Schnurr et al. 2022). This randomized trial was designed to provide either CPT or PE therapy to the participants through 12 weekly sessions after retrieving baseline assessments of their symptoms and their severity (Schnurr et al. 2022). Participants were then assessed while receiving treatment

and upon completion treatment including 3 to 6 month follow-up interviews. Both CPT and PE groups experienced a substantial improvement of CAPS-5 scores after completion of treatment (Schnurr et al. 2022). PE therapy was found to have a greater difference in results immediately following treatment and 3 months after; however, it failed to produce the same outcome at the follow-up 6 months after treatment (Schnurr et al. 2022). However, the absolute difference was found to not be clinically significant. The strengths of this study is how it had a large sample size of 916 veterans, all of whom had a variety of traumatic experiences rather than combat alone. The limitation of this study is how the sample size only focused on veterans and how it limits generalized mobility.

Summary of Category II

The studies in this second category analyze the effectiveness of combination therapy in the treatment of PTSD symptoms, which include various forms of psychotherapy and pharmacotherapy. All in all, the first study exemplified how MDMA-assisted psychotherapy produced a great reduction of symptoms, while the second study demonstrated how PE therapy in conjunction with a pill placebo decreased the severity of symptoms compared to other combination therapies involving antidepressants. The third study, on the other hand, revealed how both PE therapy and CPT caused significant improvement of symptoms without a notable difference between the two forms of treatment.

Summary of Literature Review

Overall, the studies included in both categories demonstrate different forms of treatment for the severity of PTSD symptoms including prolonged exposure therapy alone and combination therapy. In the first category, a strength that was shared by all three studies is how the trauma of

participants varied in cause, while shared limitations of two studies were the absence of a control group in order to compare results. There tended to be small sample sizes. In the second category, a strength that was shared by all three studies was the large sample size used while a shared limitation of the second and third studies was how the participants were exclusively veterans. Meanwhile, the first study of the second category lacked racial diversity among its participants. All six studies included in this literature review show how different forms of treatment produce the same desired goal of reducing the severity of PTSD symptoms, with PE therapy taking the lead compared to other variations of treatment. There is a lack of diversity, which limits generalizability to a broader population. Most of the studies focused on the treatment of veterans and their PTSD arising from combat rather than people with trauma arising from other situations. If the samples were more diverse, the findings of each study may have been impacted because the severity of symptoms in PTSD patients vary depending upon their traumatic experiences. Thus, further research is required in order to determine the effectiveness and individual impact of PE therapy.

Research Proposal

Introduction

In the United States alone, 13 million individuals were affected by PTSD in 2020 with 6 percent of the population estimated to experience the disorder (National Center for PTSD, 2014). A form of cognitive behavioral therapy, prolonged exposure therapy is considered to be the first line of treatment used to reduce and potentially completely eliminate PTSD symptoms by helping the patient grasp the idea that the traumatic experience is no longer a threat in present time. Prolonged exposure therapy requires patients to both imagine and directly confront the stimuli related to their trauma. A risk of this form of therapy, however, is an exacerbation of

symptoms in patients due to their constant exposure to the traumatic stimuli that may discourage them from continuing treatment that is reflected by drop out rates.

Research Question

In patients diagnosed with posttraumatic stress disorder, how effective is the use of prolonged exposure therapy compared with the use of cognitive processing therapy (CPT) and pharmacotherapy in the treatment of the disorder's distressing symptoms?

Theoretical Framework

Phil Barker's Tidal Model of Mental Health Recovery will be the primary theory used for this study. This particular model is an exploration of mental health with a philosophical approach by assisting individuals with "reclaim[ing] the personal story of mental distress by recovering their voice" in order to move towards regaining control of their own lives (Barker & Buchanan-Barker, 2009 as cited in Nursing Theory, 2016, para 2). This model is a framework for nursing care practice with a focus on the needs of patients incorporated into curated care plans with an emphasis on the acceptance of the possibility of recovery and how they have every tool they need to heal. Barker's theory claims that the mental health of individuals heavily relies on how they view themselves, their actions, and their overall life experiences in order to amplify their focus on the present (Barker & Buchanan-Barker, 2009 as cited in Nursing Theory, 2016, para 2).

The Tidal Model correlates with the proposed research study because it focuses on ensuring the patient feels in control of their life and remains in the present time rather than the past or future, all of which are important elements in the recovery of individuals with PTSD. The effectiveness of treatment for PTSD lies in the psychological response of individuals and their sense of control when they are reminded of their traumatic experiences such as in prolonged

exposure therapy. In cases of symptom exacerbation, treatment like prolonged exposure therapy may deprive the patients of their sense of control and hinder their path to heal from their trauma. The proposed research study will use the Tidal Model to bring emphasis on the significance of maintaining the patient's sense of control throughout the course of treatment in order to guarantee a successful recovery without the risk of symptom exacerbation.

Primary Research Aim

To compare the efficacy of different forms of treatment for PTSD including prolonged exposure therapy and CPT in conjunction with pharmacotherapy based on symptom exacerbation or lack thereof.

Ethical Considerations

The Dominican University Institutional Review Board (IRB) for Protection of Human Participants will review this study and approval will be acquired prior to collecting data. IRB approval will also be acquired from outpatient mental health clinics, including VA clinics where informational sheets and pamphlets regarding recruitment of candidates will be publicized. Before becoming a participant in the study, informed consent will first be obtained from possible candidates. Informed consent involves giving a comprehensive explanation of the study to the potential candidates and communicating to them how they have the complete autonomy to withdraw themselves as participants of the study at any point without any negative consequences. Participants will also be informed that they have the right to privacy and how their personal data, diagnosis, treatment, and any other information given will remain strictly protected and confidential. A signed consent will then be acquired from willing candidates.

Research Methods

Study Population

The population of interest are individuals with a professional diagnosis of PTSD that meets the criteria of DSM-5 and varies in cause. Two mental health outpatient clinics—including a standard clinic and Veterans Affair clinic—will be selected to recruit patients. The inclusion criteria include: at least 18 years old; not in need of acute crisis stabilization; DSM-5 diagnosis of PTSD; and an experience of moderate to severe symptoms that has caused impairment for at least 3 months. The sample size will include 100 patients receiving treatment for PTSD. The strategy for recruitment involves the clinicians of the outpatient mental health clinics to select eligible participants presently being treated for PTSD with either prolonged exposure therapy or combination therapy. In this study, CPT will be used in conjunction with pharmacotherapy for the combination therapy provided to the participants of the study. CPT is a form of cognitive behavioral therapy that helps patients with PTSD modify their unproductive thought processes and beliefs related to the traumatic event to develop more adaptive strategies for healing (American Psychological Association, 2017). Clinicians will then provide them with a concise introduction to the study and an informational pamphlet with further details concerning their role and rights during the patient's treatment session. An informational sheet about the study will also be posted on bulletin boards of waiting rooms for patients to view. Contact information will be included in the informational pamphlets and sheets that patients can use to seek more details of the study and to express interest to participate in the study.

Study Design and Methodology

This study will use a longitudinal comparative mixed method (qualitative and quantitative), which will be conducted for a course of one entire year in order to determine the effectiveness of treatment and longevity of its desired effects. A survey will be completed by the

participants prior to the start of the study in order to gather information about them including: age, gender, ethnicity, cause of trauma, length of time passed since being professionally diagnosed, symptoms experienced relating to their diagnosis, and types of treatments received prior. The demographic and comprehensive information included in this survey will be used in the evaluation of treatment results in determining if there were any of these factors that may have contributed to the conclusion of such results.

The participants receiving either prolonged exposure therapy or pharmacotherapy and CPT will complete both a survey and PCL-5 at various stages of the study such as 3 months, 6 months, 9 months, and upon completion of an entire year of treatment. The PCL-5 is a PTSD checklist that asks the participant a list of questions relating to their symptoms, in which they will rate the severity of their symptoms ranging from 1 to 4 that represent not at all, a little bit, moderately, quite a bit, to extremely that produces a total number. The higher the number upon completion of the PCL-5, the more severe their symptoms are. The surveys, on the other hand, contain similar questions but will allow the patient to further explain their responses to treatment in detail unlike the PCL-5, which only asks them to rate their symptom severity. The frequency of the surveys and PCL-5 will allow for evaluation of the changes in the severity of symptoms such as whether it has been reduced, exacerbated, or remained stagnant throughout the course of the study and whether the treatment produces long-term effects. The survey will consist of the following questions pertaining to their symptoms upon receiving treatment:

1. Have you found yourself less or more fearful of your traumatic stressor? If so, why?
2. Have you experienced a decrease or increase in recurring intrusive thoughts or flashbacks of your traumatic experience? If so, why?
3. Do you find yourself to be less or more anxious? If so, why?

4. Do you find yourself to experience less or more episodes of depression? If so, why?
5. Do you find yourself having less or more quality sleep? If so, why?
6. Is it difficult for you to fall asleep? If so, why?
7. Are you experiencing a decrease or increase in nightmares relating to your traumatic experience? If so, why?
8. Are you experiencing a decrease or increase in physical sensations including trembling, nausea, sweating, or pain? If so, why?
9. Do you find yourself being less or more often detached from reality? If so, why?

Upon completion of an entire year of treatment, the participants will then be interviewed to establish whether the treatment met their needs in order to recover. The interview will consist of asking them whether the treatment was effective in reducing or eliminating their symptoms, if they would recommend the form of treatment received to other patients with PTSD, and if they feel as if they should have received another form of treatment different from the one they received.

Study Analysis

Demographic data will be assessed using descriptive statistics. Using the PCL-5 scores of the participants from the beginning and end of the study to establish the quantitative data of the study, a t-test will be used to compare both the baseline and final scores of the participants as well as the means between the two groups that received different forms of treatment. The t-test will help determine whether prolonged exposure therapy or combination therapy is more effective in treating the symptoms of PTSD.

The qualitative data will be assessed through the content analysis of their open-ended responses on surveys and final interviews. The analysis of the surveys and interviews will

determine any common experiences or perceptions of the participants throughout the study that can be used to improve future clinical practice and take in any considerations to prevent the possibility of symptom exacerbation.

Based on the findings in the literature review, the two groups receiving either PE therapy or combination therapy are both expected to experience a moderate decrease in the severity of their symptoms. Meanwhile, those receiving combination therapy are expected to have a slightly reduced risk of both experiencing symptom exacerbation and reporting episodes of distress during treatment.

Conclusion

Posttraumatic stress disorder (PTSD) can result from various causes of traumatic experiences and affect different demographics around the world. The manifestations of PTSD can be debilitating for diagnosed individuals and without proper treatment, many are left to face the haunting memories of their trauma. The studies in the literature review discuss the effects of both prolonged exposure therapy exclusively and combination therapy. PE therapy was found to significantly decrease the severity of symptoms in PTSD patients; however, the study conducted by Eftekhari et al (2013), in particular demonstrated that a portion of participants receiving PE therapy dropped out as a direct result of symptom exacerbation. Although prolonged exposure therapy is often used to treat and potentially eliminate the symptoms of PTSD, a great number of patients have been found to drop out before completing the course of treatment due to symptom exacerbation. Combination therapy produced similar results as patients who received this form of treatment also exhibited a decrease in symptom severity. Therefore, the studies included in the literature review reveals both the benefits and risks of receiving either PE therapy or combination therapy, which should be taken into consideration when planning treatment for PTSD patients.

Americans are increasingly being exposed to traumatic experiences related to school shootings, sexual and physical assault, abuse, being witnesses of violence, combat in war, and natural disasters. When treating PTSD patients, mental health care professionals must understand that the care provided must be tailored to fit the specific needs of each patient. Although prolonged exposure therapy is considered to be the first line of treatment for PTSD, it may not be the best option for every patient because each individual experiences a different level of symptom severity that can potentially be exacerbated from this form of treatment. Further research is needed to provide patients who fear the risk of symptom exacerbation, with alternative treatments to reduce dropouts from treatment and instead increase the number of individuals regaining control of their lives.

References

American Psychiatric Association. (2020, August). *What Is PTSD?* Psychiatry.org. https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

American Psychological Association. (2017). CLINICAL PRACTICE GUIDELINE for the Treatment of PTSD Guideline Development Panel for the Treatment of Posttraumatic Stress Disorder in Adults Adopted as APA Policy. https://www.apa.org/ptsd-guideline/ptsd.pdf

American Psychological Association. (2017, May). Cognitive Processing Therapy (CPT). *Https://Www.apa.org*.https://www.apa.org/ptsd-guideline/treatments/cognitive-processing-therapy

American Psychological Association. (2017). Prolonged Exposure (PE). *Https://Www.apa.org*.https://www.apa.org/ptsd-guideline/treatments/prolonged-exposure

Barker, P., & Poppy Buchanan-Barker. (2009). *The Tidal model : a guide for mental health professionals*. Routledge.

Booysen, D. D., & Kagee, A. (2021). Preliminary effectiveness of brief prolonged exposure therapy for PTSD: Expanding access to effective therapies. *Clinical Case Studies*, *20*(6), 482–497. https://doi.org/10.1177/15346501211017989

Eftekhari, A., Ruzek, J. I., Crowley, J. J., Rosen, C. S., Greenbaum, M. A., & Karlin, B. E. (2013). Effectiveness of National Implementation of Prolonged Exposure Therapy in Veterans Affairs Care. *JAMA Psychiatry*, *70*(9), 949. https://doi.org/10.1001/jamapsychiatry.2013.36

Jerome, L., Feduccia, A. A., Wang, J. B., Hamilton, S., Yazar-Klosinski, B., Emerson, A., Mithoefer, M. C., & Doblin, R. (2020). Long-term follow-up outcomes of MDMA-assisted psychotherapy for treatment of PTSD: a longitudinal pooled analysis of six phase 2 trials. *Psychopharmacology*, *237*(8), 2485–2497. https://doi.org/10.1007/s00213-020-05548-2

National Center for PTSD. (2014). *How Common is PTSD in Adults? - PTSD: National Center for PTSD*. Va.gov. https://www.ptsd.va.gov/understand/common/common_adults.asp

Nursing theory. (2016). *Barker's tidal model of mental health recovery - nursing theory*. Nursing Theory.https://nursing-theory.org/theories-and-models/barker-tidal-model-of-mental-health-recovery.php

PTSD is More Likely in Women Than Men | NAMI: National Alliance on Mental Illness. (n.d.). https://www.nami.org/Blogs/NAMI-Blog/October-2019/PTSD-is-More-Likely-in-Women-Than-Men

Rauch, S. A. M., Kim, H. M., Powell, C., Tuerk, P. W., Simon, N. M., Acierno, R., Allard, C. B., Norman, S. B., Venners, M. R., Rothbaum, B. O., Stein, M. B., Porter, K., Martis, B., King, A. P., Liberzon, I., Phan, K. L., & Hoge, C. W. (2019). Efficacy of Prolonged Exposure Therapy, Sertraline Hydrochloride, and Their Combination Among Combat Veterans With Posttraumatic Stress Disorder: A Randomized Clinical Trial. *JAMA Psychiatry*, *76*(2), 117–126. https://doi.org/10.1001/jamapsychiatry.2018.3412

Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2010). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*, *41*(01), 71–83. https://doi.org/10.1017/s0033291710000401

Saraiya, T. C., Jarnecke, A. M., Rothbaum, A. O., Wangelin, B., McTeague, L. M., Acierno, R., Brown, D. G., Bristol, E., Feigl, H., Reese, M., Cobb, A. R., Harley, B., Adams, R. J., & Back, S. E. (2022). Technology-enhanced in vivo exposures in Prolonged Exposure for PTSD: A pilot randomized controlled trial. *Journal of Psychiatric Research*, *156*, 467–475. https://doi.org/10.1016/j.jpsychires.2022.10.056

Schnurr, P. P., Chard, K. M., Ruzek, J. I., Chow, B. K., Resick, P. A., Foa, E. B., Marx, B. P., Friedman, M. J., Bovin, M. J., Caudle, K. L., Castillo, D., Curry, K. T., Hollifield, M., Huang, G. D., Chee, C. L., Astin, M. C., Dickstein, B., Renner, K., Clancy, C. P., & Collie, C. (2022). Comparison of Prolonged Exposure vs Cognitive Processing Therapy for Treatment of Posttraumatic Stress Disorder Among US Veterans. *JAMA Network Open*, *5*(1), e2136921. https://doi.org/10.1001/jamanetworkopen.2021.369

Appendix A: Literature Review Table

Authors/ Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Booysen & Kagee (2021)	To evaluate both the efficacy and feasibility of PE therapy for PTSD patients from a wide range of socio-cultural backgrounds.	The population of interest were individuals from different socioeconomic and cultural backgrounds who experienced traumatic events and reported symptoms of PTSD, depression, and anxiety following the events. The sample size involved 7 female participants of different ages and backgrounds living in South Africa.	Quantitative, Interventional, Comparative, Longitudinal	The baseline assessments of the participants were first collected prior to the start of treatment. The symptoms of participants were then assessed during treatment, after treatment, and finally three months following treatment through the completion of the Posttraumatic Symptom Scale Interview, Beck Depression Inventory-II (BDI-II), and Beck Anxiety Inventory (BAI).	Compared to the baseline results of the participants, there was a moderate decrease in severity of PTSD, depression, and anxiety symptoms following the completion of PE therapy. However, the participants did report a minor to major increase in distress while receiving treatment.	The strengths of this study include how there was follow-up three months after the patients received the treatment and how all of whom experienced unique traumatic events.	The small sample size of the study is not an accurate or great representation of the population receiving PE therapy for treatment of PTSD. The sample size is also biased, considering how only women living in South Africa were studied.
Eftekhari et al (2013)	To evaluate the effectiveness of prolonged exposure therapy that is used in the treatment of veterans with PTSD in	The population of interest were veterans who had a primary diagnosis of PTSD. The sample size is 1,932 veterans from various wars who consented to	Quantitative, Comparative, Interventional	VHA mental health care providers received experiential training for PE and implemented the therapy into	Following this trial, 1,179 out of 1,888 patients or 62.4% demonstrated a great improvement from their baseline PCL scores after receiving PE therapy. On the other hand, 1,816 patients	The strengths of this study were the large sample size of 1,932 veterans who experienced different eras of war and the large quantity of licensed mental health clinicians who provided care.	The limitations of this study include how there was a lack of a control group to compare the effects of the treatment provided and how there was not a follow-up on the participants following the study to evaluate the long-term effect of PE therapy.

Authors/ Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
	a large health care system.	care and did not require acute crisis stabilization.		sessions with veteran participants who completed self-report symptom measures for both PTSD and depression after sessions, which is referred to as a PCL-5 or a "PTSD Checklist."	who presented with moderate to severe depression also demonstrated a great improvement of symptoms.		
Jerome et al (2020)	To evaluate the long-term changes in PTSD symptoms following the prescription of 3,4-methylenedioxymethamphetamine MDMA in conjunction with psychotherapy in order to potentially combat the drop-out rate from treatment.	The population of interest were individuals with moderate to severe chronic PTSD that has persisted for more than six months and have CAPS-IV scores over 50, all of whom have responded adequately to psychotherapy and pharmacotherapy. The sample size included 107 participants from the U.S., Canada, Switzerland, and Israel.	Quantitative randomized trial	This study involved a randomized control group, which received an inactive placebo in conjunction with psychotherapy while the other group received active doses of MDMA ranging in dosages with psychotherapy. Towards the end of the trial, every participant	The severity of PTSD symptoms were found to be significantly decreased following the trial of MDMA-assisted psychotherapy compared to the baseline CAPS-IV scores of the participants. 82% of the participants experienced a 15-point or more reduction in CAPS-IV scores.	The strengths of this study include how it involved a sample size with participants from different countries and how it involved a control group to allow for comparison.	Limitations of this study is how the sample size was only 107 participants—eight of which dropped out—and was not racially diverse considering how 89.7% of the sample size were Caucasian.

Authors/ Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
				received active doses of the medication in either open-label or blinded sessions. The participants were then followed up with an assessment 12 months after the trial.			
Rauch et al (2019)	To evaluate and compare the effectiveness of PE therapy in conjunction with a placebo, PE therapy in conjunction with sertraline, and sertraline in conjunction with supplemental psychiatric medications.	The population of interest were participants who met the DSM-5 criteria for PTSD and who were not in need of acute crisis stabilization. The sample size involved 223 patients from four different VA medical centers.	Quantitative, and comparative randomized trial	This quantitative randomized clinical trial (RCT) involved obtaining a baseline assessment of the PTSD symptoms of participants through both a clinician interview and self-report. For 24 weeks, participants received either PE therapy and a prescription of sertraline, PE therapy and a pill	The PTSD symptoms of participants receiving PE therapy and pill placebo were significantly reduced while the participants receiving PE therapy and sertraline or sertraline in conjunction with supplemental psychiatric medications without PE therapy did not experience a significant decrease in symptoms based on PCL scores.	The strength of this study includes how the sample size involved participants from various sites and how it involved a control group to allow for comparison of results.	The limitation of this study is how only combat veterans were evaluated, which produced biased results because the effects of this trial were not applied to other trauma populations.

Authors/ Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
				placebo, or a prescription of sertraline with other psychiatric medications without PE therapy. Neither the clinicians providing the treatment or the participants were aware of the pill placebo.			
Saraiya et al (2022)	To compare the effectiveness of clinician-guided and non-guided in vivo exposure therapy—a type of PE therapy—with the use of a non-invasive mobile device (BioWare) in the treatment of PTSD.	The population of interest were individuals who met the DSM-5 criteria for the diagnosis of PTSD. The sample size involved 40 participants.	Quantitative and comparative randomized trial	The 40 participants were randomly divided into two groups who would either receive guided or non-guided in vivo exposure therapy through a series of sessions and afterwards be evaluated for an improvement in symptoms. The non-guided group would still be provided the mobile device to use during the	Of the 58.97% participants who completed at least eight sessions, the guided group demonstrated a greater decrease in PTSD symptoms compared to the non-guided group. Both groups, however, still exhibited a reduction in their PTSD symptoms throughout the course of the treatment.	The strengths of this study includes how it involved a control group to compare the effects of two different forms of in vivo exposure therapy and how the participants' PTSD varied in cause.	The limitation of this study is how it had a small sample size, which results in a more biased conclusion of its findings.

Authors/ Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
				therapy session, but would not receive personal guidance from a clinician.			
Schnurr et al (2022)	To compare the efficacy of prolonged exposure therapy (PE) and cognitive processing therapy (CPT) in the treatment of PTSD in veterans.	The population of interest were veterans diagnosed with PTSD relating to their military service experiences with CAPS-5 scores higher than 25. The sample size involved 916 veterans from 17 different VA outpatient mental health clinics.	Quantitative and comparative randomized trial	This randomized trial involved providing either CPT or PE therapy to the participants in 12 weekly sessions after retrieving baseline assessments. Participants were then assessed while receiving treatment and upon completion treatment including 3 to 6 month follow-up interviews.	Both CPT and PE groups experienced a substantial improvement of CAPS-5 scores after completion of treatment. PE therapy was found to have better results post-treatment and after 3 months, but did not produce the same result at the 6 month follow up. However, the absolute difference was found to not be clinically significant.	The strengths of this study include how it involved a large sample size of 916 veterans, all of which experienced a variety of traumatic experiences rather than combat alone.	The limitation of this study is how the sample size only involved veterans, most of which being men at 80% of the sample. This study also limits generalized mobility.