

**Effectiveness of Prolonged Exposure Therapy vs. Cognitive Processing Therapy in
Veterans with Post-Traumatic Stress Disorder: A Systematic Review Systematic Review**

An EBP Capstone Project submitted to the St. David's School of Nursing at Texas State
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Abstract

Introduction: Traumatic events, especially in combat veterans, can lead to post-traumatic stress disorder (PTSD), impacting mental health and overall functioning. This systematic review compares the effectiveness of two evidence-based trauma-focused psychotherapies, prolonged exposure therapy (PE) and cognitive processing therapy (CPT), in treating PTSD among recent military campaign veterans. Both PE and CPT are endorsed in the current VA/DoD guideline, with PE involving the gradual exploration of trauma memories and CPT addressing negative thoughts. **Methods:** Utilizing Neuman's Systems Theory, this systematic review examines eight diverse study designs, encompassing quasi-experimental trials, retrospective studies, and randomized controlled trials. A systematic literature review was conducted using specific search terms across seven databases. The selection process resulted in eight relevant articles. **Results:** PE emerges slightly more effective in six studies, while two studies suggest a slight advantage for CPT. Factors influencing outcomes include treatment timing, session completion, and patient choice. Both therapies exhibit positive impacts on veterans, emphasizing adaptability and individualized approaches. **Discussion:** This systematic review addresses the urgency of effective treatments for veterans with PTSD, exploring the advantages and limitations of PE and CPT. The findings give evidence of the importance of individualized approaches and highlight the need for further research to inform personalized interventions.

Keywords: veterans, post-traumatic stress disorder, prolonged exposure therapy, cognitive processing therapy, systematic review

Effectiveness of Prolonged Exposure Therapy vs. Cognitive Processing Therapy in Veterans with Post-Traumatic Stress Disorder: A Systematic Review

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision, traumatic events are defined as experiences involving direct or indirect exposure to actual or impending situations of death, severe injuries, or sexual violence (American Psychiatric Association, 2022). Among those who face such traumatic experiences, combat veterans are a high-risk group for developing post-traumatic stress disorder (PTSD) (Department of Veterans Affairs Department of Defense, 2023). Recent findings from our Iraq and Afghanistan wars have been alarming, with 29.3% of veterans screening positive for PTSD, 26.3% reporting suicidal thoughts, and 26% experiencing substance use disorder (Na et al., 2022).

While extensive research has explored the mental health and well-being of Vietnam-era veterans, a pressing need exists for updated treatment options that address veterans from more recent military campaigns. This systematic review examines and assesses the comparative effectiveness of two evidence-based trauma-focused psychotherapies, prolonged exposure therapy (PE) and cognitive processing therapy (CPT), for veterans battling PTSD. This review aims to provide healthcare providers with current, evidence-based options for treating PTSD and improving patient outcomes.

Background and Significance

PTSD can have life-altering consequences for veterans who have experienced traumatic events during their service. This complex mental health condition is associated with various challenges, including mood disorders, substance use, and impaired functioning (Department of Veterans Affairs Department of Defense, 2023). Among veterans struggling with PTSD, approximately 70% receive an additional diagnosis of at least one other psychiatric condition, with major depressive disorder and anxiety disorders being the most prevalent (Hefner &

Rosenheck, 2019). These insights shed light on the impact of PTSD on veterans and highlight the need for specialized and holistic care.

According to the VA/DoD Clinical Practice Guideline for managing PTSD, the most effective treatments currently available include psychotherapy, medication, and meditation (Department of Veterans Affairs Department of Defense, 2023). This review focuses on two trauma-focused psychotherapies: PE, which involves gradually exploring memories, emotions, and situations that have been avoided since the traumatic event. The psychotherapist engages the patient in discussing the trauma and encourages re-engagement in activities previously avoided in a 90-minute session (Department of Veterans Affairs Department of Defense, 2023). CPT is also therapist-guided, examines negative thoughts, and utilizes worksheets to change the patient's responses to distressing thoughts and emotions in a 60–90-minute session (Department of Veterans Affairs Department of Defense, 2023). Both treatments typically span 8 to 16 sessions, centering on trauma-focused care.

Review of the Literature

A systematic review and meta-analysis conducted by Cusack et al. (2015) evaluated psychological therapies' comparative efficacy and adverse effects for adults with PTSD. This study analyzed data from 64 randomized control trials, including 370 participants in PE and 119 in CPT for combat-related PTSD across settings, such as clinical facilities or research institutions. The severity of PTSD was assessed before and after treatment using the Clinician-Administered PTSD Scale for DSM-5. PE demonstrated high evidence for improving PTSD and moderate evidence for reducing the PTSD diagnosis (Cusack et al., 2015). CPT exhibited moderate evidence for decreasing PTSD symptoms and the loss of diagnosis (Cusack et al., 2015). The meta-analysis indicated that PE and CPT had the most substantial evidence for effectiveness in managing PTSD and its symptoms (Cusack et al., 2015). The study concluded

that there is a need for further comparisons of treatments and whether specific treatment approaches are more or less effective. While this systematic review encompassed a substantial number of articles and psychotherapies related to the treatment of PTSD in veterans, it was limited in the available literature on PE therapy. Future research should include PE treatment effectiveness factors and consider patient preferences to offer more personalized and tailored care.

Jeffreys et al. (2013) examined the effectiveness of CPT and PE therapy on veterans with PTSD symptoms. This retrospective chart review included 517 charts from a Veterans Health Administration specialty clinic, with 178 CPT treatment and 85 treated with PE. Both therapies significantly reduced Post-traumatic Stress Disorder Checklist scores, with PE demonstrating greater effectiveness than CPT, considering age, service era, and ethnicity (Jeffreys et al., 2013). However, CPT formats showed reduced dropouts among older veterans and no notable outcome differences between Hispanic and White veterans (Jeffreys et al., 2013). This study emphasized the need for future research, particularly randomized trials, due to the limited literature comparing CPT and PE in veterans.

Additionally, a comprehensive four-year longitudinal qualitative study by Cook et al. (2014) explored the adaptation of PE and CPT within the Veteran Health Administration. The study engaged 179 providers from 38 U.S. Department of Veterans Affairs residential treatment programs. The study showed that utilization of PE and CPT has increased in many PTSD programs, although some still refrain from using PE. Moreover, nearly 70% of these programs have integrated CPT, either partially or entirely, into their protocols (Cook et al., 2014). It is worth noting that more providers were trained in CPT than PE. This study also highlighted the need for further research in the context of PE for PTSD treatment and appropriateness for

individual patients. Future research in these areas can advance the knowledge of providers implementing evidence-based treatments like PE for PTSD, improving patient outcomes.

Purpose and Clinical Question

Updating research on veterans from recent military campaigns is essential for providing relevant and practical support and care. Providers need to be aware of the most up-to-date practices. When treating veterans, we must acknowledge the changes in warfare, evolving demographics, and advancements in mental health treatment to benefit the well-being of service members and veterans. The purpose of this systematic review is to address the following clinical question:

"Among veterans diagnosed with post-traumatic stress disorder, is prolonged exposure therapy more effective than cognitive processing therapy in reducing PTSD symptoms and improving overall mental health outcomes?"

Conceptual Framework

Neuman's Systems Theory provides a valuable framework for evaluating the effectiveness of these two therapeutic approaches, with the primary goal of promoting health and well-being. This holistic theory includes the core concepts, including systems, stressors, adaptation, and prevention (Reed, 1993). In this framework, the veteran is the complex system, and PTSD can affect various aspects of their life or system. The stressors that come into play include intrusive thoughts and memories, hyperarousal, avoidance behaviors, changes in mood and cognition, emotional dysregulation, hypervigilance, social isolation, and difficulties in coping (American Psychiatric Association Publishing, 2022). Psychotherapies like PE and CPT are crucial tools in helping veterans adapt to these stressors and prevent worsening symptoms.

Methods

Project Design

The design of this project is a systematic review of the literature accomplished by carefully reviewing existing research on the effectiveness of PE and CPT in the treatment of veterans with PTSD. Integrating Neuman's Systems Theory into this design welcomes a more holistic and patient-centered approach to care. This approach acknowledges the veteran as an integral part of a broader system and considers their unique needs and challenges.

Search Strategy

The search strategy used to gather articles included these keywords: “prolonged exposure therapy,” “cognitive processing therapy,” “veterans,” “post-traumatic stress disorder,” “posttraumatic stress disorder,” “PTSD symptoms,” “United States,” and “us veterans.” The databases searched for related articles include CINAHL Ultimate, DSM-5 Library & DSM Legacy, Oxford Academic, ScienceDirect, PTSDpubs, Medline, and PubMed.

The articles included in this systematic review met a specific standard to ensure quality. Inclusion included primary research published between 2017 and 2023, including the topic of PE and CPT for veterans with PTSD, published in English, United States veterans, and peer reviewed. The exclusion criteria included articles that did not use either the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) or Post-traumatic Stress Disorder Checklist for DSM-5 (PCL-5) recommended screening tools, along with studies falling into categories of news, editorials, case reports, brief reports, article commentaries, and discussions.

To assess the quality of the articles chosen, the Rapid Critical Appraisal Checklists were used to evaluate the reliability and validity of the research. The checklists included randomized clinical trials and quasi-experimental articles with a 6 out of 12 cutoff score. The purpose of this search strategy was to gather the most up-to-date, relevant, and reliable information on the effectiveness of PE and CPT for veterans with PTSD.

Selection Process

In this systematic review, a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram (see Figure 1) visually demonstrates the process of screening and selecting articles. The initial search involved specific search terms across seven databases, resulting in a substantial number of initial articles. A systematic review process was afterward applied to exclude content that did not meet predefined criteria, such as publication date, language, country of origin, and study type. This refined the number of documents for review. Following a title review, a selection of articles was deemed eligible for complete retrieval and examination. Studies were then excluded based on their abstract and relevance to the target population, duplicates were removed, and articles with a low veteran-to-civilian population ratio were excluded. This thorough process ultimately identified a subset of articles that met the inclusion criteria for the systematic review.

The entire search process, including database searches, title, abstract, and full-text reviews, was conducted by a single individual. This ensured consistency and adherence to the established criteria throughout the selection process. The PRISMA website was used as a resource, including a Flow Diagram template used to structure and document the review process (Page et al., 2021). This systematic review process resulted in the selection of eight relevant articles for inclusion in the systematic review.

Synthesis Method

The Evidence Synthesis Table (see Table 1) was valuable in systematically obtaining pertinent information from the selected articles and analyzing the data. This table included author and year, purpose, framework, design, sample/setting, method, study findings, quality appraisal/limitations, and conclusions/application. Once the data from the articles were inputted, the table allowed for an organized comparison of each article to create a conclusion relevant to the research question. It facilitated the identification of recurring themes, key findings across

articles, appraisals, and limitations contributing to the comparative effectiveness of PE and CPT for veterans with PTSD.

Results

Search Results

For this systematic review, the flow diagram (see Figure 1) illustrates the process of screening and selecting articles. The initial search strategy utilized specific search terms across seven databases, yielding 3,510 initial articles. These databases included CINAHL Ultimate (52 articles), DSM-5 Library & DSM Legacy (124 articles), Oxford Academic (1,489 articles), ScienceDirect (1,699 articles), PTSDpubs (13 articles), Medline (125 articles), and PubMed (8 articles). Afterward, an orderly review process was applied to exclude irrelevant content, such as articles not meeting criteria based on publication date, language, country of origin, and study type, such as news articles, editorials, case reports, brief reports, and non-academic books removing 2,460 articles. This exclusion refined the number of documents to 1,050. The remaining documents underwent a title review, leading to the exclusion of 990 articles. Following this review, 60 articles were deemed eligible for complete retrieval and were accessible. Of these, 35 articles were excluded based on their abstract and relevance to the target population, 12 were duplicates, and five had a low veteran-to civilian-population ratio. This meticulous process identified eight articles that met the inclusion criteria with an appraisal score of 7 out of 12 and above for this systematic review.

Characteristics of Studies

This analysis includes diverse study designs, featuring one quasi-experimental clinical trial (Goetter et al., 2021), six retrospective studies (Holder et al., 2022; Maguen et al., 2020; Maguen et al., 2023; Post et al., 2021; Rutt et al., 2018; Sippel et al., 2023) and one randomized controlled trial (Schnurr et al., 2022). The sample sizes in the collection of studies show

considerable variation, ranging from a relatively small sample of 296 participants (Goetter et al., 2021) to a larger sample of 265,566 participants (Maguen et al., 2023). The studies collectively involved a substantial sample size of 305,070 individuals. The quality appraisal ratings for these studies also exhibited variability, ranging from 7 to 10 out of 12. The ratings were conducted using rapid critical appraisal questions for quasi-experimental studies and rapid critical appraisal questions for randomized clinical trial tools (Melnik & Fineout-Overholt, 2019). These ratings were based on the validity, reliability, and applicability factors. The variations in quality appraisal ratings emphasize each study's practical strengths and weaknesses.

By comparing the effectiveness and practical application of PE and CPT and exploring factors that influence treatment outcomes, the studies offer insights relevant to the question of which therapy may be more effective for veterans with PTSD. For example, three studies exclusively compared the effectiveness of PE and CPT in treating PTSD (Goetter et al., 2021; Rutt et al., 2018; Sippel et al., 2023). Both Maguen et al. (2020) and Maguen et al. (2023) examined factors influencing the improvement of PTSD symptoms in veterans. Holder et al. (2022) explored the impact of treatment sequences and switching between PE and CPT during a second course of treatment. Additionally, Post et al. (2021) investigated the effectiveness of intensive treatment programs in reducing suicidal ideation and treating PTSD among veterans. They showed that intensive treatment programs are a valuable approach to complex PTSD cases in veterans. Lastly, Schnurr et al. (2022) and Sippel et al. (2023) contributed to understanding the real-world effectiveness of CPT and PE in a complex population of veterans with severe PTSD.

Synthesis Across Studies

One theme discovered in this review was that PE psychotherapy is slightly more effective in treating PTSD. Across the collective eight studies in this systematic review referenced in Table 1, six provide evidence suggesting that PE is more effective than CPT in the treatment of

veterans with PTSD (Holder et al., 2022; Maguen et al., 2020; Maguen et al., 2023; Rutt et al., 2018; Sippel et al., 2023; Schnurr et al., 2022). However, the remaining two studies by Goetter et al. (2021) and Post et al. suggest that CPT is slightly more effective in reducing PTSD symptoms than PE, particularly in an intensive treatment setting.

Another theme uncovered is that factors such as the timing of treatment initiation, the number of sessions completed, and patient choice between PE and CPT benefit treatment outcomes (Maguen et al., 2020; Maguen et al., 2023). These factors play a significant role in the effectiveness observed from both therapies, indicating that the choice between PE and CPT may depend on the circumstances of the traumatic event or the individual patient's specific needs. In addition, Holder et al. discovered that veterans who switched from CPT to PE experienced a more substantial reduction in PTSD symptoms during the second therapy course. In contrast, no change from PE to CPT produced different results.

In examining the comparative effectiveness of PE and CPT for treating PTSD in veterans across eight studies, a consistent theme emerged. Both PE and CPT are beneficial therapeutic options for treating PTSD. The comprehensive analysis of all eight studies, each contributing unique insights, collectively emphasizes the positive impact of both PE's exposure-based approach and CPT's cognitive restructuring strategies contribute to positive outcomes (Goetter et al., 2021; Holder et al., 2022; Maguen et al., 2020; Maguen et al., 2023; Post et al., 2021; Rutt et al., 2018; Sippel et al., 2023; Schnurr et al., 2022).

To Neuman's Systems Theory, the themes across the studies of the comparative effectiveness of PE and CPT in treating veterans can be interpreted within the framework of the theory. For example, internal factors such as stressors from traumatic events and adaptive defense mechanisms influence therapy choice and outcomes. Positive results in both therapies highlight effective lines of defense against PTSD, showcasing system adaptability. Variability in

study findings reflects lines of resistance, while the ability to switch therapies indicates system reconstitution. The studies highlight the importance of a dynamic and individualized approach to treatment within the framework of Neuman's Systems Theory.

Discussion

The main goal of the systematic review was to investigate whether PE was superior to CPT for treating PTSD in veterans. The gathered research provided valuable insights into PTSD treatment, particularly in comparing the different therapies and understanding factors influencing therapy effectiveness. The objective was to confirm if PE is the more practical choice over CPT. Though the results only slightly favored PE, choosing one therapy proved challenging. For example, finding articles that correlated with the PICO question was an unexpected challenge. The process revealed a substantial lack of up-to-date information on these primary PTSD therapies for veterans despite advancements in training and research.

Newman's systems theory served as a valuable framework for interpreting these results, aligning with the complex impact of PTSD on veterans' lives. PE and CPT, viewed within this framework, emerged as essential tools for veterans to adapt to stressors and prevent worsening symptoms. Newman's emphasis on holistic care resonates with the discovered themes, reinforcing the importance of individualized and dynamic therapeutic interventions for veterans who have PTSD. The findings within Newman's systems theories underscore the importance of addressing veterans' holistic well-being and tailoring interventions to their unique needs.

Recommendations from Findings

The findings of this systematic review bring light to the challenge of finding a singular approach to treating the complex system of the mind, and several recommendations emerged. Firstly, there is a need for provider training programs with feedback to ensure proficiency and confidence in delivering both PE and CPT. Addressing the observed training imbalance can

contribute to the better availability of these therapies and support healthcare providers. Secondly, additional research on the real-world application of PE and CPT in various healthcare settings would provide a more comprehensive understanding. This approach would enhance the strength of future reviews. Lastly, more studies on the implementation and patient experience during PE and CPT would be beneficial. Understanding patient perspectives, preferences, and barriers enables informed decision-making by healthcare providers. This ensures that interventions align with veterans' needs and promote better engagement. Incorporating the voices of veterans alongside statistical data in study designs would give data to promote a comprehensive approach to treatment.

Limitations

The systematic review identified a lack of up-to-date literature on PE therapy for veterans with PTSD, as evidenced by the ratio of PE versus CPT participants. This limitation potentially impacted the data used to compare its effectiveness to CPT. Studies with a more equal ratio would enhance results. Quality appraisal scores for selected studies varied from 7 to 10 out of 12, indicating overall study quality. The appraisal scores could be higher to strengthen the collective evidence and results. Due to the delicate nature of this study, it would be challenging to have more randomized control trials. Therefore, improvement in study designs would help. In addition, the review included studies indirectly comparing PE and CPT. This lack of head-to-head studies and randomized controlled trials limits evidence on their relative efficacy. Despite these limitations, the systematic review provides valuable insights into the comparative effectiveness of PE and CPT for veterans with PTSD.

Conclusions and Implications

This systematic review contributes valuable insights into the comparative effectiveness of PE and CPT for treating PTSD in veterans. The findings suggest that PE and CPT are beneficial therapeutic options, with a slight overall favor towards PE regarding effectiveness. However, the choice between the two therapies should be considered based on individual factors, such as the timing of treatment initiation, the number of sessions completed, and patient choice. The review has indicated the need for provider training, application research, and patient experience studies. For improving clinic practice, provider training can address the imbalance in training and enhance the availability of both therapies. Conducting more studies on the implementation and patient experience during PE and CPT would improve clinical practice. Providing insight into treatment outcomes and gaining patient perspectives, preferences, and barriers enhances decision-making and promotes better engagement.

In addition, for continued work on the effectiveness of PE and CPT include head-to-head studies, longitudinal studies, and policy changes. Future research should aim for head-to-head studies directly comparing the effectiveness of PE and CPT. This would strengthen the evidence base and provide more precise guidance for healthcare providers. Longitudinal studies can offer insights into the long-term effectiveness of both therapies and factors influencing sustained improvement in PTSD symptoms among veterans. Advocating for policies that support the inclusion of evidence-based therapies like PE and CPT in standard PTSD treatment protocols can enhance access to these interventions for veterans. By addressing these recommendations, healthcare providers and policymakers can contribute to improving the quality of care for veterans with PTSD, ensuring that treatment approaches are evidence-based, individualized, and responsive to the unique needs of this population.

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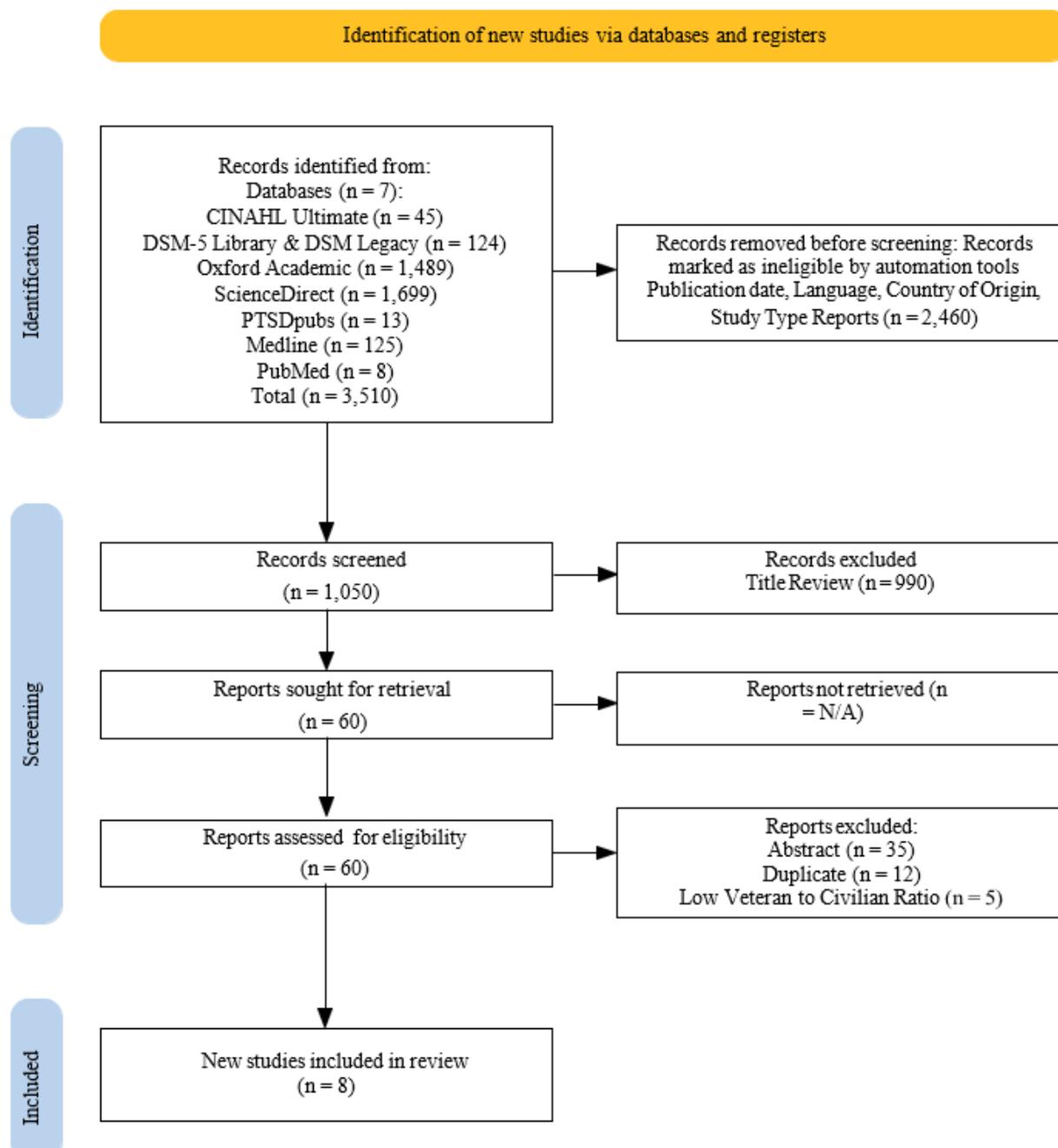
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Figures

Figure 1

Flow Chart



Haddaway, N. R., Page, M. J., Pritchard, C. C., & McGuinness, L. A. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimized digital transparency and Open Synthesis Campbell Systematic Reviews, 18, e1230. <https://doi.org/10.1002/cl2.1230>

Tables

Table 1

Evaluation Synthesis Table

Author	Purpose	Frame-work	Design	Sample/Setting	Method	Study Findings	Quality Appraisal/ Limitations	Conclusions/ Application
Goetter, 2021	To compare the relative effectiveness of PE and CPT when delivered in an intensive treatment format	Not Specified	Quasi-experimental Clinical Trail	n = 296 veterans; Referred by WWP; Academic medical center specialized in the treatment of PTSD	2-week intensive clinical program; Results measured by pre/post treatment PHQ-9, PCL- 5, Patient health questionnaire; 6-month follow up period	Based on the PCL-5, CPT had 1% greater improvement in PTSD symptoms than PE.	Quality Appraisal Rating: 10/12; Not randomized; No control group; Naturalistic setting; Significantly more PE participants compared to CPT	CPT was slightly superior to PE in treating PTSD in an intensive setting; Observed treatment ratio imbalance; More research needed
Holder, 2022	To compare the outcomes of patients who switched between CPT and PE and those who repeated CPT or PE during a second course of treatment	Not Specified	Retrospective Cohort Study	n = 2,958 OEF/OIF/OND veterans; Two or more outpatient encounters; VHA; 2001-2017	Data collected from veterans who received a second course of therapy involving PE and CPT; PCL-4 and PCL-5	Veterans who switched from CPT to PE had a greater reduction in PCL scores during the second course of treatment compared to those who repeated CPT.	Quality Appraisal Rating: 9/12; Not randomized, No control group; Naturalistic setting; Two versions of PCL	Switching from CPT to PE results in greater reductions in PTSD symptoms during the second treatment course; PE is more effective in this context compared to CPT; Multiple treatments and therapy changes can improve patient outcomes
Maguen, 2020	To identify factors associated with	Not Specified	Retrospective Cohort Study	n = 32,780 OIF/OEF veterans; At least	Analysis of preexisting clinical data reviewed for	PE had a 36% improvement compared to 31%	Quality Appraisal Rating: 9/12; The veterans in this	Modifiable factors can be used to improve

	improvements in PTSD symptoms among veterans receiving evidence-based psychotherapies for (PTSD).			one mental health encounter; VHA medical center and associated outpatient community care clinic; 2001-2017	PTSD and symptoms by use of PCL-4 and PCL-5; Results measured by pre/post therapy and after 3 months	with CPT; Individual treatment was more effective than group therapy; 8 or more sessions with a 16-week period had greater improvement of symptoms; Black veterans had more improvement with PE; Women showed higher improvement than men	study did not include all eras of veterans; PTSD was diagnosed by a provider however the CAPS-5 the gold standard was not utilized; Doesn't give ratio of veterans utilizing PE vs CPT	EBP outcomes; PE was the more effective treatment compared to CPT; Individual, group, and change in psychotherapy can improve patient outcomes
Maguen, 2023	To compare the effectiveness of CPT and PE in treating PTSD among veterans in a large national healthcare system	Not Specified	Retrospective Cohort Study	n= 265,566 OEF/OIF veterans; At least one psychotherapy encounter; Analyzed the national repository of VHA clinical and administrative data; 2001-2017	Emulated trials with 24-week periods of care; CPT vs non-EBP; PE vs non-EBP; PE vs CPT; use of PCL-4 and PCL-5;	Compared to non-EBP, 8 CPT sessions led to a significant 6.4-point improvement and 9.7-point improvement with PE.	Quality Appraisal Rating: 9/12; Natural setting; Not randomized; Only post-9/11 veterans; Two versions of PCL; CPT held 70% of the participants compared to 30% PE; High amount of incomplete treatment by patients	PE was slightly superior to CPT in improving PTSD symptoms; Both CPT and PE produce modest symptom improvements; More education and patient preference in needed for treatment compliance
Post, 2021	To examine whether ITPs utilizing PTSD treatments can reduce suicidal ideation in veterans and association with improved PTSD symptoms	Not Specified	Retrospective Effectiveness Study	n= 684 veterans; Referred from WWP; Emory Healthcare Veterans Program (n = 376); Road Home Program (n = 308); 2016-2019	Analysis of preexisting clinical data; 2-week PE; 3-week CPT; Day 1, 3, 5, 8, 10 days of treatment; Additional 13 and 14 of CPT; PCL-5; PHQ-9	CPT decrease of 22.08 points in PCL-5 scores; PE decrease of 21.44 points; Less severe SI in both the PE and CPT	Quality Appraisal Rating: 7/12; Naturalistic settings; Not randomized; Unable to control for the effects medication management, psychoeducation, and wellness services	SI scores decreased over time during these intensive treatments; CPT was slightly more effective in reducing PCL-5 scores compared to PE; When treating PTSD screen for depression and SI, PE and CPT can reduce both

Rutt, 2018	To assess the effectiveness of CPT and PE in reducing self-reported PTSD symptoms in a diverse sample of veterans	Not Specified	Retrospective Study	n = 750 veterans; 10 US States; At least 3 or more PCL within 6 months; VHA medical center and associated outpatient community care clinics; 2006-2013	Analysis of preexisting clinical data of 2030 charts; 8- 15 sessions; PE (n = 376); CPT (n =374); Results measured by pre/post treatment PCL	PE was superior to CPT with an average reduction in PTSD symptoms of 22% in PE and 20% in CPT.	Quality Appraisal Rating: 8/12; Lack of an experimental design; Not randomized; No control group; No uniform procedures with treatments	CPT and PE were both highly effective in treating PTSD in a diverse group of veterans; PE was more effective in symptom relief; Identify patient preference and barriers to treatment for compliance and increased reduction in PTSD symptoms
Sippel, 2023	To compare the effectiveness of PE vs. CPT for treating PTSD in veterans in a military-related context.	Not Specified	Retrospective Observational Study	n=1130 veterans; Discharged from VA PTSD residential rehabilitation treatment programs across the nation; 2018 through 2020	Analysis of preexisting clinical data 2018-2020; 6-8 weeks of PE and CPT treatment; PCL-5; Pre/Post, 4 mth and 1 year assessment	Both the CPT and PE groups demonstrated reductions in PTSD; CPT d=1.41; PE d=1.51;	Quality Appraisal Rating: 7/12; Not randomized; Low demographic variety; Missing data and follow-up time points; CPT made up for 73.5% of the participants	PE was slightly more effective than CPT in the study after the 1 year follow up; PE is slightly more effective; Patient preference and share decision making increases response and participation to treatment
Schnurr, 2022	To evaluate and compare CPT and PE for treating PTSD in military veterans within a VA residential setting and assess symptom changes over time	Not Specified	Randomized Controlled Trial	n = 916; 17 VHA outpatient centers across the United States; 2020-2021	Randomized selection of veterans to PE or CPT; 10 to 14 sessions;3-6-month follow up; Results measured by pre/post therapy by CAPS-5	PE was a more effective treatment of PTSD than CPT as evidence by CAPS-5 scores.	Quality Appraisal Rating: 8/12; Dropout rate was high in both groups averaging 51.2%; No control group; Time difference of 30 minutes between groups; Not generalized to women	PE and CPT are similar in a complex population; PE was statistically more effective than CPT; Overall results in both groups had improved PTSD symptoms;

Shared decision
making, and
patient
preference
enhances patient
outcomes

Abbreviations: CAPS-5 = Clinician-Administered PTSD Scale for DSM-5; CPT = Cognitive Processing Therapy; EBP = Evidence-Based Practice; ITPs = Intensive Treatment Programs OEF = Operation Enduring Freedom; OIF = Operation Iraqi Freedom; PCL-4 = PTSD Checklist for DSM-4; PCL-5 = PTSD Checklist for DSM-5; PE = Prolonged Exposure Therapy; PHQ-9 = Patient Health Questionnaire Depression Screening; PTSD = Post-Traumatic Stress Disorder; SI = Suicide Ideation; VHA = Veteran Healthcare Administration