

Cognitive Processing Therapy As An Intervention For Combat-Related Post-Traumatic Stress
Disorder

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Abstract

Background: Post-traumatic stress disorder (PTSD) is one of the leading psychiatric disorders among soldiers and veterans, including those deployed in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). Despite multiple available interventions, there has been ongoing interest in identifying and refining effective, evidence-based psychological treatments tailored to combat-related PTSD in this population.

Aim: The purpose of this review was to assess the effectiveness of Cognitive Processing Therapy (CPT) for combat veterans with PTSD-related symptoms, specifically focusing on OEF/OIF veterans.

Methods: A systematic literature search was conducted in three electronic databases: CINAHL, PsycINFO, and PubMed. Studies were included if they examined the impact of CPT on PTSD symptom severity in OEF/OIF veterans. Seven eligible studies were identified and critically appraised. Data were synthesised thematically to identify recurring patterns related to CPT delivery and outcomes.

Results: Four key themes emerged from the analysis: (1) administration of CPT, including format, setting, and fidelity; (2) comorbidity with other mental health disorders, such as depression and substance use, and its influence on treatment response; (3) combined treatment with other procedures, for example pharmacotherapy or adjunctive therapies; and (4) timing of CPT administration, including stage of post-deployment and chronicity of symptoms.

Keywords: Cognitive Processing Therapy (CPT), PTSD symptoms, OEF/OIF veterans, combat trauma

Introduction

Across the globe, different population groups are victimized by a mental disorder called post-traumatic stress disorder (PTSD). As defined by Schein et al. (2021), PTSD is a broad, stress-related disease of the mind that develops either directly or indirectly from extreme trauma to an individual. Along with that, Liriano et al. (2019) also considered PTSD as the most frequent form of psychiatric disorder following traumatic event exposure to an individual. It involves signs such as recurring thoughts of the stressful event and nightmares, avoidance behaviors in addition general reduction of emotional responsiveness including failure or refusal to talk about past traumatic events. Among other core symptoms of PTSD mentioned by Astill Wright et al. (2019), there are depersonalization and withdrawal that make people less likely to interact with others as well as hyper-activating behaviors such as sleep disturbances, increased irritability and tension. American Psychiatric Association (2021) elucidated that PTSD affects people of different ethnicities, ages, and cultures, with at least 3.5% of America's older population affected by this disorder every year.

National Center for PTSD (2021) established that the lifelong prevalence of PTSD among older adults, 65 years and above, is approximately 8.2%, with at least 1 in every 11 people being diagnosed with this mental health disorder in their lifetime. From a gender perspective, the study by Bryant (2019) reported that females are two times more vulnerable to developing PTSD compared to males, while the most susceptible ethnic groups to this disorder include U.S. Latinos, Alaska Natives, and African Americans compared to non-Latino whites. Therefore, PTSD is a critical and common mental health condition among the U.S. population. Evidence reported in the study by Liriano et al. (2019) shows that personal characteristics such as psychological and cognitive factors often play a central role in influencing an individual's degree

of risk for PTSD. In this context, it can be further argued that the manner in which these personal characteristics affect the development of PTSD is often influenced by the existence of other personal attributes and differences in the severity of trauma experienced. Moderate quality evidence reported in the study by Schein et al. (2021) shows that shorter post-trauma amnesia and greater memories of traumatic events among people with trauma brain injury (TBI) are often associated with increased risks for PTSD. The other important risk factors of PTSD as reported in this study by Schein et al. (2021) include depressed moods, distress, poor cognition, and anxiety among people with traumatic experiences. Therefore, it is important to understand the health history of PTSD patients before deciding on the intervention to use in reducing the severity of symptoms they are experiencing.

PTSD is a critical psychiatric disorder affecting both veterans and active military service members. Pietrzak et al. (2021) reported that the U.S. Department of Veterans Affairs (VA) offers essential resources to support positive behavior change among veterans. However, most of them often prefer seeking mental health services from community clinics. Based on the arguments by Jacoby et al. (2022), most of the veteran patients do not fully benefit from the evidence-based treatments (EBTs) for PTSD than civilians. Nevertheless, Bovin et al. (2021) argued that most of the PTSD treatment research on veterans is performed in the VA settings. According to Bookwalter et al. (2020), PTSD is an important health problem that affects most of the Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) Veterans, hence a critical health problem affecting veterans irrespective of their deployment status. However, minimal knowledge is known regarding the outcomes of military-affiliated patients seeking care services from the community settings.

U.S. Department of Veterans Affairs (2022) reported that 15.7% of the deployed OEF/OIF veterans have PTSD compared to only 10.9% of the non-deployed, and further established that 13.5% of the general OEF/OIF veteran population had PTSD. Therefore, these findings show that the deployment of veterans increases their vulnerability to experiencing PTSD. Lee et al. (2020) provided critical estimates of the prevalence of PTSD among the veteran population by using the DSM-IV PTSD Checklist, with the results showing lifetime and past-year rates of 18% and 5% for female veterans compared to 8% and 4% for male veterans. An epidemiologic study by Wisco et al. (2022) established that the lifetime rate for male veterans is comparable to that of civilians but more significant in the case of female veterans compared to civilians. However, the efficiency of this comparison is limited as it did not account for the variations in the methodological approach, demographics, and diagnostic tools used.

Cognitive Processing Therapy (CPT) is another important treatment that reduces the severity of symptoms for critical mental health disorders such as PTSD. As Nixon et al. (2021) note, CPT is a type of Cognitive Behavioral Therapy (CBT), which decreases the manifestation of PTSD symptoms. Further, Alpert et al. (2020) stated that the CPT is a 12-session psychotherapy for PTSD that teaches PTSD patients the most effective strategies to use in dealing with unhealthy thoughts they learn from trauma. Among other studies, Weinstein et al. (2023) mention that VA/DoD and APA have created procedural guidelines for the treatment of PTSD, both recommending a PE or CPT with a focus on treatment as an option for their therapy. The key advantage of trauma-focused treatments for PTSD compared to no trauma-focused ones is that they aim at reducing symptoms through recall, feeling, and emotional state related to the traumatic event among patients (Bohus et al., 2020). Despite its wide use in PTSD treatment, it has not been extensively established whether the CPT is effective in managing PTSD symptoms.

Therefore, this review focuses on assessing whether the CPT is an effective EBT for combat veterans with PTSD-related symptoms.

Research Question

- What are the effects of CPT on PTSD symptoms among OIF/OEF veterans?

Systematic Review

A systematic review was adopted to assess the effects of CPT on PTSD symptoms experienced by OIF/OEF veterans. CPT is a key intervention used in treating PTSD (Bohus et al., 2020). Evidence from the previous analysis by Weinstein et al. (2023) shows that the CPT is highly effective in addressing PTSD symptoms, enhancing post-traumatic experience as well as enhancing personal strength among PTSD patients. Furthermore, PTSD is among the most important mental health problems affecting a significant portion of OIF/OEF veterans (Alpert et al., 2020). In particular, risk factors for PTSD in OIF/OEF veterans are defined by the U. Department of Veterans Affairs (2022) as childhood trauma, low socioeconomic status, junior military rank, high deployment rates, and continued deployments with poor social support. Therefore, this review also speaks of CPT as a modality that treats PTSD symptoms among OIF/OEF veterans.

Systematic reviews constitute an important element in the social work profession because they facilitate the development of detailed summaries of evidence from literature on a given research issue. As Alston (2020) notes, systematic reviews make it possible to provide the necessary evidence at the right time for social workers who do not consistently have to read all of them separately to obtain conclusions. Further, systematic reviews give detailed knowledge of results from the existing literature using key strengths of evidence its integrity, and significance (Alexander, 2020). A systematic review was, therefore, necessary in this study because it shaped

the quality of published works. Specifically, this systemic review was conducted to present comprehensive, current information about the effectiveness of using CPT in treating PTSD symptoms among OIF/OEF veterans.

Importance to Social Work Education

The topic area for this review is very significant to the social work practice as this career trajectory often involves working with the VA. Precisely, this review focuses on assessing the efficiency of using CPT in managing PTSD symptoms among OIF/OEF veterans. Therefore, the newly reported knowledge from the conducted analysis can be used by social workers managing OIF/OEF veterans with PTSD to decide the most effective intervention to use. The VA is among the key employers of social workers; hence, such practitioners would need up-to-date knowledge about the most appropriate strategies for addressing common health problems, such as mental health disorders, experienced by veterans. According to Jacobs et al. (2021), VA social workers are important in veteran health care as their profession involves working with the VA/DoD. According to Nixon et al. (2021), CPT is an EBT that is widely used by mental health specialists, such as social workers, to address the needs of their clients. Therefore, reviewing evidence about the effectiveness of CPT would enable social workers to understand how this intervention can be used in managing PTSD symptoms among different patient populations, including OIF/OEF veterans. This systematic review deliberates on the effects of CPT with the reported results that the VA social workers would use to address the mental health problems, including PTSD, of their clients.

Methodology

The systematic review process commenced in December 2023 with the scrutiny of data retrieved from the selected studies completed in January 2024. With the primary focus on

evaluating efficiency of CPT on symptoms of PTSD among OIF/OEF veterans, this review sought to outline and explain how social work has incorporated the use of behavioral change through CPT in managing PTSD. In line with the explanations by Alston (2020), scholars and policymakers can use a systematic review approach to find, evaluate, and critically appraise evidence from different studies about the phenomenon of interest, leading to the generation of new knowledge that can be used during the decision-making process. Even though social work intersects at different levels of fields and skill knowledge bases of psychology, substance abuse, and mental health, a specific interest of this review was to explore the manner in which social work as a developed profession often uses different trauma-focused treatments for PTSD in education and real-life practice.

The present review followed the guidelines provided in the literature work by Hempel (2020), as it clearly describes all the steps in a systematic review. Prior to conducting the literature search, the reviewer formulated eligibility criteria for an abstract review as well as the full-text review, with key modifications being made as the study advanced. Inclusion standards used in the abstract review focused on assessing the connection between the use of CPT and the management of PTSD symptoms and the use of keywords related to CPT and PTSD, as they were clearly defined in this review. Moreover, the full-text appraisal was more focused on the research phenomenon than the abstract review based on identifying those studies that met all inclusion criteria. Concerning the research purpose, all included studies had to evaluate the effectiveness of CPT for PTSD symptomatology in OIF/OEF veterans. As per Hempel's (2020) explanations, this approach was applied to ensure that heterogeneous evidence about the research issue could be found and integrated. The study population was OIF/OEF veterans, and the geographic area of this study is the United States; hence only those studies that meet these

criteria were included in the review. Furthermore, studies published in English between 2013-2024 were only considered to ensure the inclusion of the latest evidence regarding the efficacy of CPT for reducing PTSD symptoms among OIF/OEF veterans. Furthermore, the search was limited to a range of research designs such as quasi-experimental, naturalistic experiments, exploratory and intervention articles, and pilot studies.

During the literature search, three databases were used which are CINAHL, PsycINFO, and PubMed. These databases were used as they are known to provide the highest level of evidence, being regularly updated on literature relating to human mental health and social work. The search process was designed to include studies that were published from 2013-24 in all of the three databases. To ensure that all the published works about the effects of CPT on PTSD symptoms among OIF/OEF veterans were captured, the following keyword combination was used; “cognitive processing therapy” OR “CPT” AND “post-traumatic stress disorder symptoms” OR “PTSD symptoms” AND “Operation Enduring Freedom and Operation Iraqi Freedom” OR “OEF/OIF.” Throughout the research, collaborative measures were applied to ensure the strengthening of the interrater reliability. At the preliminary stage, keyword searches were performed in tandem to allow for verification of the results. Additionally, the researcher participated in both the abstract and full-text reviews, allowing for easy identification of key differences in the reported results.

Search Results

A preliminary literature search on the three databases generated 130 citations; 43 records from CINAHL, 51 records from PsycINFO, and 36 records from PubMed. Thereafter, the citations were assessed for possible duplications where 6s records were eliminated while the remaining 68 records were taken through additional quality evaluation. At this stage, 36 records

were discarded for different reasons such as published in non-English language and published in 2012 and earlier. Furthermore, 21 records were eliminated for reasons such as lacking full-text format, secondary research studies, and those eliminated through a manual assessment process. In the end, a total of 7 full-text papers were for review. Figure 1 is a PRISMA diagram showing the applied process of literature selection.

Article Findings

Two of the seven studies selected for review were published in 2016, while the remaining were published in 2013-2015, 2018, and 2020 (see Table 1). All of the seven studies examined the effects of either CPT alone or combined with other treatment modalities in reducing PTSD symptoms among OIF/OEF veterans. Therefore, it is essential to note that all of the articles were specific to the CPT as an interventional approach to PTSD symptoms. Five out of the seven studies assessed the effects of CPT alone as the modality of treating symptoms of PTSD (Davis et al., 2013; Jak et al., 2015; Kaysen et al., 2014; Liu et al., 2020; Peck et al., 2018). However, Jak et al. (2015) went ahead to compare the efficiency of diverse versions of this treatment option, SMART-CPT, and CPT-C, on the PTSD symptoms reported by the veterans. The other two out of the seven studies compared the effectiveness of CPT plus art therapy and CPT alone (Campbell et al., 2016) and PE and CPT on PTSD symptoms among veterans (Ragsdale & Voss Horrell, 2016). Additionally, three studies assessed the impacts of CPT on PTSD symptoms reported by veterans with TBI (Davis et al., 2013; Jak et al., 2015; Ragsdale & Voss Horrell, 2016). At the same time, one study scrutinized the impacts of CPT on PTSD symptoms in veterans with or without alcohol-use disorder (AUD) (Kaysen et al., 2014). The inclusion of these studies increased the overall comprehensiveness of reported findings as they intended to

establish whether the presence of other disorders can influence the efficacy of CPT on PTSD symptoms.

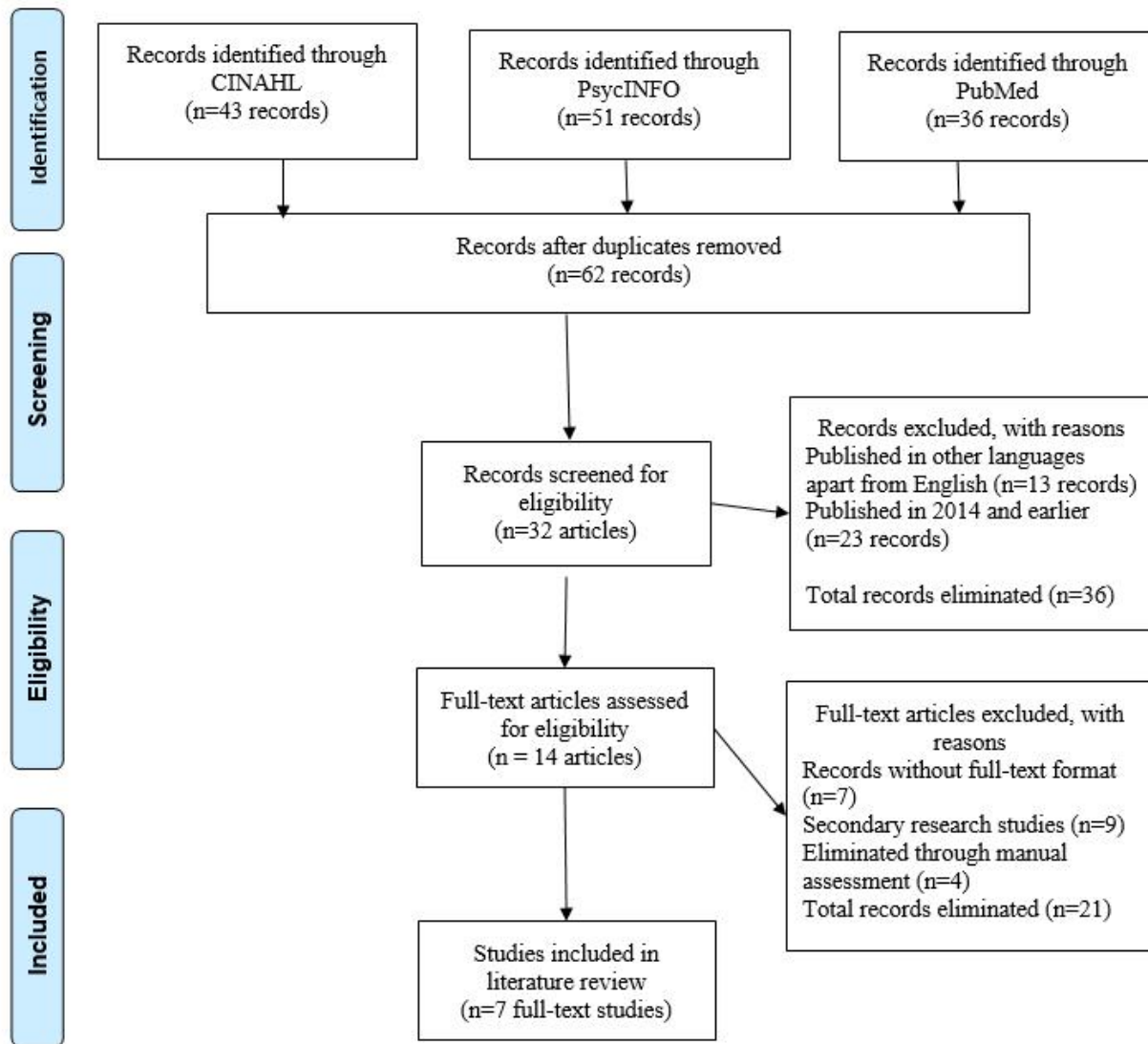


Figure 1: PRISMA flowchart of systematic reviews (Page et al., 2021).

All the seven articles selected for review reported evidence showing that CPT has positive effects on PTSD symptoms reported by the OIF/OEF veterans. Therefore, results from this review show that CPT is a necessary treatment method that can be used in treating PTSD patients by reducing the severity of the reported symptoms. Critical analysis of evidence reported in each of these studies shows that the use of CPT in PTSD treatment in the veteran population is

increasingly gaining popularity. A major factor reported in these studies to influence such increased adoption is the high reputation of CPT to help the civilian populations manage their PTSD symptoms without any adverse side effects being reported. The reviewed studies, specifically, the studies by Davis et al. (2013) and Ragsdale and Voss Horrell (2016), acknowledged PTSD as a key risk factor for other mental health problems such as suicidal ideation, depression, physiological reactivity, and dissociation. Therefore, using CPT to reduce the severity of PTSD symptoms further helps in reducing the chances of veterans experiencing other mental health problems that might be easily noticed. These four themes are identified based on the results of a comparative analysis of the evidence presented in these seven studies which represent the effects of CPT and factors that influence the effectiveness of CBT for PTSD symptoms. The following are some of the themes that have been reported: The method of CPT delivery for the patients, co-occurrence of other mental health disorders, how CPT was coupled with other treatment interventions, and its administration period to the patient.

First, the reviewed studies showed that comorbid mental health disorders had a big influence on CPT's ability to treat PTSD symptoms in veterans. It has been reported that three studies provided evidence relating to the impact of TBI on the efficacy of CPT in reducing PTSD symptoms among veterans from the United States Armed Forces (OIF/OEF). For instance, the study by Davis et al. (2013) revealed that there was no significant difference in BDI-II pre-treatment scores across outcome measures. Nevertheless, there were considerable disparities between the PTSD and TBI/PTSD groups in terms of CAPS. Besides, as Davis et al. (2013) established further, the dropout rate was observed to be greater among veterans in the TBI/PTSD group compared with those in the PTSD group. In this way, it also affected the general efficacy of CPT in reducing PTSD symptoms for patients from the higher dropout group. The results of

the study by Jak et al. (2015), showing that CPT is much more efficient for individuals with PTSD only than it is for people suffering from traumatic brain injury and PTSD, are similar to those obtained in the current study. However, Ragsdale and Voss Horrell (2016) carried out a study that revealed no significant difference in the effectiveness of CPT for PTSD symptom reduction between veterans suffering from PTSD only versus those with combined TBI-PTSD. Despite the varying results reported in these studies about the effects of TBI on the efficacy of CPT on PTSD symptoms, all three studies established a general conclusion that TBI is a risk factor for PTSD because of the neural damage sustained in the injury. In the context of alcohol-use disorder (AUD), the study by Kaysen et al. (2014) reported that individuals with this disorder had more significant early symptoms of PTSD compared to veterans without it. Therefore, the presence of AUD limits CPT's overall efficiency.



Table 1: Literature Matrix

Study	Aim	Population	Methodology	Results
Campbell et al. (2016)	To assess the efficiency of CPT plus art therapy and CPT alone on PTSD symptoms among veterans.	A sample of $N=11$ veterans; $N=5$ in the CPT plus art therapy and $N=6$ in the CPT group alone	A randomized control trial (RCT) approach was adopted. Data was collected using the BDI-II and PCL-M scales.	CPT plus art therapy was found to be extremely operative in addressing symptoms of PTSD among veterans compared to CPT alone.
Davis et al. (2013)	To use CPT for combat-related in OIF/OEF veterans and its effects on PTSD symptoms.	A sample of $N=132$ OIF/OEF veterans was grouped into positive $N=44$ and negative $N=92$ mild TBI history.	A retrospective chart analysis of data for veterans diagnosed with PTSD and treated with CPT was conducted.	The efficiency of CPT in managing PTSD symptoms is influenced by the number of sessions completed by the patients.
Jak et al. (2015)	To compare the efficiency of SMART-CPT to CPT-C in reducing PTSD symptoms.	A sample of $N=90$ OIF/OEF/OND Veterans was included in this analysis.	A single center RCT, with baseline assessment confirming PTSD diagnosis and history of TBI.	The adherence to SMART-CPT was higher among the veterans than in CPT-C.
Kaysen et al. (2014)	To assess the tolerance level and effects of CPT in PTSD symptom treatment among veterans with PTSD plus AUD and those with PTSD only.	A sample of $N=536$ veterans diagnosed with PTSD was included in the analysis.	A retrospective chart analysis was conducted. The participants first completed the analytical intake assessments and then CPT after 2 weeks. The CPT was offered by 68 different therapists in an individual format.	The CPT was highly tolerated by those with AUD and helped in reducing the symptoms of PTSD.
Liu et al. (2020)	To assess the effects of CPT provided via videoconferencing compared to the in-	A sample of $N=207$ veterans who received CPT to treat PTSD symptoms was included	An RCT design was employed. The CAPS was used to measure outcomes.	Improvements in CAPS scores for patients in the videoconferencing was highly effective to that

	person approach on the PTSD symptoms in veterans.	in the analysis.		the in-person approach after 6 months of treatment.
Peck et al. (2018)	To assess the effects of CPT on symptoms of PTSD in the veteran population.	A sample of $N=72$ military veterans receiving PTSD treatment was included.	A longitudinal design was conducted. The participants attended a 6-week CPT-based treatment program which comprised of about 4-5 hours.	The trauma-associated thoughts decreased following the CPT treatment process with a noteworthy reduction in the PTSD symptoms during the post-treatment period.
Ragsdale and Voss Horrell (2016)	To assess the effects of PE compared to CPT on PTSD symptoms among veterans with TBI.	A sample of $N=41$ veterans, $N=19$ veterans diagnosed with PTSD and TBI, and $N=22$ veterans with PTSD only was included in the analysis.	A retrospective chart analysis was performed. Standard treatment was provided by licensed psychologists or social workers.	There were no noteworthy variations in the effects of either CPT or PE therapy on the PTSD symptoms presented by the veterans.

Second, the reviewed studies reported that the effects of CPT on PTSD symptoms are different when the CPT is combined with other interventions or used alone. From a general perspective, evidence reported in the reviewed studies showed that CPT combined with other treatment options was highly operative in managing PTSD symptoms compared to when the CPT is used alone. For example, the study by Campbell et al. (2016), which involved a sample of 11 veterans (5 veterans in the CPT plus art therapy and six veterans in the CPT alone), established that CPT plus the art therapy was highly effective in improving trauma processing, enhancing trauma recall, provided healthy distancing and enhanced access to feelings among the veterans compared to when the CPT is used alone. Even though the veterans treated with CPT alone also reported a significant decrease in their PTSD symptoms, those in the CPT plus art therapy group noted that this combination helped them to adopt new strategies for avoiding or eliminating barriers to overcoming trauma (Campbell et al., 2016). Precisely, art therapy was vital in helping the veterans comprehensively understand their traumatic experiences with CPT, enabling them to develop a healthy relationship with such experiences, leading to reduced severity of PTSD symptoms. However, contrary findings are reported in the study by Ragsdale and Voss Horrell (2016), which compared the effectiveness of PE to CPT on PTSD symptoms among veterans. Precisely, this study established that those veterans who completed PE had greater levels of symptom reduction than those who completed the CPT (Ragsdale & Voss Horrell, 2016). The veterans in the PE group were 1.5 times more at risk of not meeting the standard criteria for PTSD than those in the CPT group (Ragsdale & Voss Horrell, 2016). Generally, both the studies by Campbell et al. (2016) and Ragsdale and Voss Horrell (2016) reported that the level of PTSD symptom reduction was influenced by the adopted treatment approach and not the TBI status of the veterans. Ragsdale and Voss Horrell (2016) explained the

variations in their findings by stating that PE helped veterans face their fears while CPT mainly focused on helping them forget about traumatic events.

Third, the reviewed studies identified the mode of delivering CPT to PTSD patients as a key factor influencing the success of the intervention in reducing the severity of the symptoms. For example, outcomes from the analyses of data collected in the study by Liu et al. (2020) for those who accomplished CPT treatment and those who did not attend all the CPT sessions revealed that there was a noteworthy improvement in the CAPS scores among the veterans offered the CPT treatment through videoconferencing than those offered through in-person approach at 6-month follow-up. However, the videoconferencing approach was inferior to the in-person approach in the post-treatment phase (Liu et al., 2020). Thus, these findings demonstrate that the CPT provided to veterans with PTSD by teleconferencing can be as effective as the one delivered in person when it comes to dealing with the symptom severity of PTSD. In their research, Jak et al. (2015) therefore incorporated major aspects of compensatory cognitive restoration components such as rehabilitation therapy and CogSMART within the CPT to manage veterans who reported poor psychological health conditions linked with PTSD and mild TBI history. Thus, Jak et al. (2015) compared the effectiveness of their new treatment technique SMART-CPT to the standard CPT in treating symptoms associated with PTSD. According to the results of this study by Jak et al. (2015), SMART-CPT exhibited more benefits in improving post-concussive symptoms, namely cognitive and neurobehavioral symptoms among veterans with PTSD compared to standard CPT. This is an indication that the conventional CPT should be revised a little bit to address the high-demand care needs of veterans suffering from PTSD.

Fourth, the time period for providing CPT to the patients was another important element that was reported. The research of Kaysen et al. (2014) evaluated the efficacy of CPT in

addressing the symptoms of comorbid PTSD and AUD among veterans, and it was noted that the CPT program was well tolerated by veterans with comorbid AUD while demonstrating greater symptom reduction efficiency for PTSD and depression among members of the patient population. In the realm of CPT session attendance, Kaysen et al. (2014) in their literature works reported that AUD veterans had more interest in attending CPT sessions- with a mean number of 9 out of 12 registered among this group. Kaysen et al. (2014) further found that about 47% of the sample completed all 12 sessions of CPT, and the AUD investigative groups did not differ in this regard. Furthermore, the research work by Peck et al. (2018) assessed the effects of CPT on PTSD plus substance use disorder (SUD) symptoms among veterans and reported that the number of sessions attended by the participants influenced the nature of outcomes reported. In the context of PTSD symptomatology, the study by Peck et al. (2018) established that veterans who completed all 12 sessions of CPT registered significantly fewer dysfunctional trauma-associated thoughts, trauma-cued cravings, and depressing symptoms. Therefore, these results insinuate that trauma-associated thoughts are likely to reduce during the CPT treatment process and play a central role in reducing the symptomatology of PTSD in the post-treatment phase. Therefore, results reported in these studies suggest that veterans with PTSD who completed all 12 sessions of CPT have greater chances of reporting reduced severity of PTSD symptoms than those who completed fewer sessions.

Discussion

PTSD is among the most important psychological problems experienced by OIF/OEF veterans. All the seven studies included in this review reported evidence showing that CPT is a major treatment option for reducing symptoms of combat-related PTSD among OIF/OEF veterans. A major knowledge gap that motivated these studies is the lack of detailed evidence

regarding the effectiveness of CPT in reducing combat-related PTSD among OIF/OEF veterans. Consistent with the explanations by Campbell et al. (2016) and Ragsdale and Voss Horrell (2016), the CPT comprises 12 one-hour sessions and involves psychoeducation regarding PTSD, exposure, and cognitive reconstruction. A major strength of CPT, which enables it to reduce symptoms of PTSD in OIF/OEF veterans, as reported in some of the reviewed studies such as Davis et al. (2013), is its ability to allow PTSD patients to write an account of their trauma experience which they are encouraged to reread at home as well as during the therapy. This specifically takes place in the exposure phase of CPT. Even though the reviewed studies identified the process of sharing or writing details about the traumatic experience as a major challenge that most PTSD patients may experience, especially when the therapy is performed in groups, none of them assessed the effects of this challenge on the overall efficiency of CPT in reducing combat-related PTSD symptoms. Therefore, this forms an important gap in knowledge that should be addressed by future research in this area. Results from the conducted review showed that sharing traumatic experiences is an emotionally challenging process, and it forms the most important part of the CPT. However, failing to explain this challenge limits the effectiveness of CPT, and proposing key strategies that therapists can use to modify this phase leads to creating an important literature gap that calls for additional research. Contrary to the findings from the studies by Campbell et al. (2016) and Ragsdale and Voss Horrell (2016), it was reported in the analysis by Davis et al. (2013) that a large number of veterans with PTSD are often likely to experience other forms of mental health problems, such as psychosis, dissociation, depression, and substance abuse, hence making the CPT not to be an effective treatment approach for such patients, unless the therapist can ensure that additional symptoms from other mental health problems are not very severe. In a situation where symptoms of the additional

mental health problems are severe, the patients are likely to not fully participate in the CPT session hence compromising the overall quality of patient outcomes reported.

Another important gap reported in the present review is the lack of a detailed comparison between the effectiveness of CPT and other psychological treatments for PTSD, specifically other forms of CBT that are used in managing the effects of traumatic experiences. Even though some of the studies included in this review presented evidence comparing CPT to other treatment options for PTSD, the results were not conclusive. For example, the study by Ragsdale and Voss Horrell (2016) compared the effects of CPT to PE on PTSD symptoms in OIF/OEF veterans. Even though Ragsdale and Voss Horrell (2016) reported that PE had greater effects on PTSD symptoms than CPT, they failed to present detailed factors that influenced such variations. Consistent findings are reported in the study by Campbell et al. (2016), which compared the effectiveness of CPT plus art therapy and CPT alone in reducing symptoms of PTSD in this patient population. Precisely, Campbell et al. (2016) reestablished that CPT plus art therapy was highly effective in reducing PTSD symptoms compared to when CPT alone was used. However, this study has failed to provide a detailed explanation of the key factors that influenced such variations, forming an important gap in the literature that future research should address. Based on the evidence reported from the present review, there is a need for further research to compare the efficiency of CPT to other widely used psychological treatments for PTSD. Results from such analyses would allow social workers and other care practitioners caring for PTSD patients to make informed decisions regarding the most appropriate treatment option to adopt. Another key observation made in this context is that none of these seven studies compared the effectiveness of CPT to any form of pharmacological treatment of PTSD with those that did a comparison including only psychological treatments in their analyses. Therefore, further research

is required in this area to address this gap by exploring the effects of CPT plus any pharmacological treatment of PTSD compared to CPT alone in reducing the effects of PTSD symptoms. Nonetheless, the findings reported in the studies by Campbell et al. (2016) and Ragsdale and Voss Horrell (2016) about effectiveness of CPT on PTSD symptoms in the post-treatment period are contrary to those from the analysis by Kaysen et al. (2014). Precisely, the findings from Kaysen et al. (2014) demonstrated that there is still a significant number of veterans who continue to experience PTSD symptoms even after completing all the CPT sessions, an indication that this intervention is not effective in all PTSD patients. An important explanation for such a scenario is that PTSD patients might have sought treatment at the late stages of the disorder, making it a challenging process to effectively manage and treat.

Social work professionals would greatly benefit from the evidence reported in the present review. Results from this review, specifically the studies by Kaysen et al. (2014) and Liu et al. (2020), show that the cognitive therapy phase of CPT is often initiated with the impact statement where the PTSD patients are encouraged to provide an account of the impacts of the experienced trauma on their perspectives of self and others. In all of the studies, the OIF/OEF veterans provided detailed information about traumatic experiences they encountered during the military operations. Therefore, social workers can use such information to develop a general understanding of the mental health needs of OIF/OEF veterans, either with or without PTSD. Precisely, the impact statements provided by PTSD patients can be used by social workers to identify maladaptive cognitions regarding the trauma, and such cognitions are likely to emerge when the traumatic experiences do not make sense to the patients in the context of their previous beliefs. On the contrary, Peck et al. (2018) reported that the CPT allows for easy identification of the problematic cognitions, which the social workers can help their clients challenge by using

Socratic questioning to ensure that the distorted cognitions from the traumatic experiences are replaced with accurate beliefs about self, others and their surroundings. Therefore, it is appropriate to note that CPT helps PTSD patients, including OIF/OEF veterans, to develop a positive relationship with their traumatic experiences, leading to improved quality of mental health. Even though these studies provided evidence regarding the effectiveness of CPT on PTSD symptoms, they have failed to outline the specific characteristics of PTSD patients that may influence the adoption of the CPT instead of other available psychological treatments for PTSD. Therefore, this gap emphasizes the need for social workers caring for PTSD patients to conduct a thorough pretreatment assessment to determine the most appropriate treatment option that should be adopted. Despite the variations in CPT's ability to reduce the severity of PTSD symptoms reported in these three studies, they all established a common argument that complexity of the PTSD often limits its successful treatment among veterans and that its symptoms are likely to persist for a long period of time depending on severity of the symptoms originally experienced by the patient, the nature of trauma they experienced as well as their overall personal history. Based on these findings, it is justifiable to note that social workers caring for veterans with PTSD must conduct comprehensive assessments of their clients to understand the nature of their symptoms, types of trauma they experienced, and personal history before assigning them to any CPT sessions.

Finally, a standardized minimum number of CPT sessions to be attended by PTSD patients for effective reduction of PTSD symptoms is missing. Precisely, the seven studies reported that CPT is made of 12 sessions but have failed to provide a detailed explanation for the most likely minimum number of sessions that PTSD patients can attend and still register a reduction in the PTSD symptom severity. A major study where this gap is evident is the research

by Kaysen et al. (2014), which explored the tolerance levels and effects of CPT on PTSD symptoms, with the reported results showing that there was no significant difference between the severity of PTSD symptoms among veterans who completed all the 12 CPT sessions and those who completed less. On the contrary, the studies by Davis et al. (2013) and Peck et al. (2018) established that PTSD patients who failed to complete all 12 CPT sessions had greater severity of PTSD symptoms than those who completed all the set sessions. In all seven studies, it has not been reported at which CPT session the PTSD patients start to experience the positive effects of the intervention. Therefore, this calls for additional research that would help the social workers develop a CPT-based PTSD treatment plan for OIF/OEF veterans or civilian populations, which outlines projected outcomes at each stage or session of the therapy. The mode of delivering CPT treatments for PTSD is another area that was not comprehensively explained in the seven studies reviewed. For example, Liu et al. (2020) in their study compared the effectiveness of CPT delivered through a videoconferencing approach to an in-person approach to PTSD, with the results showing that the former was effective in the six-month treatment phase while the latter was effective in the post-treatment phase. However, there is no detailed explanation of key factors that influenced such variations in treatment efficiency. Therefore, this is an important gap in the literature that requires extensive research. Even though Davis et al. (2013) and Peck et al. (2018) reported that PTSD patients who attended at least 9 sessions of CPT are likely to register a reduction in their symptoms' severity, the study by Kaysen et al. (2014) presented contrary evidence as it established that a PTSD patient must attend all the 12 CPT sessions for them to experience such severity reduction. Therefore, the existence of such variations in the minimum CPT sessions is an indication that the ability of CPT to reduce the severity of PTSD symptoms is influenced by other factors apart from the number of sessions completed by the patients.

Limitations of the Research

There were five critical limitations of this systematic review. First, a single reviewer conducted the entire literature search and study selection process, leading to potential selection bias. Specifically, this limitation could have been addressed if the literature search and selection processes were conducted by different reviewers with the resulting outcomes compared to facilitate the selection of the most appropriate studies for review. As the entire review relied on studies searched and selected by a single reviewer, there were greater chances of misrepresentation of the sample population or poor understanding of the effects of CPT on PTSD symptoms, hence leading to inflated overall effect sizes and high possibilities of inaccurate findings. Secondly, the reviewer assessed abstracts as the initial phase of the review process. This approach has excluded articles that thinly included the defined keywords and search terms in their primary texts and not in the abstract section. Eliminating such studies is likely to have compromised the overall comprehensiveness of the evidence selected for review. Therefore, future review in this area should consider assessing the papers' abstracts and primary texts before deciding to include or exclude them. The third limitation is based on the fact that the university librarian was only partially involved in the literature search process. Even though the reviewer sought the assistance of the librarian during the initial stages of the literature search process, the librarian was only involved in part of the research process. This led to the possibility of excluding databases that host top-quality and up-to-date literature about CPT, PTSD, and veteran studies. Therefore, this limitation will likely have compromised the quality and comprehensiveness of studies selected for review.

The fourth limitation of this review is the selective reporting of outcomes from the reviewed studies. Precisely, the reviewer only focused on reporting evidence about the effects of

CPT on PTSD symptoms, even though some of the studies included in this review reported the effects of other psychological treatments for PTSD, such as PE. Such selective reporting of research outcomes possibly led to unfair and misleading interpretations of evidence about the effects of CPT on PTSD symptoms. Because of the selective reporting approach, the reviewer did not include any evidence about possible situations where the CPT could not lead to a reduction of the severity of the PTSD symptoms. Furthermore, including only articles published in English and 2013-2024 limited the overall selection prospects in this systematic review, increasing the publication bias. Along with these limitations, the assessment of bias led to identifying critical points to address. First, the eligibility criteria were applied to ensure the selection of only published articles in this systematic review. This approach possibly led to the exclusion of other unpublished literature works with detailed evidence about the effects of CPT on PTSD symptoms in OIF/OEF veterans. Additionally, the within-study bias could have interfered with the quality of evidence reported in the final review. Precisely, it is essential to note that this systematic review primarily focused on extracting evidence about the effects of CPT on the severity of PTSD symptoms without accounting for the limitations of the individual studies. Therefore, the consequences of limitations of individual studies included for review were possibly transferred in the present systematic review.

Conclusion

The main objective of this systematic review was to investigate the impact of CPT on combat-related PTSD symptom severity in OIF/OEF veterans. In particular, outcomes from this study indicate that CPT is a relevant psychological treatment for PTSD symptoms in veterans. The four themes identified upon the analysis of evidence presented in seven reviewed studies described the impact of CPT on PTSD reduction among OIF/OEF veterans. The reported themes

encompass the way in which CPTs were delivered to the patients, the existence of other mental health disorders, using it with other treatment strategies, and length of administering CPT to the patients. First, this systematic review established that the presence of other mental health problems greatly influences the efficiency of CPT on the severity of PTSD symptoms.

Specifically, some of the reported mental health problems that are often treated together with PTSD during CPT therapy include AUD and TBI. This review revealed that the ability of CPT to reduce the severity of PTSD symptoms is lower among veterans with AUD or TBI than those with PTSD alone. Second, this systematic review reported that the effectiveness of CPT on PTSD symptoms can be improved by combining it with other psychological treatment options. Precisely, the reviewed studies reported that CPT plus either art therapy or PE shows greater effects on the severity of PTSD compared to when the CPT is used alone. Therefore, the review suggests that social workers caring for PTSD patients, either from the veteran or civilian population, should consider combining CPT with other psychological treatment options to report positive outcomes. Precisely, results from this review demonstrated that CPT plus other psychological treatment options helped PTSD patients to create a positive relationship between their traumatic experiences and themselves, practice avoidance, and barriers needed to overcome trauma in the future. However, this review has not provided detailed explanations of the major factors influencing improved patient outcomes in CPT plus other psychological treatments than when the CPT is used alone.

The third theme reported in this systematic review demonstrated that the mode of delivering CPT to PTSD patients is a key factor influencing the success of the intervention in reducing the severity of the symptoms. Based on the reported findings, PTSD veterans are likely to respond to the CPT treatment differently based on the type of approach used in delivering this

psychological treatment to them. Key CPT delivery approaches reported in this review include videoconferencing and in-person strategies. The present review established that the videoconferencing approach has greater positive effects on PTSD symptom severity during the therapy period. However, a greater reduction in the severity of PTSD symptoms in the post-treatment period was reported when an in-person approach was used. Additionally, this review has recommended the need to restructure the traditional CPT to meet the changing mental health and social needs of PTSD patients. The SMART-CPT, which is a modified version of CPT, is more effective in reducing the severity of PTSD symptoms than the traditional CPT.

In the context of the fourth theme, this systematic review established that the duration of time taken to deliver CPT to PTSD patients influenced the severity of symptoms reported. Specifically, the universal CPT involves 12 sessions with those OIF/OEF veterans who completed all of these sessions, reporting reduced severity of PTSD symptoms compared to those who dropped out of the therapy sessions. However, this review has not established the minimum number of CPT sessions that PTSD patients should attend for them to register reduced severity of PTSD symptoms. Therefore, this creates an important literature gap that future research should address. Furthermore, a systematic review has reported that CPT is highly tolerated by PTSD OIF/OEF veterans with other mental health conditions such as AUD. However, detailed explanations regarding the factors that make PTSD patients with AUD show greater CPT tolerance than those without are not presented in this review; hence, this is a key gap in the literature that should be addressed.

References

- Alexander, P. A. (2020). Methodological guidance paper: The art and science of quality systematic reviews. *Review of Educational Research, 90*(1), 6-23.
- Alpert, E., Hayes, A. M., Barnes, J. B., & Sloan, D. M. (2020). Predictors of dropout in cognitive processing therapy for PTSD: An examination of trauma narrative content. *Behavior Therapy, 51*(5), 774-788.
- Alston, M. (2020). *Research for social workers: An introduction to methods*. Routledge.
- American Psychiatric Association. (2021). *What is post-traumatic stress disorder (PTSD)?* Psychiatry.org. <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>
- Astill Wright, L., Sijbrandij, M., Sinnerton, R., Lewis, C., Roberts, N. P., & Bisson, J. I. (2019). Pharmacological prevention and early treatment of post-traumatic stress disorder and acute stress disorder: A systematic review and meta-analysis. *Translational Psychiatry, 9*(1), 334-339.
- Bohus, M., Kleindienst, N., Hahn, C., Müller-Engelmann, M., Ludäscher, P., Steil, R., Riddle, M. S., & Priebe, K. (2020). Dialectical behavior therapy for posttraumatic stress disorder (DBT-PTSD) compared with cognitive processing therapy (CPT) in complex presentations of PTSD in women survivors of childhood abuse: A randomized clinical trial. *JAMA Psychiatry, 77*(12), 1235-1245.
- Bookwalter, D. B., Roenfeldt, K. A., LeardMann, C. A., Kong, S. Y., Riddle, M. S., & Rull, R. P. (2020). Posttraumatic stress disorder and risk of selected autoimmune diseases among US military personnel. *BMC Psychiatry, 20*(1), 1-8.
- Bovin, M. J., Kimerling, R., Weathers, F. W., Prins, A., Marx, B. P., Post, E. P., & Schnurr, P. P. (2021). Diagnostic accuracy and acceptability of the primary care posttraumatic stress

- disorder screen for the diagnostic and statistical manual of mental disorders among US veterans. *JAMA Network Open*, 4(2), 203-209.
- Bryant, R. A. (2019). Post-traumatic stress disorder: A state-of-the-art review of evidence and challenges. *World Psychiatry*, 18(3), 259-269.
- Campbell, M., Decker, K. P., Kruk, K., & Deaver, S. P. (2016). Art therapy and cognitive processing therapy for combat-related PTSD: A randomized controlled trial. *Art Therapy*, 33(4), 169-177.
- Davis, J. J., Walter, K. H., Chard, K. M., Parkinson, R. B., & Houston, W. S. (2013). Treatment adherence in cognitive processing therapy for combat-related PTSD with history of mild TBI. *Rehabilitation Psychology*, 58(1), 36-42.
- Hempel, S. (2020). *Conducting your literature review*. American Psychological Association.
- Jacobs, L. A., Kim, M. E., Whitfield, D. L., Gartner, R. E., Panichelli, M., Kattari, S. K., Seim, R. W., Bedard-Gilligan, M., & Mountz, S. E. (2021). Defund the police: Moving towards an anti-carceral social work. *Journal of Progressive Human Services*, 32(1), 37-62.
- Jacoby, V. M., Straud, C. L., Bagley, J. M., Tyler, H., Baker, S. N., Denejkina, A., & STRONG STAR Training Initiative. (2022). Evidence-based posttraumatic stress disorder treatment in a community sample: Military-affiliated versus civilian patient outcomes. *Journal of Traumatic Stress*, 35(4), 1072-1086.
- Jak, A. J., Aupperle, R., Rodgers, C. S., Lang, A. J., Schiehser, D. M., Norman, S. B., & Twamley, E. W. (2015). Evaluation of a hybrid treatment for Veterans with comorbid traumatic brain injury and posttraumatic stress disorder: Study protocol for a randomized controlled trial. *Contemporary clinical trials*, 45(3), 210-216.

- Kaysen, D., Schumm, J., Pedersen, E. R., Seim, R. W., Bedard-Gilligan, M., & Chard, K. (2014). Cognitive processing therapy for veterans with comorbid PTSD and alcohol use disorders. *Addictive Behaviors, 39*(2), 420-427.
- Lee, D. J., Lee, L. O., Bovin, M. J., Moshier, S. J., Dutra, S. J., Kleiman, S. E., Gradus, J. L., Resick, P. A., & Marx, B. P. (2020). The 20-year course of posttraumatic stress disorder symptoms among veterans. *Journal of abnormal psychology, 129*(6), 658-663.
- Liriano, F., Hatten, C., & Schwartz, T. L. (2019). Ketamine as treatment for post-traumatic stress disorder: a review. *Drugs in Context, 8*(4), 109-196.
- Liu, L., Thorp, S. R., Moreno, L., Wells, S. Y., Glassman, L. H., Busch, A. C., Seim, R. W., Bedard-Gilligan, M., & Agha, Z. (2020). Videoconferencing psychotherapy for veterans with PTSD: results from a randomized controlled non-inferiority trial. *Journal of Telemedicine and Telecare, 26*(9), 507-519.
- National Center for PTSD. (2021). *How Common is PTSD in adults?* PTSD.va.gov. https://www.ptsd.va.gov/understand/common/common_adults.asp#:~:text=About%20%20of%20every%20100,sexual%20assault%E2%80%94compared%20to%20men.
- Nixon, R. D., King, M. W., Smith, B. N., Gradus, J. L., Resick, P. A., & Galovski, T. E. (2021). Predicting response to cognitive processing therapy for PTSD: A machine-learning approach. *Behaviour Research and Therapy, 144*(3), 103-109.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Lang, A. J., Schiehser, D. M., Norman, S. B., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *International Journal of Surgery, 88*(3), 105-112.

- Peck, K. R., Coffey, S. F., McGuire, A. P., Voluse, A. C., & Connolly, K. M. (2018). A cognitive processing therapy-based treatment program for veterans diagnosed with co-occurring posttraumatic stress disorder and substance use disorder: The relationship between trauma-related cognitions and outcomes of a 6-week treatment program. *Journal of Anxiety Disorders, 59*(3), 34-41.
- Pietrzak, R. H., Tsai, J., & Southwick, S. M. (2021). Association of symptoms of posttraumatic stress disorder with posttraumatic psychological growth among US veterans during the COVID-19 pandemic. *JAMA Network Open, 4*(4), e214972-e214972.
- Ragsdale, K. A., & Voss Horrell, S. C. (2016). Effectiveness of prolonged exposure and cognitive processing therapy for US veterans with a history of traumatic brain injury. *Journal of Traumatic Stress, 29*(5), 474-477.
- Schein, J., Houle, C., Urganus, A., Cloutier, M., Patterson-Lomba, O., Wang, Y., McGuire, A. P., Voluse, A. C., & Davis, L. L. (2021). Prevalence of post-traumatic stress disorder in the United States: A systematic literature review. *Current Medical Research and Opinion, 37*(12), 2151-2161.
- U.S Department of Veterans Affairs. (2022). *PTSD in Iraq and Afghanistan veterans*. Public Health. <https://www.publichealth.va.gov/epidemiology/studies/new-generation/ptsd.asp>
- Weinstein, H. R., Roberge, E. M., & Parker, S. C. (2023). Intensive Cognitive Processing Therapy associated with reduced PTSD treatment dropout in a case-controlled study of treatment-seeking veterans. *Cognitive and Behavioral Practice, 30*(3), 314-325.
- Wisco, B. E., Nomamiukor, F. O., Marx, B. P., Krystal, J. H., Southwick, S. M., & Pietrzak, R. H. (2022). Posttraumatic stress disorder in US military veterans: Results from the 2019–

2020 National Health and Resilience in Veterans Study. *The Journal of Clinical Psychiatry*, 83(2), 397-401.



Appendix

Research Problem: This review focused on assessing the effects of CPT on PTSD symptoms among OIF/OEF veterans.

Research Question: What is the effect of CPT on combat-related PTSD symptoms among OIF/OEF veterans?

Abstract Review

Paper is only included if it meets at least four of the criteria outlined below.

- The abstract is about CPT, PTSD, or OEF/OIF veterans.
- The abstract was published in 2013-2024.
- The article clearly addresses the use of the defined intervention
- The abstract includes keywords and search terms related to the research problem
- The abstract involves an assessment of the effects of CPT on PTSD symptoms.

Full Text Review

- Intervention can be easily implemented by a social worker
- Data extracted from the selected articles to be placed in Bucket II

Introduction

- The introduction should define the research design and adopted methodology
- Provides a research question or problem statement.

Study Design and Methodology

- The study design is clearly defined
- Research question is stated
- Hypothesis is defined

- Study population is described
- Eligibility standards for participant selection are defined
- Geographic location of the study is defined
- Intervention being assessed is clearly defined
- The target population for the intervention is defined

Sampling

- The sample should include OIF/OEF veterans
- Sample size is defined
- The sampling approach is described and justified
- Location from where the sample is taken is defined
- Demographic information of the sample is defined

Discussion

- Results from data analysis are outlined
- Discussion about the effectiveness of the intervention is presented
- Strengths and limitations of the study are explained

Analysis

- Strengths and limitations of the intervention are explained