A Comparison of the Efficacy of Current Treatments for Combat-Related PTSD in U.S. Military Veterans

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Abstract

Post-traumatic stress disorder (PTSD) is a prominent mental health concern frequently seen in today’s military personnel. This review focuses on how effective different treatments are in reducing symptom severity for combat-related PTSD. Outside influences, dropout rates, and societal dynamics were considered. All therapies examined in this review were found to be effective in improving symptoms. The biggest issue with treatment in this community is not ineffective treatment, it is the stigma related to mental health issues in the military that leads to high dropout rates. The various therapies examined in this study do not completely rid patients of their issues with PTSD, but they have been found to significantly reduce the severity of the symptoms.
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Posttraumatic Stress Disorder (PTSD) is a trauma induced psychopathology that is seen in civilians as well as military service members. As outlined in the DSM-V, PTSD is seen in individuals who experience a combination of recurrent, distressing memories or dreams, dissociative reactions, psychological distress resulting from exposure to a cue that symbolizes the traumatic event, avoidance of stimuli connected to the event, negative changes in cognition, a shift in arousal responses, and prolonged disturbance (5th ed.; DSM–5; American Psychiatric Association, 2013). PTSD patients often suffer functional impairment from their severe levels of distress. This disorder is also often accompanied by problems with anger, aggression, violence, and suicidal ideations.

Symptoms of PTSD can be further organized into threshold and subthreshold categories. Subthreshold PTSD is seen in individuals who experience trauma-related distress that does not fully meet the criteria for a diagnosis of PTSD (Dickstein, Walter, Schumm, & Char, 2013). This category of symptomology has been associated with greater psychological and functional impairment, such as higher levels of anger, hostility, aggression, problems with relationships and work, as opposed to threshold PTSD. Due to their experience of increased impairment, subthreshold patients often express a higher frequency of suicidal ideation, making this population, in some ways, at higher risk than patients with threshold PTSD (Dickstein et al., 2013).

The military community is naturally exposed to a higher frequency of traumatic events than the general population. Of all service members, 13.5% - 15.7% of veterans are estimated to walk away from war zones having developed PTSD (Ford, Grasso, Greene, Slivinsky, &
DeViva, 2017). Other studies have shown the proportion of veterans suffering from PTSD may even be as high as 20-30% of the population (Reisman, 2016). In addition to being at higher risk for suffering from PTSD, as compared to the general population, military service members who have been exposed to combat also experience unique hurdles in accessing treatment. These figurative hurdles include the requirement of an honorable or general discharge from the military to be granted access to Veterans Affairs (VA) medical benefits, long waitlists at the VA, and the strong negative stigma on mental illness associated with the military (Reisman, 2016).

The most recent combat tours have been Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND). A large majority of the veterans currently being observed served in one of these three tours. OEF was from 2001 to 2014, this operation was fought mostly in Afghanistan in response to the terrorist attacks on 9-11. Troops were deployed for OIF from 2003-2010, mostly in Iraq. OND, 2010 to 2011, served as the end of American involvement in the Iraqi conflict.

The first approach typically used to treat PTSD is a psychological intervention, as opposed to medical intervention. Evidence-based therapy (EBT), specifically cognitive behavior therapies (CBT), such as cognitive processing therapy (CPT) and prolonged exposure (PE) are the most commonly referred treatments since the they are the most strongly supported interventions that effectively reduce symptoms of PTSD (e.g., Monson et al., 2006; Alvarez et al., 2011; Dickstein et al., 2013). Evidence-based therapy is simply treatment that has been backed by scientific research.

CPT is a 12 session, manualized, trauma-focused, EBT. This form of therapy is the most supported form of treatment for PTSD as it has had the most studies conducted on it and has been shown to be effective in improving combat-related PTSD. CPT focuses on leading patients
to alter the way they assess distressing thoughts associated with their trauma. Maladaptive cognitions are what keep PTSD patients pigeonholed in their pathology, by helping them learn how to adjust these thoughts clinicians can help them better cope with other symptoms (“PTSD: National Center for PTSD”, n.d.).

PE is a manualized form of psychotherapy that has been shown to reduce anger symptoms and enhance emotion regulation in several different populations, it has also produced results with several non-responding participants. PE has a high dropout rate of 38.5%, as compared to 30% across PTSD therapies. Exposure therapy has a higher dropout rate than CPT but has been found to result in greater changes in symptoms than CPT. The focus in this form of therapy is the approach of memories, emotions, and situations that have been avoided in an attempt to avoid dealing with the distress of the trauma (“PTSD: National Center for PTSD”, n.d.).

A common struggle for veterans, often not addressed by CPT or PE, is an overwhelming sense of loneliness. Veterans suffering from PTSD often feel isolated as a result of a number of factors, including the stigma surrounding mental illness in the military and challenges to acquire treatment related to the VA medical system. Group therapy implements methodology from EBTs in group settings in an effort to combat this crippling issue of isolation. Studies that have been conducted to investigate the efficacy of group therapy on the reduction of combat-related PTSD symptoms have found that although veterans are not often referred to group therapy, symptom reduction is comparable to that seen as a result of CPT. Group therapy provides social support that is not present in other treatments.

Complementary, or accessory, therapies are constructural therapies that accompany an EBT in an effort to enhance the results of the treatment. Such treatments may involve art therapy,
yoga, dog therapy, narrative therapy, equine therapy, as well as many others. The primary therapies that will be considered for the purpose of this study will be art therapy and equine therapy. Typically, complementary therapies do not substitute an EBT, rather they are used in addition to the initial treatment. Patients first attend their CPT session, which is then followed up by an accessory therapy that reiterates what was learned during the EBT session.

If medication were to be prescribed, usually a last measure for PTSD patients, it would be an antidepressant drug. Selective serotonin reuptake inhibitors (SSRI) sertraline and paroxetine are the only two drugs currently approved by the Food and Drug Administration (FDA) for the treatment of PTSD. Although SSRIs may be utilized to alleviate the symptoms of PTSD, they have not been found to achieve high remission rates in PTSD patients. Where CBTs have shown around 60% effectiveness, medication has only resulted in 20-30% effectiveness in diminishing PTSD symptomology (Reisman, 2016).

According to the Veterans Health Administration, treatment as usual (TAU) for combat-related PTSD focuses on a model for life-span development. TAU is a 15-session trauma-focused therapy that starts psychoeducation in the first few sessions. It then progresses to the client writing an autobiography. Once the autobiography is written the remaining sessions are spent reviewing it with a developmental lens that is meant to help the veteran move towards healthy coping mechanisms (Alvarez et al., 2011).

The purpose of this literature review is to evaluate different therapy options for combat-related PTSD. The literature review will cover various psychotherapies including cognitive processing therapy, exposure therapy, group therapy, and complementary therapies and their efficacy in reducing PTSD symptoms in the veteran community. It will explore factors involved in successful treatment as well as complications seen between combat-related PTSD and
treatment. Current treatments for veterans with PTSD have been found to alleviate the severity of symptoms but often do not fully eliminate symptoms.

**Cognitive Processing Therapy as Treatment for Combat-Related PTSD**

Cognitive processing therapy (CPT) is a trauma-focused form of cognitive behavior therapy (CBT). The aim of CPT for veterans is to work through memories of their trauma in a productive way that ultimately reduces symptoms and overall distress. To accomplish this goal, therapists walk clients through learning how to shift their evaluation and perception of maladaptive cognitions. This therapy occurs over the course of 12 sessions (“PTSD: National Center for PTSD”, n.d.).

An early study focused on how effective CPT is in the reduction of the severity of symptoms in veterans with combat-related PTSD (Monson et al., 2006). The study compared baseline symptom severity to reported symptom severity directly after treatment or following a waiting period. CPT resulted in lowered PTSD symptoms as well as improvement in co-occurring symptoms like depression, anxiety, affect functioning, guilt distress, and social judgment. PTSD symptoms that saw the greatest improvement with CPT included reexperiencing and emotional numbing symptoms. This study carried heavy implications that CPT is an efficacious treatment to help alleviate the symptoms of veterans who suffer from PTSD symptoms. (Monson et al., 2006). Before this study, CPT had been identified as an evidence-based therapy (EBT) but had not yet been studied in the context of combat-related PTSD (Monson et al., 2006).

**Influences:**
CBT has been shown to be effective in treating symptoms of PTSD, but little is known about how it impacts the psychosocial issues that arise with PTSD. Monson et al. (2012) set out to determine how different types of social adjustment are affected by wait-list controlled CPT in veterans with PTSD and how those changes are connected with different PTSD symptom clusters. 60 veterans, mostly white, married, males with concurrent comorbid diagnoses and combat trauma were participants for this study. Monson et al. (2012) used an experimental group and a control wait-list group to test social adjustment and different symptom clusters. The experimental group had immediate CPT twice a week, assessments at baseline, mid-treatment, post-treatment, and at a 1 month follow up appointment. The control waitlist group had CPT twice a week at 10 weeks of waiting, assessments were measured at baseline, after 3 weeks of waiting, after 6 weeks of waiting, after 10 weeks of waiting. Social adjustment was measured at baseline and posttreatment, or 6 weeks after waiting. Improvements in avoidance symptoms alone were connected to a decrease in extended family functioning Improvement in this area alone is likely not sufficient to see results in social improvements Monson et al. (2013)’s results differed from hypotheses: only overall, extended family, and housework adjustment significantly improved with CPT compared to the waitlist group. Additionally, they found an association between improvement in emotional numbing and effortful avoidance symptoms and social adjustment improvements. They concluded that these symptoms should be a focus of treatment (Monson et al., 2012).

Comorbidity of alcohol use disorder (AUD) and PTSD is frequently seen in the veteran population. Comorbid cases usually are not promoted to start CPT because it has been assumed that the intensity of CPT would lead to a substance relapse, emotional distress, or the prevention of PTSD symptom improvement (Kaysen et al., 2014). To determine the truth to the above
statement Kaysen et al. (2014) looked into how effective CPT is for veterans who are comorbid AUD and PTSD as compared to those with just PTSD. 536 vets were studied, 49.3% of this sample were comorbid. The comorbid group attended sessions as consistently as the PTSD-alone group, showing no difference in drop-out rate resulting from comorbidity. Both groups demonstrated similar symptom improvement. What differed between the two groups was the initial severity of symptoms. Comorbid patients tended to experience more severe symptoms than the participants who did not suffer from AUD. Clinics have been reluctant to refer patients with a history of AUD to engage in CPT. From the findings of this study, it may be beneficial in the future to change that trend in order to better take care of veterans suffering from PTSD Kaysen et al. (2014).

Effectiveness

Alvarez et al. (2011) looked into the efficacy of CPT compared to treatment as usual (TAU). By holding CPT up to TAU they were able to determine whether or not a manualized EBT is the best treatment to direct veterans with PTSD towards. Their study was one of the first to find that CPT improves the symptoms of PTSD in residential patients significantly more than patients who participated in TAU. This is also some of the first evidence supporting the efficacy of manualized EBT for veterans with PTSD. CPT saw greater improvements in PTSD symptoms, coping style, and quality of life for the veterans that participated as compared to those who attended TAU sessions. Alvarez et. al (2011) conducted 14 sessions of trauma-focused CBT on 104 veterans suffering from combat-related PTSD. Patients identified “stuck points” from the trauma that hold the participant back. Once, thoughts and feelings the patient associated with the event were identified the participants began a process of reappraisal for event and perception of self. With CPT an emphasis was placed on the developing growth in perception of safety, trust,
control, esteem, and intimacy. The 93 veterans that received TAU participated in 15 sessions, most of which were spent reviewing the participant’s autobiography in the context of their trauma (Alvarez et al., 2011).

PTSD symptom severity varies from person to person. Subthreshold PTSD has been associated with an increased risk of psychological and functional impairment, and suicidal ideation. Dickstein et al. (2013) aimed to determine whether or not subthreshold PTSD is treatable with EBTs that are effective as treatment for threshold PTSD symptoms. Subthreshold PTSD is also associated with higher levels of anger, hostility, and aggression. Considering the differences in how symptoms are manifested among those who are subthreshold and threshold, the efficacy of therapies that focus on avoidance symptoms have been questioned for subthreshold patients. Dickstein et al., (2013) followed two groups of patients over the course of their involvement in CPT and compared the magnitude of their symptom improvement. One of these groups was subthreshold, the other was threshold. Four hundred eighty-three participants were in the threshold group, 51 participants were categorized as subthreshold. Both groups demonstrated a decrease in symptom severity, without a significant difference in change between the two groups. The lack of significant difference was interpreted to mean that CPT is an effective way to treat subthreshold PTSD patients. This is an important finding because it validates the use of CPT on patients who may be more likely to demonstrate psychological or functional impairment and who are at higher risk for suicidal ideation. It also enables clinicians to have a realistic expectation for CPT’s impact on symptoms for patients who are subthreshold. Until this study, there were no investigations on whether or not subthreshold PTSD, in particular, is treatable with EBTs (Dickstein et al., 2013).
An important component of engaging clients in therapy is knowing which predictors indicate how a client will respond to treatment in order to optimize the outcome of treatment, this is exactly what Hale, Rodriguez, Wright, Driesenga, and Spates (2018) set out to examine. One hundred twenty-three participants’ symptoms were tracked as they engaged in group-based CPT. The focus was on change in PTSD symptoms over time. Eight or more sessions of residential group-based CPT followed a 22-day residential treatment program. The group-CPT sessions were trauma-focused. To determine predictors several factors were taken into consideration; participants were evaluated on depression, insomnia, and PTSD severity as well as personality traits. This particular study focused on traits such as defensiveness, somatic complaints, tendency to lie, and antisocial behavior. A multiphasic Personality Inventory-2 (MMPI-2) Somatic Complaints scale resulted in a relationship with lesser treatment response. Those who scored higher on the Beck Depression Inventory -II (BDI-II), Insomnia Severity Index (ISI), and MMPI-2 Antisocial Behavior scale did not demonstrate a connection with lower treatment response. Age and education were also found to not have an impact on rate of improvement through therapy. Participants tended to see improvements in their PTSD symptoms throughout treatment regardless of their age, personality traits, or level of education. This demonstrates the overall effectiveness of CPT and its ability to be applicable to a broad population of patients. Participants who had higher scores on the Somatic Complaints scale experienced less improvement in symptoms through CPT than those with lower scores, indicating that individuals who suffer from physical pain may be less willing to accept psychological explanations for their condition because they are overly focused on the physical side and therefore less willing to engage in psychological treatments (Hale et al., 2018).
An underlying issue in recovering veterans struggling with PTSD is the low level of treatment engagement. Drop-out rates for PTSD veteran clients receiving CPT treatment are still rather high. Lamkin, Hundt, Ahear, Stanley, and Smith (2019) hoped to identify personality traits that would be predictors for veterans dropping out of treatment for PTSD. There were three facets of this study: find relations between personality traits and severity of PTSD, assess patterns of engagement compared to previous studies, and identify personality traits that may be associated with veteran dropout rates from treatment. 90 male veterans participated in 12 weeks of CPT, the standard number of sessions. Assessments were performed at baseline before sessions started, posttreatment, and a follow-up three months after completion of the final session. Pretreatment personality and PTSD measures assessments were also conducted. Personality Pathology-Basic Questionnaire consisting of 290 self-reported items used to assess 18 possible maladaptive personality traits. The Posttraumatic Stress Disorder Checklist, consisting of 17 self-reported items, was used to measure the severity of PTSD symptoms in participants. They found positive correlations with PTSD symptoms and lability, cognitive dysregulation, intimacy problems, low affiliation, oppositionality, restricted expression, self-harm, and suspiciousness. Of the participants, 47.8% did not attend all 12 sessions, 31% stopped attending after six or fewer sessions, and 14.4% removed themselves from treatment after one or fewer sessions. No significant association was found concerning personality and attendance. This study did not find that personality traits were predictive of the likelihood to drop from therapy. There was, however, an association for veterans with symptoms of greater severity and neuroticism, detachment, hostility, and interpersonal dysfunction. Although this study was inconclusive of what determines a veteran’s probability to disengage treatment, it suggests intervention or accessory treatment may be important in maintaining attendance.
Steps are being actively taken to further improve the effectiveness of CPT for veterans with PTSD. CPT has indeed been shown to be an effective treatment for PTSD. However, individuals with combat-related PTSD are still less likely to experience remission than noncombat-related PTSD. CPT is generally presented over 12 sessions. Wachen et al. (2019) were curious if an adjustment to the number of sessions in order to accommodate the individual would be beneficial. This study looked into whether service members would benefit from a longer or shorter treatment period and aimed to find predictors for the length needed. Wachen et al. (2019) conducted this study to improve the efficacy of CPT by testing variable-length treatments and identifying how to determine which individuals need more versus less versus standard treatment time to achieve the greatest level of remission. 130 active duty military personnel seeking treatment for PTSD were observed for this study. A baseline session and the initial session were used to document the index trauma for each patient. Participants continued treatment (for up to 24 50-minutes sessions) until a good end state was reached. This is the first study to look into variable-length treatments for combat-related PTSD. Wachen et al. (2019) looked at the difference between internalizing and externalizing psychopathology in relation to treatment outcome (internalizing = poorer outcome due to suppression tendencies, externalizing resulted in poorer outcomes as a result of impulse and aggression tendencies). They are also the first to incorporate neuropsychological predictors of response type to CPT.

**Group Effectiveness with CPT**

Walter, Varkovitsky, Owens, Lewis, and Chard (2014) examined the differences in symptom improvement, demographic variables, and symptom severity between patients who partake in outpatient CPT as opposed to residential CPT. They examined the change in symptom severity for 514 outpatient participants and 478 residential participants. Overall, outpatient
clients were found to be younger, less educated, more likely to be white, employed, married, and from a more recent combat tour. Residential clients, on the other hand, were more likely to have PTSD connected to service than individuals in the outpatient group. The residential group also tended to have more severe symptoms. CPT was found to yield an effective reduction of symptom severity regardless of the setting it was delivered in (Walter et al., 2014).

Research by Schumm and Walter (2013) aimed to increase the understanding of what causes individuals to differ in their response to treatment for PTSD. To do this, they used a general growth mixture model (GGMM) to calculate the trajectory of change in symptoms. The study also aimed to determine if certain pretreatment factors could accurately predict the trajectory of PTSD symptoms during CPT. They used a self-reporting checklist to assess PTSD severity. A semi structured clinical interview, clinician-administered PTSD scale (CAPS), was used to further confirm PTSD severity and frequency of PTSD symptoms along with a PTSD checklist (PCL-S). A Beck Depression Inventory-II (BDI-II) was also utilized to rate the intensity of depression experienced by patients. Before beginning treatment, participants completed a pretreatment diagnostic assessment that included CAPS and BDI-II. Upon completing the assessments, participants attended sessions of CPT until the severity of their symptoms decreased. A three-class model explains how symptoms change differed between individuals during CPT. They found the three groups showed three distinct trajectories in regards to their PTSD symptom improvement. Class one consisted of roughly 19% of the population. Participants in this grouping demonstrated the highest scores on the PCL-S checklist. Class one was defined by the highest ratings of depression and PTSD symptoms. They saw a significant decrease in the severity of symptoms. However, even with improvements through treatment, class one patients still reported moderate severity for PTSD symptoms and high severity for
depression following the completion of therapy. The majority of participants classified as class two; these patients had a median score on the PCL-S and experienced the greatest improvement in symptoms. Class three patients presented the lowest severity for PTSD symptoms and depression as well as the lowest scores on the PCL-S. These participants showed moderate improvements in severity. (Class 2 > Class 3 > Class 1). The dramatic improvement of class two PTSD veterans was interpreted as encouraging since it implies the majority of veterans would greatly benefit from CPT since most veterans would classify under class two, and that veterans classified as class two may be expected to show consistent, dramatic improvements in symptoms (Schumm & Walter, 2013).

**Cognitive Processing Therapy Compared to Exposure Therapy in the Treatment of Combat-Related PTSD**

Clinicians tend to refer patients to CPT above other forms of trauma-focused therapy. For this very reason Rutt, Oehlerl, Krieshok, and Lichtenberg (2018) studied the effectiveness of PE as opposed to CPT for improving the symptoms of veterans with PTSD. This was a retrospective study that reviewed charts from 374 participants that attended sessions of PE for treatment from 10 states’ veterans’ affairs offices. The symptom improvements seen with PE were comparable to those seen in CPT. PE successfully decreased the overall score of participant’s Posttraumatic Stress Disorder Checklist. This particular study found a slightly greater reduction in PTSD symptoms in individuals who participated in PE (22% improvement) than those who participated in CPT (20% improvement), however, this difference was not clinically significant. This study found significant results for PE’s effect on symptom severity in veterans with PTSD but suggests more research needs to be done to determine factors involved in the high dropout rates associated
with PE. The level of symptom reduction was much higher for individuals who completed all
sessions of PE than those who dropped out early (Rutt et al., 2018).

Steps have been made in the past to make treatment for PTSD more accessible since it is
one of the leading mental health issues with today’s veterans. This has been accomplished
through CPT and prolonged exposure therapy (PE). All veterans with a diagnosis have the
opportunity to participate in CPT or PE, but it is up to the individual whether or not they take
part in the treatment options. Mott et al. (2014a) strove to identify characteristics that may be
linked to the likelihood for an individual to engage in PE or CPT. Of the participants, 11.4%
initiated in evidence-based psychotherapy (EBP), the other 88.6% did not initiate treatment. All
91 of the EBP initiating participants’ files were assessed, a random selection of 66 out of the 706
non-initiating participants were assessed to review character traits and how they fared with the
psychotherapy or lack-there-of. A within treatment-seeking sample showed that Operation
Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND)
veterans were less likely to engage in therapy than veterans from other combat tours. More
participants engaged in PE (8.5%) than CPT (3.0%), perhaps showing treatment preferences of
the individuals or the clinics, but this is not considered to reflect on the therapy’s effectiveness.
An overwhelming majority of PTSD veterans are choosing to not engage in either of these
treatments. PE resulted in a dropout rate of 30.9%, which is similar to the result of past studies.
CPT had a dropout rate of 50.0%, exceeding the rate seen in previous studies. This may be a
result of the small sample that chose to begin CPT. Suggests future research on the efficacy of
non-EPB related treatment. They found that the veterans who did choose to engage in CPT or PE
were a heavily diverse population. Suggested further studies ought to determine if this diversity
has any impact on reception to treatment or likelihood to engage (Mott et al., 2014a).
In the past, it has been estimated that around 6-13% of veterans suffering from PTSD attend PE or CPT. Hundt, Harik, Thompson, and Barrera (2018) compared current rates of Prolonged Exposure (PE) and CPT with rates from a decade ago to evaluate the relevance of these practices. The purpose of this study was to provide an updated examination of changes in processes, training, structure, and support in the clinic that would account for recent increase in the application of PE and CPT. Clinic’s staff increased from four full-time psychologists to eight full-time psychologists. The veteran’s affairs clinic (VA) would refer veterans to therapy, but the service members were not required to attend. Although a variety of therapies are available, PE and CPT are promoted to clients as a first line of treatment. It was reported that 52.4% of veterans enrolled in therapy attended sessions of either PE or CPT (Hundt et al., 2018). CPT was found to be more commonly used, 37.8% as opposed to 16.5% who attended PE (Hundt et al., 2018). This is a dramatic increase of 41% from the reported number of service members attending therapy between 2008 and 2012 in the current study demonstrated a case example showing an upward trend in the use of CPT in a VA clinic. The upward trend indicates the efficacy of current training for evidence-based psychotherapies (EBPs). The VA system also underwent a structural change in which the criteria for patients who were referred to the clinic changed from the presence of any stress or trauma-related disorder to just those whose primary diagnosis was PTSD and who would potentially see improvements in their symptoms from CPT. This was a critical change that has allowed this clinic to place a greater emphasis on specializing in PTSD related therapies (Hundt et al., 2018).

A two-pronged study, Rosen et al. (2019), examined factors associated with the initiation of CPT or PE and identified clinical as well as demographic factors associated with initiating CPT or PE. 6,251 participants across several clinics were examined. One-third of patients with
PTSD, at the clinics they pulled from, engaged in CPT or PE. Patients who experience psychiatric hospitalization during the 12 months were 29% less likely than the rest of the population to engage in CPT or PE. A negative association was found between service-connected disability for PTSD and the initiation of CPT or PE. It is still inconclusive why this association exists. Hispanic veterans were 19% less likely to engage in CPT or PE. Patients who initiated in CPT or PE were more likely to have comorbidity than those who did not engage in CPT or PE (Rosen et al., 2019).

**Exposure Therapy as Treatment for Combat-Related PTSD**

PE is another manualized form of evidence-based psychotherapy. Dropout rates for PE have been found to be relatively higher than what is seen with CPT. However, those who stick with PE have been found to experience significant improvements in PTSD symptoms, comparable to CPT results. It is important to identify what factors may be causing the high dropout rate in order to make this treatment as affective as possible. PE encourages clients to approach memories, emotions, and situations that have been avoided in an attempt to avoid dealing with the distress of their trauma (“PTSD: National Center for PTSD”, n.d.).

Ford et al. (2017) investigated at what rate PE reduces PTSD symptoms, anger problems, and improvements in emotional regulation. This pilot study also monitored the dropout rate for PE among participants. Participants were randomly assigned to PE or another treatment. Deployment Risk and Resilience Inventory (DRRI), performed as an interview, was used to develop a baseline of combat-related trauma. The State-Trait Anger Expression Inventory Trait Anger subscale, a 10-item self-report survey, was used to evaluate anger problems among participants. The Generalized Expectations for Negative Mood Regulations (NMR), a 30-item self-report, was used to assess the ability to deal with negative emotional states. PE is executed
through manualized guidelines. The first two sessions are spent educating the patient about PTSD, identifying the trauma, walking through an in vivo experience, and learning breathing techniques. A lot of PE is spent practicing imaginal exposure, in which the participant pictures themselves re-experiencing the trauma. PE was spread over 10, 75-90 minutes, sessions. Participants assigned to PE showed significant improvements in PTSD symptoms as well as improvements with their anger problems, however, the dropout rate for PE was extremely high, at 65%. When patients stick with PE, it yields positive results, but there seems to a problem with getting people to return to PE sessions (Ford et al., 2017).

In order to determine the most effective form and duration of exposure therapy in treating veterans with PTSD Foa et al. (2018) compared impact on PTSD symptom severity through a randomized clinical trial that treated patients in massed prolonged exposure therapy (massed therapy), spaced prolonged exposure therapy (spaced therapy), present-centered therapy, and a minimal-contact control (MCC). Prolonged exposure therapy is a manualized CBT that focuses on re-exposing the patient to memories or stimuli from their trauma and helping them work through the thoughts and emotions that arise from the in-vivo experiences. Massed therapy required clients to attend daily sessions followed by listening to an audio recording of the session to assist them with processing the emotional experience. With daily sessions, the treatment was completed in two weeks. Spaced therapy used the same techniques as massed therapy, but the 10 sessions were spread over eight weeks. In the past, most prolonged exposure therapy has been carried out in a spaced-therapy format. PCT is not a trauma focused, manualized, therapy that focuses on present problems in the patient’s life rather than strictly PTSD related problems. Sessions of PCT are weekly or bi-weekly, similar to spaced-therapy. MCC consisted of short, weekly, telephone calls from a therapist. During the 10-15-minute phone calls, therapists
checked in on the wellbeing of the clients and the clients were provided support. Massed therapy produced a greater decrease in PTSD symptom severity than MCC and was on par with the results from spaced therapy. A difference was found between massed therapy and spaced therapy in that massed therapy produced a lower dropout rate. There was a small difference in symptom severity improvement with PCT, but this difference was not big enough to be clinically significant suggesting that, although trauma-focused therapy does improve symptom severity in veterans with PTSD, it may not be necessary (Foa et al., 2018).

**Group Therapy as Treatment for Combat-Related PTSD**

A common struggle for veterans suffering from PTSD is an overwhelming feeling of isolation. Group therapy combines methodology from EBTs into a group setting in an effort to create a support system for veterans to cut back on the confounding effects of isolation on PTSD symptoms. Few studies have been conducted on the efficacy of group therapy on the reduction of PTSD symptoms in veterans (“PTSD: National Center for PTSD”, n.d.). Those studies that have been performed tend to find that although veterans are rarely referred to group therapy, the symptom reduction seen in this treatment holds up when compared to EBTs such as CPT. The biggest difference between results for CPT and group therapy is the improvement of feelings of isolation in addition to a reduction of PTSD symptom severity.

**Efficacy**

CPT has been established as efficacious in treating PTSD in veterans. Knowing this, Reisick et al. (2015) compared two types of group therapy against CPT to test the efficacy of group therapy as a treatment for veterans with PTSD. They tested if two types of group therapy, group CPT-C and group present-centered therapy (PCT) could stand up against the efficacy of
CPT for veterans with PTSD. They hypothesized that the CPT-C would be more effective than the PCT. 108 service members were randomly assigned to CPT-C or PCT with 8-10 participants in each therapy group. Two 90-minute meetings were held every week for six weeks. Sessions were followed by individual assessments that provided baseline levels for symptoms. They took adverse events (AEs) into account by having clients self-report significant events from the week before each session. AEs are rarely monitored throughout clinical studies. Both groups saw improvements in PTSD symptom severity; these improvements continued even after the sessions ended. There was a higher dropout rate in the CPT-C group than the PCT group. CPT-C saw only 9% of participants complete all 12 sessions, where PCT had 19%. CPT-C is a past focused therapy in which the participants talk about their trauma, why they think the trauma happened to them, how they feel like it impacted them, how those beliefs could be distortions of reality, and how to readjust in order to be in touch with the reality. They also work through how to process those experiences and emotions. PCT is a future focused therapy in which participants are encouraged to not focus on the traumatic event itself but on the symptoms they currently experience. Sessional themes are directed by the group. There was not a difference in the number of AEs experienced across sessions between the two groups. This study found that group therapy effectively decreased PTSD symptom severity in service members with combat-related trauma. Although both conditions saw significant results, CPT-C was found to be more slightly more effective than PCT. This study also found that group therapy was effective when held up to CPT

(Reisick et al., 2015).

Group therapy has been found to be an effective form of treatment for veterans with PTSD, but there have not been studies conducted on efficacy across minorities. African Americans have been found to have a higher risk of developing PTSD following a combat
deployment (Coleman, Lynch, Ingram, Sheerin, & Rapport, 2018). There a need for clarity on the possible effects of ethnocultural variables on veterans as a community. Coleman et al. (2018) determined the efficacy of group therapy across racial groups. More specifically, this study focused on the reduction of symptoms in non-Hispanic African Americans and if there were any existing racial differences that impacted efficacy of group therapy as a treatment. 515 vets participated in group therapy for this study. Group therapy has been shown to decrease social isolation, social avoidance, emotional detachment, and numbing. It improves coping strategies, development of social support, and rebuilding the connection to both the self and others. There was no difference in the reduction of symptoms between non-Hispanic white patients and non-Hispanic African American patients, validating the effectiveness of group therapy as a treatment that works across racial groups. This study also demonstrated positive results for veterans involved, regardless of which group they were in, showing efficacy regardless of group (Coleman et al., 2018).

Levi et al. (2017) looked into the effectiveness of psychodynamic group therapy (PGT) for 158 veterans with PTSD. PGT was conducted in 15, 90-minute, sessions. The treatment was presented in four stages: group building, differentiation of group members, intimacy building, and termination. A record was kept of PTSD and depression symptom severity, level of functioning, and hope felt by the participants. PGT was associated with decreases in depression and PTSD symptoms. These results were maintained at least 12 months, at which point a follow-up was conducted. PGT was associated with improvements in symptoms of PTSD in veterans who were treated in this study (Levi et al., 2017).

Britivic, Radelic, and Urlic (2006) tested the efficacy of long-term group therapy in treating PTSD in veterans over a five-year study. They accomplished this by looking at PTSD
symptom improvement, neurotic symptoms, and defense mechanisms employed in the study in 59 veterans. 42 of the 59 completed all five years of the study. The goal was to help participants reach a level of relief from their PTSD symptoms, enhance adaptation mechanisms, and repair their sense of self as well as their connection with others. Britvic et al. (2006) hoped to accomplish this over the span of five years of weekly, 90-minute therapy sessions. Each of these sessions was meant to establish a sense of security for the participants so they would be able to disclose traumatic experiences and open up to self-discovery. This study demonstrated the importance of long-term group psychotherapy. It resulted in a reduction of PTSD symptom severity but did not significantly alter neurotic symptoms or defense mechanisms. These factors were determined to be too ingrained in the veterans to be greatly impacted by therapy. There was a drastic decrease, across the participants, in mental health around the two-year mark. This lined up with when clients began to feel a sense of security in the group. They opened up about their traumatic event, sharing it with the group. This sharing resulted in feelings of guilt and shame. All of the participants had to face both their own disturbing memories and those of their peers. By the end of the five years, this dip had rebounded, resulting in significant improvements in PTSD symptom severity. Staying with the long-term group therapy was beneficial to participants in the long-run because it helped them identify and work through those feelings of guilt and shame (Britvic et al., 2006).

A common effect of PTSD is the loss of security with the self as well as with others. The presence of trust is imperative in group therapy. Although it has been assumed that if clients do not feel secure during group therapy sessions little to no progress will be made little research has been done to test the impact of trust. Williams et al. (2014) used the investment ratio (IR), a measure of interpersonal trust, to gain a greater understanding of how interpersonal trust effects
veterans with PTSD through group therapy. They compared a long-term process group (LTP), a short-term CPT group, and control subjects who received medication but did not partake in psychotherapy. The LTP group attended weekly, 90-minute, sessions and consisted of six participants. LTP focused on improvements with interpersonal relationships, coping with PTSD symptoms, and regulation of emotion. Measurements were conducted with an Iterated Trust Game. The game is played by two participants and centers around expression and reciprocation of trust through a cycle of payments and investments in peers. When the cycle was successful there was a positive trend to continue the cycle, but when the cycle was unsuccessful there was a negative trend that resulted in deterioration of the cycle. At the end of the game, the IR can be used to quantify an individual’s level of trust. CPT and controls engaged in the Iterated Trust Game before and after the standard 12 weeks of treatment. A PTSD checklist (PLC) was used to keep track of the progress of PTSD symptom severity. Williams et al. (2014) found LTP to be the most effective form of treatment in improving behavioral measures of trust as compared to CPT and medication. In the future, it would be beneficial to determine whether PTSD treatment should focus more on PTSD symptomology, behavioral components, or both in order to best promote recovery from PTSD (Williams et al., 2014). Effective treatment for combat-related PTSD would ideally address both the symptoms and the related behaviors.

Another study, Cox, Owen, and Ogrodniczuk (2017), furthered the research done on the effect of social support in the treatment of PTSD in veterans and the factors that make it more effective. Cox et al. (2017) investigated two of four therapeutic factors for group processes, focusing their efforts on secure emotional expression and social learning. In addition to PTSD causing a sense of lost security, the nature of the military is uniquely reliant on community. Many veterans, even those without PTSD often suffer from the loss of built in support upon
retirement. This effect is further exacerbated in veterans with PTSD. Improving social support in this population has been found to be linked to a decrease in PTSD symptom severity. Symptom severity was assessed through the PCL, self-reported questionnaire. Perceived social support was measured by the Interpersonal Support Evaluation List-Short Form (ISEL-SF), a self-report questionnaire. Therapeutic factors in the group setting were measured by the Therapeutic Factors Inventory-Short Form (TFI-SF). Cox et al. (2017) monitored 117 veterans through a multimodal veteran transition program that emphasized group processing theory. Group sessions occurred over the course of 10 eight-hour days to enhance cohesion in the group dynamic. Through an examination of group therapeutic factors Cox et al. (2017) found that the improvements in social support fostered by secure emotional expression and social learning were beyond the effect of PTSD symptom reduction. These results are likely a product of the veteran’s perception of being accepted, leading them to engage more with others.

**Rates**

Roughly 6-13% of veterans who suffer from PTSD are referred to and attend, PE or CPT. Hundt et al. (2018) compared rates from 2008 to current rates of PE attendance to assess the relevance of the treatment. In the ten years between the original assessment and Hundt et al. (2018), the staff of the clinic doubled from four to eight full-time psychologists. PE was consistently one of the most referred treatments in the clinic. Even so, PE did see an increase in attendance between 2008 and 2018. By 2018 16.5% of veterans enrolled in therapy attended PE. Although this is a large chunk of the population, CPT still saw a greater number of attendants at 37.8%. Together the two treatments saw an upward trend from 11.4% to 52.4% veterans enrolled. These results demonstrate the growing efficacy of PE as a treatment for veterans with PTSD. Clients who are referred to PE used to have a diagnosis of any stress or trauma related
disorder; they now must have a primary diagnosis of PTSD which enables greater specialization in helping clients suffering from combat-related PTSD. As a result, the upward trend will likely continue. However, it should be investigated why PE is being used as treatment for veterans with PTSD much less than CPT.

To determine which baseline characteristics and PTSD symptoms predict early dropout from PE Eftekhari, Crowley, Mackintosh, and Rosen (2019) examined 2,626 veterans, 802 of these were non-completers and 1,824 were completers of treatment. Standard VA biweekly measures of symptoms were performed. Eftekhari et al. (2019) were unable to consistently or accurately identify who was likely to drop out of PE. There was a lower retention rate for younger veterans, but this was for all types of PTSD treatments, and for all symptom severity. Their results indicate the dropout rate may have more to do with demographics than with the type of treatment. There was not an increase in the risk of dropout associated with symptom severity or symptoms of depression. Bimonthly measurements of symptoms may be too few measures for accurate monitoring as fluctuations in symptoms were not predictive of the likelihood of dropping out. If there were more frequent measures performed, in which more detailed changes in symptoms may be recorded, symptoms and coping mechanisms linked to an aversion to PE or dropout from therapy may be more easily identified (Eftekhari et al., 2019).

One-third of service members who have deployed for OEF and OIF have been diagnosed with a psychiatric condition, one of the most pervasive being PTSD. In the past, there have been conflicting recommendations for the method in which a first line of support for these veterans may be supplied. One of these is to turn to medications as a first resort, the other is to encourage service members to engage in psychotherapy. Mott, Barrera, Hernandez, Graham, and Teng (2014b) conducted a study with 388 veterans to track and examine rates of referral by VA clinics
for medication, individual therapy, and group psychotherapy and to determine if patient
demographics and characteristics traits may be a factor in the type of treatment referred. Participants
were enrolled in trauma recovery with the VA from 2004 to 2008. Participants of this study must
have served in at least one tour in support of OEF or OIF and must have met the criteria for a
PTSD diagnosis during their mental health evaluation. These evaluations are mandatory for all
service members upon their exit or retirement from service. They collected this data from charts
of mental health evaluations from OEF and OIF. Only 24% of the veterans in this sample were
referred to participate in group therapy. Patients who engaged in group therapy were more likely
to be older, employed, of an ethnic minority, and diagnosed as comorbid with an anxiety disorder
than those who were referred to a different treatment type. The factors this study found that
predict referred treatment type seem to indicate more influence of provider preference than
patient preference. This includes resources available to the provider. Rates were highest for
medical references, second for individual psychotherapies, and lowest for group therapy,
mimicking the national trend for PTSD treatment referrals (Mott et al., 2014b). Although group
therapy has been found by some studies to result in a slightly lower reduction of symptoms than
other therapies it has been shown to result in higher levels of adherence. This is critical. It is
likely group therapy provides advantages, such as a sense of community, social support, and
accountability not provided by other types of therapy. These seem to be important factors,
especially for OEF and OIF veterans, in their decision to remain engaged in therapy. It was
suggested by Mott et al. (2014b) that in the future these finding should be investigated in
reference to how benefits associated with individual therapy may be applied to group therapy.

Complementary and Accessory Therapies as Treatment for Combat-Related PTSD
It is thought that alternative therapies may reduce the perceived stigma involved in engaging in therapy and would result in lowered resistance to attending sessions. Wharton, Whitworth, Macauley, and Malone (2019) conducted a pre/post-quasi-experiment with a focus on trauma and trauma-related guilt. An alternative method of CPT that was equine-facilitated (EF-CPT) was compared to CPT on its own to determine if EF-CPT is able to effectively lower symptom scores. Wharton et al. (2019) used PLD, a PTSD checklist, to measure change. The standard 12-sessions of CPT were accompanied by weekly equine-facilitated techniques. Sessions were randomly reviewed. Clinical interviews were performed before the sessions began. Twelve CPT sessions partnered with equine-facilitated therapy. Equine facilitation (EF) furthered what was discussed in CPT. For example, a later session may involve hard questions and growing self-confidence during the CPT session. EF would involve approaching a horse and leading it, followed by a discussion about the horse’s level of discomfort, and then a transition into the client’s feelings about boundaries and having boundaries violated. Equine therapy, when combined with CPT, showed a 44% – 24% increase in efficacy as compared to CPT alone. Wharton et al. (2019) found individuals who suffer PTSD symptoms may also suffer from guilt-related distress. The intervention used in this study lowered levels of guilt-related distress in addition to PTSD symptoms. Before this study, it was identified that veterans have a habit of approaching therapy with caution. Wharton et al. (2019) took this into account and incorporated enough time during sessions to complete and “homework” the veterans had not completed on their own time to control for the caution associated with this population.

To determine whether or not adding art therapy to CPT results in greater improvement of PTSD symptoms than CPT on its own Campbell, Decker, Kruk, and Deaver (2016) randomly assigned participants to CPT alone (control) or CPT-AT (art therapy). Eight sessions of treatment
were conducted on veterans in residential treatment for combat-related PTSD. No restrictions were placed on age, gender, era of combat experience, or service branch. The sessions for CPT were conducted according to the first eight sessions in the CPT manual. CPT-AT was conducted in 75-minute art sessions in addition to the CPT session. Semi-structured interviews were conducted along with the introduction to art. Clients created visual representations of their trauma narrative that was made during CPT. Lots of visualization was required to complete artistic tasks. Although there was not a statistical difference in the change of depression symptoms between the control group and the experiment, this study found a “trend towards greater reduction in depression symptoms” in the experiment group (Campbell et al., 2016). Both control and experiment group showed symptom improvement. The experiment group did not have any participants drop out, but the control group (with just CPT) had a 40% dropout rate. CPT-AT may not alter the efficacy of treatment, but it may encourage engagement in treatment, which would result in a greater number of people reaching a good state simply because they stuck with treatment. The greatest contribution of this study was the improvement in trauma processing seen with AT. It was determined that AT may be a helpful addition to CPT, but further studies are still needed to determine significance (Campbell et al., 2016). Campbell et al. (2016)’s very small sample size of eleven people resulted in strict limitations. With a greater sample size, it is possible this trend could demonstrate significant results.

Discussion

Combat-related PTSD is a complicated disorder that is the culmination of several different issues that interfere with day-to-day functioning and is intertwined with several outside factors. Because PTSD is such a complex disorder, it is difficult to have a treatment that is both broad and specific enough to target symptoms case by case. Current therapies used to
treat PTSD include cognitive processing therapy, exposure therapy, group therapy, and complementary therapies. All of the treatments discussed above have been found to be successful in alleviating symptoms of PTSD in combat veterans.

Some of the biggest issues with the treatment of combat-related PTSD are high dropout rates and a lack of compliance with treatment. When veterans follow through with treatment, the current treatments have been found to be efficacious in reducing the severity of PTSD symptoms. The next step is finding a way to get veterans to stay in treatment.

The root of the problem with compliance and dropout is the stigma that surrounds PTSD in veterans. Avoidance behaviors stem from this negative association. Waitlist groups were found to have much higher dropout rates and lower levels of success with improving symptoms. This is likely a result of veterans having more time to strengthen the negative association between being in treatment and being seen as defective by their peers. The longer they wait to begin treatment the more outside influences may bring them away from engaging in therapy.

Isolation created by peers, society, and self

Aside from compliance and dropout, PTSD psychotherapies have been found to significantly improve symptom severity in veteran patients. CPT is the most tested form of treatment for this community, currently making it the most supported form of treatment for PTSD. Exposure therapy has been shown to be just as effective as CPT in decreasing symptom severity but has recorded higher dropout rates compared to CPT. Group therapy addresses a factor of PTSD not touched on by CPT or PE, being the strong feelings of social isolation experienced by the veteran. And finally, complementary therapies, while not often used alone, magnify the effects of EBTs such as CPT and PE.
References


PTSD: National


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