Prolonged Exposure: An Effective Treatment for PTSD in Military Personnel

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Abstract
This paper describes prolonged exposure therapy, an empirically supported treatment for PTSD. The treatment has been applied with success in reducing PTSD symptoms in civilians and military personnel. After presenting the theoretical foundation for the treatment, the core elements of in vivo and imaginal forms of prolonged exposure therapy are presented. Empirical studies are cited that either lend support to or identify limitations of administering prolonged exposure therapy to military personnel. Research on the cross-cultural usefulness of prolonged exposure therapy with military personnel is needed.

Keywords: PTSD, prolonged exposure, military personnel

Introduction
More than thirty years of treatment-outcome research has shown that psychotherapy is more effective than other interventions in treating posttraumatic stress disorder (PTSD) (Cukor et al., 2010; Garske, 2011).

One meta-analysis found that 67% of individuals completing psychotherapy no longer met the criteria for PTSD whereas 56% of those who dropped out no longer met the same criteria (Bradley et al., 2005).

Furthermore, 54% who completed treatment and 44% who dropped out experienced clinically meaningful improvement. This means that about two-thirds of those who completed psychotherapy no longer met the criteria for PTSD (Bradley et al., 2005).

Although research on the treatment of PTSD with active military personnel and veterans is lagging in comparison to research on civilians with PTSD, researchers are nonetheless justified in recommending psychotherapy as an effective treatment for military personnel with PTSD (Peterson et al., 2011).

There is consensus that prolonged exposure therapy (PE), a trauma-focused cognitive behavioral therapy, has broad empirical and clinical support (Wisco et al., 2012).

PE was identified as a gold-standard treatment for PTSD by the Institute of Medicine in 2008 because it focuses on exposing individuals to the trauma and processing traumatic memories that are the source of their distress (Hoyt and Candy, 2011).

Furthermore, PE can assist individuals to identify maladaptive cognitions resulting from the traumatic event that contribute to their symptoms (Creamer et al., 2011).

Theoretical Foundation
After an individual experiences trauma he or she adopts protective responses, such as avoidance.

These protective responses, however, may prevent the survivor from properly understanding the traumatic event or
developing a realistic view of it. An inaccurate or dissociated perspective of a traumatic event can have negative consequences for the survivor, including retraumatization (Garske, 2011).

According to Garske (2011), “the key element of the psychotherapy of people with PTSD is the integration of the alien, the unacceptable, the terrifying, the incomprehensible” (p. 33). Traumatic events that individuals endure must be integrated into their history and experience such that that no longer feels alien.

Furthermore, the survivor must unlearn the negative cognitions that underlie their fear and avoidant behaviors. The two most common negative cognitions for military personnel are “the world is an extremely dangerous place” and “I am no longer competent to serve in the military” (Peterson et al., 2011, p. 43).

As noted, PE is considered a gold standard treatment PTSD in returning veterans from Iraq and Afghanistan (Friedman, 2006). In PE, a service member is repeatedly exposed to stimuli that are directly and/or peripherally associated with the traumatic event as a means of gradually reducing distress until maladaptive symptoms become more manageable or remit (Freidman, 2006; Garske, 2011).

According to Reger and Gahm (2008), PE is based on emotional processing theory, which presumes that individuals suffering from PTSD possess fear structures that contain information about the traumatic event, schemas that impose meaning on the event, and behavioral responses to reminders of the event. Fear is an adaptive reaction to threatening events, and the fight-or-flight response can assist individuals under threat to protect their physical and psychological integrity (Peterson et al., 2011). Individuals with PTSD, however, tend to overgeneralize threat and to avoid situations and stimuli associated with the traumatic event or memories about the event. Thus, PTSD may be viewed as “a disorder of extinction, whereby the individual’s response to crisis does not diminish sufficiently, and the association between the memory of the event and a message of danger has not been extinguished even when the danger has passed” (Cukor et al., 2010, p. 83).

Military personnel with PTSD find it difficult to distinguish threatening combat situations from non-threatening everyday situations. Without testing the validity and usefulness of their fear structures, service members become trapped in a debilitating pattern of thinking and behavior.

In order to unlearn and correct maladaptive beliefs, fears, and behavior, military personnel must replace their existing fear structures with more adaptive alternatives (Garske, 2011; Peterson et al., 2011). By exposing the service member to feared situations or stimuli in a safe environment, he or she is able to experience these situations and stimuli as less threatening than expected (Peterson et al., 2011).

This allows for new learning to become established; the service member learns that the world is not as dangerous as they believe, and that they are able to successfully manage the distress related to their trauma (Peterson et al., 2011). This leads to a decrease in negative thinking and avoidant behavior (Reger and Gahm, 2008).

**Treatment Procedure**

PE is a manualized treatment with four main components: education, breathing retraining, in vivo exposure, and imaginal exposure (Foa et al., 2007; Wisco et al., 2012). PE most often begins with psycho education about common responses to trauma including: anxiety or fear, depression, guilt or shame, irritability or anger, hyper vigilance, emotional numbing, flashbacks or nightmares, loss of concentration, lowered self-esteem, and feeling as if one is “going crazy” (Foa et al., 2007). This information often leads to an exploration of specific symptoms that military personnel suffer (Peterson et al., 2011). As part of the informed consent process, the therapist explains the rationale and procedures of PE,
which may also instill hope that PTSD symptoms can be alleviated through treatment. Most therapists then work with the service member on breathing retraining, a strategy used to decrease physiological arousal that is caused by elevated anxiety (Foa et al., 2007). Some techniques include slow breathing (vs. fast and shallow breathing associated with arousal). In slow breathing, the service member is trained to exhale slowly, concentrate on the form of breathing, pause after each exhalation, and finally inhale slowly. This rhythmic breathing pattern is initially guided by the therapist, with military personnel encouraged to practice slow breathing in between sessions in order to become more adept at reducing physiological arousal and increasing perceived self-control (Peterson et al., 2011). Because the in vivo and imaginal exposure components of PE involve the induction of arousal, as will be described, breathing techniques should not be used during the exposure per se, but rather after exposure to return the service member to a baseline level of distress.

**In Vivo Exposure**

In vivo exposure involves presenting military personnel with real situations or stimuli related to the traumatic event that they have avoided due to anxiety (Peterson et al., 2011). Loud noises or bright flashes that resemble a firefight may evoke a startle response, and therefore are stimuli suitable for in vivo exposure. After identifying appropriate situations or stimuli, military personnel rate their distress for each with the 100-point Subjective Units of Distress Scale (SUDS). The service member and therapist next develop a fear hierarchy, or a list of feared situations or stimuli, according to the level of distress they elicited (Center for Deployment Psychology, 2012).

The therapist then assists the service member in progressing through the hierarchy, beginning with the least distressing situation or stimulus and moving on to more distressing one. Military personnel typically experience anxiety upon initial exposure. However, they are encouraged to remain exposed to the stress-provoking situation or stimuli for about 30-45 seconds or until their distress decreases by at least half (Peterson et al., 2011). Thus, as military personnel are exposed in vivo they experience a gradual decline in symptoms due to the integration of new information about their actual level of safety, which can be thought of as a form of counter conditioning (Cukor et al., 2010).

**Imaginal Exposure**

Imaginal exposure is also used as a means of helping military personnel address their traumatic experience. It utilizes the same approach as in vivo exposure, but rather than exposing the service member directly to actual situations or stimuli, he or she revisits the traumatic event via memory (Center for Deployment Psychology, 2012; Peterson et al., 2011). For example, military personnel may be asked to retell or rewrite the narrative of their trauma, which requires them to repeatedly confront the details of the memory that they may otherwise consciously or unconsciously avoid.

The service member and therapist work together to identify “hot spots” of the memory which are specific elements of the memory that are highly distressing (Peterson et al., 2011). While military personnel retell the story, they visualize the memory in as much detail possible, incorporating sensations, sights, sounds, tastes, thoughts, and of course emotions.

With repeated exposure to the imagined traumatic event, the service member typically experiences more realistic fact-based accounts of the recalled event that disconfirm inaccurate beliefs, including the inevitability of the event occurring again (Institute of Medicine, 2012).

Imaginal exposure aims to help military personnel with several tasks: to relive the traumatic experience in a safe environment rather than avoid it, to promote habituation to the traumatic event and thereby decrease distress, and to incorporate new
information from remembering the traumatic event that was previously forgotten or avoided in order disentangle the memory from here-and-now experience (Center for Deployment Psychology, 2012; Peterson et al., 2011).

Imaginal exposure can also help military personnel to differentiate between the traumatic event and other life events (i.e., to recognize the traumatic event as distinct and isolated), gain mastery over trauma, and identify, analyze, and reframe negative evaluations about themselves based on the trauma. Imaginal exposure is a valuable treatment option in cases where in vivo exposure is not possible; this may be particularly relevant given the extreme fear structures that military personnel are likely to possess (Gray and Zide, 2006).

**Treatment Outcome Research**

According to the Institute of Medicine (2012), more randomized control trials exist for PE than any other psychological treatment for PTSD. These randomized control trials along with a recent meta-analysis showed that PE markedly reduced PTSD symptoms (Bradley et al., 2005; Powers et al., 2010). Rauch et al. (2009) found that PE diminished symptoms of PTSD as well as anger, anxiety, depression, and guilt. PE has been shown to be effective in treating a variety of traumatic events, including sexual abuse and assault, industrial and motor vehicle accidents, combat-related traumas, and torture (Center for Deployment Psychology, 2012; Garkse, 2011). Furthermore, PE has been used successfully with diverse cultural and socioeconomic populations (Peterson et al., 2011). The large effect sizes for symptom reduction, applicability to a broad range of traumas, low probability of relapse, and sustained amelioration of PTSD symptoms following treatment all suggest that PE is a promising treatment for military personnel with PTSD (Peterson et al., 2011).

The U.S. Veterans Administration / Department of Defense (2010) Clinical Practice Guidelines for the Management of Post-Traumatic Stress supports the use of PE with military personnel and veterans because it is such an effective intervention. Unfortunately, like general research on PTSD in military personnel, there are relatively few studies of the outcomes of PE with service members (Peterson et al., 2011). Early studies of PE were conducted with Vietnam veterans. Keane et al. (1989) found that relaxation and imaginal exposure with a sample of Vietnam veterans reduced flashbacks, memory deficits, startle responses, difficulty concentrating, impulsivity, and irritability. Two areas that did not show improvement were numbing and avoidance, which are key dimensions of PTSD.

In 2005, Cigrang et al. reported three case studies of active-duty military that experienced combat-related trauma resulting in severe symptoms of acute stress disorder which threatened their ability to remain deployed. The researchers administered a four-session adaptation of PE in the theater of combat. After 5 weeks, military personnel experienced an average reduction in symptom severity of 56%, placing them under the threshold for a diagnosis of acute stress disorder. Later research by Bryant et al. (2008) demonstrated that the full PE treatment protocol was more successful than administering selected components of the treatment. Rauch et al. (2009) also used PE to treat 10 combat veterans with chronic PTSD and found that PTSD symptoms were reduced by about half. Similarly, Nacasch et al. (2011) found a significant decrease in the severity of PTSD and depressive symptoms both at post- treatment and 1 year after treatment in military personnel who received PE; the control group, whose participants received psychodynamic treatment and/or medication and counseling, showed no reduction in symptoms. Based on these findings, it is seems reasonable to conclude that the full treatment protocol for PE may provide an effective treatment in combat zones for reducing the severity of acute and more enduring trauma symptoms and preventing the retraumatization of military that remain on active-duty.
In 2007, Schnurr et al. conducted a study with women veterans that compared the outcomes of PE with person-centered therapy. Only 5% of the women reported traumatic events that occurred during their military service, and a majority were no longer in military service. Therefore, the treatment comparison did not focus on military-related PTSD.

In comparison to the person-centered therapy group, women assigned to the PE group experienced a greater reduction in symptoms, were less likely to meet the criteria for PTSD after treatment, and were more likely to experience a complete remission of symptoms.

Conclusion

A major strength of PE is its therapeutic fit for military personnel who have PTSD-related symptoms that range in severity and chronicity. PE is effective with acute stress disorder, recent onset PTSD, and chronic PTSD (Center for Deployment Psychology, 2012).

PE is also flexible in how it can be administered, capable of being effectively used in such diverse settings as combat zones, areas of non-combat deployment, on-base clinics, and military hospitals, (Peterson et al., 2011).

Its adaptability to on site administration makes PE a valuable prophylactic intervention for military personnel who have recently experienced a traumatic event but have not yet shown symptoms.

There are limitations to PE, some of which reflect barriers to its use with military personnel. One barrier is the time commitment that PE requires. Active-duty military personnel may be disadvantaged with respect to participating because the intense and frequent treatment sessions are likely interfere with their duties and orders (Peterson et al., 2011).

Another barrier to the use of PE, as well as other psychotherapeutic interventions, is stigma. For example, service members may fear being noticed as being absent by other military personnel due to the time demands of treatment.

Despite promising results for PE, there is concern that PE may aid in the symptom improvement, but not in the full remission of PTSD as 25%-45% of military personnel retain a PTSD diagnosis after treatment (van Minnen et al., 2002).

Multiple factors can explain the PE’s imperfect treatment record, including symptom severity and chronicity, faulty diagnosis, deviation from the full PE treatment protocol, and inadequate therapist education and training.

Furthermore, the smaller effect sizes for studies in which PE was applied to combat-related PTSD could reflect differences between military and civilian populations, such as the longer delay for military personnel between PTSD onset and its treatment and/or the high co morbidity of psychiatric disorders in military personnel.

That said, the 55%-75% success rate for PE is impressive and higher than that for pharmacological and other psychotherapeutic treatments for PTSD. Research on the cross-cultural usefulness of prolonged exposure therapy with military personnel is sorely needed.

References


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