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Intensive Outpatient Prolonged Exposure for Combat-Related PTSD: A Case Study

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The prevalence rates for combat-related posttraumatic stress disorder (PTSD) in U.S. military personnel returning from deployments to Iraq and Afghanistan indicate a significant demand for efficacious treatments that can be delivered in military-relevant formats. According to research with civilian and veteran populations, prolonged exposure is a first-line treatment for PTSD. However, research examining the generalizibility of prolonged exposure to active-duty military service members is scarce. Modifications to the standard prolonged exposure protocol may be required to meet military operational needs and to circumvent unique treatment barriers associated with the military. Intensive outpatient or compressed treatment delivered over a short time period has the potential for significant operational utility for active-duty military populations. Intensive outpatient practice formats have been found to be efficacious for the treatment of other anxiety disorders (i.e., specific phobia, obsessive-compulsive disorder). The present case report is the first to evaluate the use of intensive outpatient prolonged exposure for combat-related PTSD in an active-duty military service member. Treatment consisted of 10 full-day outpatient sessions over a 2-week period. The patient's PTSD, depression, and anxiety were dramatically reduced by the end of treatment, and she no longer met diagnostic criteria for PTSD. She remained in full remission at the 6-month follow-up.

E stimates of the prevalence of posttraumatic stress disorder (PTSD) in the population of military members returning from deployments in support of Operations Iraqi Freedom, Enduring Freedom, and New Dawn (OIF/OEF/OND) indicate a significant need for effective and accessible treatment resources (e.g., Milliken, Auchterlonie, & Hoge, 2007). Scientific reviews of the literature (e.g., Bisson et al., 2007; Institute of Medicine, 2008) conclude that prolonged exposure (PE) is an effective, first-line treatment for PTSD. However, the vast majority of clinical trials examining PE have been conducted with civilian trauma samples and with prior-service military personnel seen in the Veterans Administration medical system many years after the initial trauma exposure (as reviewed by Peterson, Luethcke, Borah, Borah, & Young-McCaughan, 2011). Whether these findings generalize to active-duty military personnel warrants further study, although initial findings are promising (e.g., Cigrang, Peterson, & Schobitz,

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© 2013 Association for Behavioral and Cognitive Therapies. Published by Elsevier Ltd. All rights reserved. 2005; Cigrang et al., 2011; McLay, McBrien, Wiederhold, & Wiederhold, 2010; Nacasch et al., 2007, 2011; Schnurr et al., 2007).

Large randomized clinical trials of PE and other trauma-focused cognitive behavioral psychotherapies for chronic PTSD have usually delivered treatment in 60- to 90-minute weekly or twice-weekly individual sessions spaced over a 6- to 12-week period (Peterson, Foa, & Riggs, 2011). This standard treatment protocol does not always suit the mobile, time-limited lifestyle of many active duty OIF/OEF/OND veterans. Frequent changes of permanent assignment, field training exercises, and concerns about stigma and the potential impact of seeking mental health care at local military treatment facilities can limit access to evidence-based treatment. Moreover, mental health services may be unavailable at more remote assignment locations or harder to access for some members of the military. For example, military service members activated from the Guard and Reserves to support OIF/OEF/OND are at increased risk for PTSD (Milliken et al., 2007) and may encounter significant time constraints on their access to PE treatment due to the limited duration of their military medical benefits following redeployment. In addition, OIF/OEF/OND veterans who have been physically injured in combat are at increased risk for PTSD compared to noninjured veterans (Koren, Norman, Cohen, Berman,

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& Klein, 2005), with many showing a delayed onset of PTSD (Grieger et al., 2006). Moreover, patients who have physical injuries associated with lengthy healing processes may have little time for psychological treatment.

Given these potential treatment barriers, there is a clear need to develop brief, intensive, evidence-based treatment options for combat-related PTSD that are deliverable in a reduced amount of time while retaining effectiveness and acceptability to the OIF/OEF/OND population. To our knowledge, there are no published reports of an intensive outpatient treatment protocol being used to treat PTSD. However, studies on intensive outpatient versus spaced exposure-based treatment for specific phobia, panic disorder, and obsessive-compulsive disorder suggest that intensive treatment sessions are as effective as traditionally spaced treatments (Bohni, Spindler, Arendt, Hougaard, & Rosenberg, 2009; Emmelkamp, van Linden van den Heuvell, Rüphan, & Sanderman, 1989; Foa & Goldstein, 1978; Foa, Liebowitz et al., 2005; Ost, Alm, Brandberg, & Breitholtz, 2001).

While numerous patients with obsessive-compulsive disorder have been successfully treated with daily, intensive exposure therapy with no adverse effects, it is not known if the previous success with intensive outpatient treatment will generalize to PTSD. Some clinicians and researchers may view intensive outpatient PE treatment for PTSD as being too demanding for the average patient (Olatunji, Deacon, & Abramowitz, 2009). Moreover, some patients may be reluctant to engage in any form of daily treatment, including PE. However, patients may also be interested in completing the treatment as quickly as possible. The education and training culture in the military, which is renowned for compressed and intensive training courses, is well suited for a short-term, accelerated course of psychological treatment. An ongoing study in the military (Principal Investigator, Edna B. Foa) is comparing the outcome and acceptability of ten 90-minute massed PE sessions delivered in 2 weeks compared to that of the standard once weekly sessions (STRONG STAR, 2013). The current case study presents the results of an active-duty U.S. military service member treated for combat-related PTSD using an intensive outpatient treatment protocol of PE. The patient provided written informed consent to publish this case study following her 6-month follow-up assessment.

The Patient

Note: Some of the details provided in the description of the index traumatic event are graphic and pertain to a forced abortion. Readers should use their discretion in reading this case study. The patient was a 46-year-old female with over 20 years of active-duty military service. She was married with three children and described her marriage as happy. In 2008, she was stationed at a military hospital in Afghanistan, where she worked as a health care technician. This was her first deployment. Her usual military occupation, when not deployed, involved frequent interactions with relatively healthy outpatient military beneficiaries. However, while deployed, she was required to provide regular care to severely injured patients in a busy hospital emergency room. During her deployment, she was exposed to numerous potentially traumatic events involving patients with multiple amputations, severe burns, and attempted suicides. However, her index trauma, the trauma that caused her the most distress at time of treatment, involved a 14-year-old Afghan girl who had been raped and impregnated by an older Afghan man. In her third trimester, the girl was attacked by her family, and the fetus was aborted using a kitchen knife because of the family's shame at her unwed pregnancy. The local villagers, alarmed at the incident, notified nearby U.S. military personnel, and she was urgently transported to the military hospital's emergency department. The awaiting medical team was briefed on the girl's injuries while she and her father were transported to the hospital. The Afghan girl arrived unconscious and covered in blood. The service member saw the girl's severely lacerated abdomen and the severed and protruding umbilical cord. The service member provided bedside emergency health care and comforted her as she regained consciousness. The Afghan girl recovered from surgery and had an extended inpatient hospitalization. During that time, the service member described developing a close, parental-type relationship with the Afghan girl. The service member later learned that, upon discharge, the Afghan girl was forced to marry her rapist to avoid lifelong public disgrace. The patient reported difficulty in understanding the decisions made by the Afghan girl's family and indicated that knowing that the girl was forced to marry her rapist contributed greatly to her general distress.

Prior to deployment, the service member had an outstanding military career and had received numerous awards and honors for leadership, management, and performance. She reported that she had been actively involved in family and community activities. After returning from her deployment, she had severe, trauma-related nightmares, during which she scratched her back, neck, and arms to the degree that it resulted in bleeding and eventual scarring. She also experienced severe insomnia and reported only sleeping about 2 hours per night, primarily because of her fear of her trauma-related nightmares and her inability to fall back asleep after awakening from a nightmare. She continued to perform satisfactorily in her military occupation, although problems with anger, concentration, motivation, and somatic complaints negatively impacted her ability to work at her previously high level of performance. Her supervisors, military commanders, peers, and subordinates were aware that something had changed since she returned

from her deployment. She withdrew from family activities and avoided social interactions. Two years after she had returned from her deployment, she approached her command and requested treatment. Because of her senior position within her military treatment facility and the lack of significant expertise in treating combat-related PTSD in the local civilian community, she was referred to The University of Texas Health Science Center at San Antonio for treatment. She was placed on temporary duty assignment to attend treatment, which allowed her to focus exclusively on her treatment.

Baseline Assessment

The PTSD Symptom Scale-Interview (PSS-I; Foa, Riggs, Dancu, & Rothbaum, 1993; Foa & Tolin, 2000); PTSD Checklist-Stressor Specific (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993); Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996); and Beck Anxiety Inventory (BAI; Beck, Epstein, & Brown, 1988) were administered at baseline, posttreatment, and follow-up. The PSS-I is a 17-item structured clinical interview that assesses the presence, frequency, and intensity of PTSD symptoms for a specific traumatic event. Consistent with the American Psychiatric Association's (2000) Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), patients receive a diagnosis of PTSD on the PSS-I if they endorse at least one reexperiencing symptom, three avoidance/ emotional numbing symptoms, and two hyperarousal symptoms. These symptoms have to be present for at least a month and must cause significant impairment or distress. The PCL-S, BDI-II, and BAI are self-report measures that assess symptom severity.

The PSS-I was administered by an evaluator certified in its administration. The patient met DSM-IV diagnostic criteria for PTSD on the PSS-I. She also endorsed clinically significant PTSD symptoms on the PCL-S, moderately severe depressive symptoms on the BDI-II, and mild anxiety symptoms on the BAI (see Table 1). She denied a history of suicidality and suicidal ideation and intent at baseline, posttreatment, and follow-up.

Table 1

Assessment Measures at Baseline, Posttreatment, and Follow-Up Periods

Measures	Baseline	Posttreatment	1-Month Follow-Up	6-Month Follow-Up
PSS-I	24	18	0	0
PCL-S	54	18	17	17
BDI-II	21	2	0	0
BAI	13	0	0	0

Note. PSS-I = PTSD Symptom Scale-Interview; PCL-S = PTSD Checklist-Stressor Specific; BDI-II = Beck Depression Inventory-Second Edition; BAI = Beck Anxiety Inventory.

Formulation, Rationale, and Treatment Plan

PE therapy is based on emotional processing theory for anxiety disorders, which integrates concepts from conditioning theory, cognitive therapy, and information processing frameworks to explain the mechanisms underlying anxiety disorders and the processes by which exposure therapy treats these disorders (Foa & Cahill, 2001; Foa & Kozak, 1986). Additionally, PE has been successfully used with a variety of patients, including males, females, civilians, and military members (Foa, Hembree, & Rothbaum, 2007).

Consistent with the emotional processing theory, the patient engaged in avoidance strategies to manage her trauma-related distress, which included actively avoiding thinking about the trauma and trauma reminders while focusing almost exclusively on work-related responsibilities. She also avoided interactions with children and prevented her oldest daughter from engaging in ageappropriate activities (e.g., riding the school bus).

The patient participated in an intensive outpatient program of individual PE consisting of 10 full-day sessions over a 2-week period (i.e., approximately 8:00 A.M. to 4:00 P.M., Monday through Friday each week). An outline of the daily treatment schedule is provided in Table 2. Between the first and second weeks, the patient returned to her home to continue to review the imaginal exposure recordings on a daily basis and to complete family-based in vivo exercises over the weekend.

The intensive outpatient PE protocol was administered by a treatment team consisting of a licensed psychologist with extensive training and experience in PE serving as the primary therapist (ALP) and two co-therapists including a psychology intern (HLF) and a postdoctoral fellow (THB). The primary therapist conducted the morning sessions while one or both of the co-therapists observed. In the afternoons, the co-therapists met with the patient to help her process the morning's in vivo exercise and her reactions to reviewing both the morning session and the imaginal exposure. The co-therapists also collaborated with the patient to select that evening's in vivo exercises.

Course of Therapy

The patient attended all 10 treatment sessions. The two major components in PE are imaginal and in vivo exposure. In the imaginal exposure portion of her treatment, the patient revisited the memory of the index trauma, recounted it aloud (usually with eyes closed), and processed the revisiting experience with the therapist. The patient's narrative was recorded and the patient was asked to listen to the recording of the session in the clinic during the afternoon as part of the intensive outpatient treatment. The in vivo exposure exercises involved having the patient generate a list of situations that she avoided because of the

Day	One	Two	Three	Four to Nine	Ten
Morning (~2 hrs)	1. Treatment rational	1. Review homework	1. Review homework	1. Review homework	1. Review homework
	2. PTSD education	2. In vivo rationale	2. Imaginal exposure rationale	2. Imaginal exposure	2. Imaginal exposure
	3. Breathing retraining	3. In vivo hierarchy	3. Imaginal exposure	3. Hot spots (day 8)	·
Mid-morning/ lunch		In vivo exposure	In vivo exposure	In vivo exposure	In vivo exposure
Afternoon	Listen to audio recording of morning session	 Process morning in vivo exercise Listen to audio recording of morning session Process review of morning session audio recording 	 Process morning in vivo exercise Listen to audio recording of morning session Process review of morning session audio recording 	 Process morning in vivo exercise Listen to audio recording of morning session Process review of morning session audio recording 	 Process morning in vivo exercise Listen to audio recording of morning session Process review of morning session audio recording
Evening	 Review handouts Breathing retraining 	 In vivo exposure Breathing retraining 	 In vivo exposure Breathing retraining 	1. In vivo exposure 2. Breathing retraining	 In vivo exposure Breathing retraining

Table 2 Schedule for Intensive, 2-Week (10-Session) Outpatient Prolonged Exposure Protocol

trauma-related distress they elicited. The patient was asked to approach these situations as part of the daily treatment and as homework during the evening. The in vivo exercises started with the least distressing situations and progressed towards the most distressing situations (i.e., in vivo exposure hierarchy). For more details on PE therapy, see *Prolonged Exposure Therapy for PTSD: Emotional Processing of Traumatic Experiences: Therapist Guide* (Foa et al., 2007).

Table 3

Example Items From Patient's In Vivo Hierarchy

Activity	SUDS Rating	
Sitting in church on Sunday	0	
Promotion ceremony (no kids present)	10	
Going to the mall in the morning	20	
Bike riding	30	
Swimming/going to pool	30	
Church activities	40	
Parent teacher training	50	
Commissary at 5 P.M.	60	
Attending a show at the theater	70	
Family time—horseback riding	70	
Attending older daughter's track meet	80	
Attending football game with older daughter	90	
Saturday night family time (bowling)	90	
Parent's night out	100	
Octoberfest at children's school	100	
Hospital in Afghanistan	100	

In constructing her in vivo exposure hierarchy (see Table 3), the patient identified several activities and settings that caused her varying degrees of distress, as indicated by the subjective units of distress (SUDS) she assigned to them. For example, she identified sitting in church on Sundays as not at all distressing (i.e., SUDS = 0) and being in the military hospital in Afghanistan as the most distressing (i.e., SUDS = 100). She ranked sitting by her hotel's pool as somewhat distressing (i.e., SUDS = 30) and attending her husband's work functions slightly more distressing (i.e., SUDS = 40). The patient was instructed to begin with an in vivo exposure that would cause some distress, but would also be manageable, which typically is at a SUDS rating of around 40. She selected sitting by the pool at the hotel for one of her first in vivo exposures, but she reported it was more difficult than she anticipated. Upon reviewing this experience with her, the patient stated that there were children at the pool at the time she went there and that the presence of the children made sitting there much more distressing than she anticipated. She left the pool at that time and returned later at night when no children were present, which was more manageable for her. Consequently, her in vivo hierarchy was modified to reflect this new information about her distress levels when children were present. The patient completed these exercises on her own, without the presence of a therapist.

During the first imaginal exposure exercise, the patient initially became quite distressed. However, she was able to other details of the memory occurred, she was successful in completing imaginal exposure with her eyes closed and with decreasing distress. As part of the processing of the imaginal exposure, the patient also was able to acknowledge the assistance she provided the Afghan girl. Moreover, during treatment, the patient independently researched publically available information on the Internet that assisted her in understanding how the family of the girl responded to the rape. Through the information she found on the Internet and the processing of the imaginal exposure, she gained a new perspective on the girl's trauma, family, and culture. Although the patient did not agree with the family's decisions, she expressed greater understanding of their actions and decreased general distress.

During the eighth session, the hot spots imaginal exposure procedure was introduced. In this procedure, the patient was asked to repeatedly review the most difficult parts (i.e., "hot spots") of the trauma instead of reviewing the entire trauma narrative. A critical breakthrough occurred while she was reviewing a hot spot related to the viewing of the Afghan girl's abdominal laceration and umbilical cord. During one rendition of the hot spots narrative, she mentioned "the fetus." After the completion of the hot spots exercise, the patient was queried about this during processing, considering this was the only time during any session she had mentioned the fetus. The patient quickly clarified that there was not a fetus present in the hospital emergency department while she was deployed, and that she was not sure why she had said that. Then, after a few moments of deep contemplation, the patient stated, "But it's in my dream! In my nightmare there is a baby hanging on the end of the Afghan girl's umbilical cord, and it's screaming. It's screaming and none of us can get it to stop!"

Upon further processing, the patient stated that this portion of her nightmare was terrifying and explained her fear of going to sleep. She also realized that she had been avoiding screaming children, because they triggered significant arousal and reexperiencing symptoms. This insight made it easier for her to complete subsequent in vivo exposure exercises involving her own and other children.

Throughout treatment, the patient embraced the overall rationale for PE therapy, which emphasizes that avoidance maintains the PTSD symptoms, and she consistently worked hard to eradicate her PTSD symptoms. Although many sessions were quite distressing, she understood the importance of the process. She attended all treatment sessions, listened to the session audio recordings more times than was required, wrote journal entries about her experiences and reactions, and actively engaged in challenging in vivo exposures.

Outcome Assessments

By the completion of treatment, the patient experienced clinically meaningful decreases in her PTSD, depressive, and anxiety symptoms on the outcome assessment measures (see Table 1). She no longer met diagnostic criteria for PTSD on the PSS-I, and her self-report indicated significant reductions in insomnia, nightmares, and scratching. Telephone follow-up assessments were conducted 1 month and 6 months after completing treatment. The directions and assessment items were read slowly to the patient over the phone by one of the co-therapists, trained in the administration of the measures. Items were repeated as necessary to ensure that the patient heard and understood each question. Her responses were recorded verbatim. At 1 month, her self-reported PTSD symptoms on the PCL-S were in the minimal range, and she indicated additional improvements in sleep. At both the 1-month and 6-month follow-ups, her PTSD, depressive, and anxiety symptoms were in the minimal range. It is possible that her scores reflect a socially desirable response pattern (Clark, Crewdson, & Purdon, 1998). However, the patient provided multiple examples of improved functioning, which supports the validity of the assessments. For example, she reported sleeping an average of 7 to 8 hours per night, no longer scratching herself while sleeping, and no longer having nightmares. She also reported being fully engaged with her family and that she was no longer avoiding social situations.

Conclusions

PE therapy has been the most thoroughly studied treatment for PTSD, and it has been demonstrated to be remarkably robust in efficacy in terms of patient populations, therapist variables, and comorbid conditions. For example, PE was found to be efficacious in treating PTSD related to physical and sexual assault (e.g., Foa et al., 1999; Foa, Hembree, et al., 2005; Resick, Nishith, Weaver, Astin, & Feuer, 2002; Resick, Williams, Suvak, Monson, & Gradus, 2012), military combat (Nacasch et al., 2011; Schnurr et al., 2007; Thorp, Stein, Jeste, Patterson, & Wetherell, 2012), motor vehicle accidents (Blanchard et al., 2003), and mixed traumas (Bryant et al., 2008; Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998). Importantly, the evidence for the efficacy of PE emerged from research centers around the world. PE was found effective in treating PTSD with comorbid psychiatric conditions, such as depression (van Minnen, Hendriks, & Olff, 2010), personality disorders (Hembree, Cahill, & Foa, 2004), and minimal traumatic brain injury (Rauch et al., 2011). In addition to PTSD symptoms, PE reduces the severity of depression (Hagenaars, van Minnen, & Hoogduin, 2010; Hembree et al., 2004), anger (Cahill, Rauch, Hembree, & Foa, 2003), and guilt (Resick et al., 2002).

Clinical research on the treatment of combat-related PTSD in active-duty military populations has been limited by a number of factors, such as military operational mission requirements and the stigma of seeking care in military settings (Vogt, 2011). The present case study evaluated the use of an intensive outpatient format of PE therapy for combat-related PTSD in an active-duty military service member. Although the patient had experienced significant PTSD symptoms for 2 years after returning from her deployment, the intensive 2-week PE protocol resulted in rapid reduction of her symptoms, and these improvements were maintained over a 6-month follow-up period.

A concern that some clinicians may have with providing PE is patient overengagement, which is excessive emotional distress resulting from the imaginal exposure (Foa et al., 2007). Whether treatment is delivered in the traditional or an intensive outpatient format, some patients may initially experience significant distress when reviewing their trauma narrative. Should overengagement occur, clinicians can modify exposure procedures to help patients remain grounded while describing their trauma. A description of procedure modifications are available elsewhere (Foa et al.). Additionally, reviewing the rationale for imaginal exposure with patients may also help reduce distress, as they are reminded that the goal is to differentiate the memory of the trauma from the trauma itself. Finally, as was the case with this patient, some patients may benefit from initially keeping their eyes open during imaginal exposure as a means of keeping themselves grounded. An intensive outpatient format may be particularly helpful for patients who become significantly distressed, since they have more regular contact with their clinicians who can help them manage their distress.

There are a number of limitations to this case study. First, the intensive outpatient PE protocol requires replication with larger sample sizes, a more diverse patient population, and a longer follow-up period. There are no indications that intensive outpatient PE would be less effective in treating diverse trauma types or comorbid PTSD than standard PE; however, more research is warranted to draw a firm conclusion. Similar to the standard delivery of PE, intensive outpatient PE may not be an appropriate first-line treatment for patients who are at imminent risk for suicidal or homicidal behaviors, engaging in serious self-injurious behaviors, actively psychotic, or do not have sufficient memory of the trauma (Foa et al., 2007). Additionally, patients with severe comorbid substance abuse may benefit more from dual diagnosis treatments than PTSD treatment alone.

Another limitation is that, because the patient lived out of the local area where she received treatment, the follow-up assessments had to be completed by telephone. Had additional treatment or booster sessions been necessary, these also would have had to be completed by telephone or perhaps by a secure telebehavioral health video conference (Strachan, Gros, Ruggiero, Lejuez, & Acierno, 2012).

Feasibility and cost are two additional potential limitations with this type of program. The ability to overcome conflicts with work schedules may be particularly difficult with full-time civilian employees. However, this treatment option may be particularly suitable for military personnel with PTSD since commanders can authorize temporary duty assignments, and quicker recovery time allows military personnel to return to duty sooner. As such, obtaining command support is an important first step to reduce treatment barriers and increase feasibility for many military patients. At first glance, the cost of such a program may appear prohibitive. However, it presumably costs significantly less than inpatient care for PTSD, which is currently occurring on a regular basis for active-duty military, and it is far more cost-effective than the estimated lifetime costs associated with untreated PTSD (e.g., disability, unemployment, etc.).

The Department of Defense (Institute of Medicine, 2012) and the VA Administration (Karlin et al., 2010) have prioritized training military providers in evidence-based treatments for PTSD such as PE. However, despite these efforts, there are barriers to implementing the standard PE protocol in existing military mental health clinics (e.g., 90-versus 50-minute sessions; reporting Relative Value Units). The development of an intensive outpatient PE program for PTSD may help decrease barriers to treatment implementation and improve treatment outcomes. Current military-based intensive outpatient programs for PTSD can last up to 6 months and focus primarily on complementary and alternative approaches to treating PTSD (Institute of Medicine).

There are several advantages to an intensive outpatient PE protocol for military personnel with PTSD. First, this intense outpatient format allows for quicker recovery. Additionally, some treatment studies (e.g., Tarrier, Sommerfield, Pilgrim, & Faragher, 2000) have found that shorter treatment duration significantly predicted better treatment outcome for PTSD (i.e., reduction in PTSD symptoms). One reason that shorter duration of treatment might be associated with better outcome is that the patient does not have as much opportunity for avoidance. Similarly, the intensive outpatient format used in this case did not afford the patient the chance to engage in avoidant behaviors between treatment sessions. Finally, shorter courses of treatment may be particularly useful for activeduty service members, who typically are more mobile than civilians. However, while the 2-week treatment period appeared to be ideal for this patient, it is possible that a longer, or even shorter, period might be required for other patients, which warrants further research.

With additional research support for its efficacy, the intensive outpatient format would be ideal for the establishment of PTSD treatment centers at key military treatment facilities located throughout the Department of Defense. Identified patients could be sent to one of these locations on a brief temporary duty assignment to be treated by a team of PTSD treatment specialists and then could return to their permanent duty station upon the completion of treatment. This treatment format is also consistent with military training, which often requires temporary duty assignments and emphasizes intense and focused skill acquisition. Conceptualizing treatment as an extension or form of military training may also decrease stigma associated with seeking mental health treatments within the military culture.

References

- American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC: Author.
- Beck, A. T., Epstein, N., & Brown, G. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting & Clinical Psychology*, 56, 893–897. http://dx.doi.org/10.1037/0022-006X.56.6.893
- Beck, A. T., Steer, R., & Brown, G. (1996). BDI-II, Beck Depression Inventory: Manual (2nd ed.). Boston, MA: Harcourt Brace.
- Bisson, J. I., Ehlers, A., Matthews, R., Pilling, S., Richards, D., & Turner, S. (2007). Psychological treatments for chronic post-traumatic stress disorder: Systematic review and meta-analysis. *British Journal of Psychiatry*, 190, 97–104. http://dx.doi.org/10.1192/bjp.bp.106.021402
- Blanchard, E. B., Hickling, E. J., Devineni, T., Veazey, C. H., Galovski, T. E., Mundy, E., ... Buckley, T. C. (2003). A controlled evaluation of cognitive behavioural therapy for posttraumatic stress in motor vehicle accident survivors. *Behaviour Research and Therapy*, 41, 79–96. http://dx.doi.org/10.1016/S0005-7967(01)00131-0
- Bohni, M. K., Spindler, H., Arendt, M., Hougaard, E., & Rosenberg, N. K. (2009). A randomized study of massed three-week cognitive behavioural therapy schedule for panic disorder. *Acta Psychiatricia Scandinavica*, 120, 187–195. http://dx.doi.org/10.1111/j.1600-0447. 2009.01358.x
- Bryant, R. A., Moulds, M. L., Guthrie, R. M., Dang, S. T., Mastrodomenico, J., Nixon, R., ... Creamer, M. (2008). A randomized controlled trial of exposure therapy and cognitive restructuring for posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, 76, 695–703. http://dx.doi.org/10.1037/a0012616
- Cahill, S. P., Rauch, S. A., Hembree, E. A., & Foa, E. B. (2003). Effect of cognitive-behavioral treatments for PTSD on anger. *Journal of Cognitive Psychotherapy*, 17, 113–131. http://dx.doi.org/10.1891/jcop.17.2. 113.57434
- Cigrang, J. A., Peterson, A. L., & Schobitz, R. P. (2005). Three American troops in Iraq: Evaluation of a brief exposure therapy treatment for the secondary prevention of combat-related PTSD. *Pragmatic Case Studies in Psychotherapy*, 1(2), Article 1, 1–25. Retrieved from http://hdl.rutgers.edu/1782.1/pcsp1.2.54
- Cigrang, J. A., Rauch, S. A. M., Avila, L. L., Bryan, C. J., Goodie, J. L., Hryshko-Mullen, A.,... and the STRONG STAR Consortium. (2011). Treatment of active-duty military with PTSD in primary care: Early findings. *Psychological Services*, 8(2), 104–113. http://dx.doi.org/10. 1037/a0022740
- Clark, D., Crewdson, N., & Purdon, C. (1998). No worries, no cares: An investigation into self-reported `nondistress' in college students. *Cognitive Therapy & Research*, 22, 209–224. http://dx.doi.org/10. 1023/A:1018788608443
- Emmelkamp, P. M. G., van Linden van den Heuvell, C., Rüphan, M., & Sanderman, R. (1989). Home-based treatment of obsessivecompulsive patients: Intersession interval and therapist involvement. *Behaviour Research and Therapy*, 27, 89–93. http://dx.doi.org/10. 1016/0005-7967(89)90124-1
- Foa, E. B., & Cahill, S. P. (2001). Psychological therapies: Emotional processing. In N. J. Smelser, & P. B. Baltes (Eds.), *International*

encyclopedia of social and behavioral sciences (pp. 12363-12369). Oxford, UK: Elsevier.

- Foa, E. B., Dancu, C. V., Hembree, E. A., Jaycox, L. H., Meadows, E. A., & Street, G. P. (1999). A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *Journal of Consulting and Clinical Psychology*, 67, 194–200. http://dx.doi.org/10. 1037/0022-006X.67.2.194
- Foa, E. B., & Goldstein, A. (1978). Continuous exposure and complete response prevention in the treatment of obsessive-compulsive neurosis. *Behavior Therapy*, 9, 821–829. http://dx.doi.org/10.1016/ S0005-7894(78)80013-6
- Foa, E. B., Hembree, E. A., Cahill, S. P., Rauch, S. A. M., Riggs, D. S., Feeny, N. C., & Yadin, E. (2005). Randomized trial of prolonged exposure for posttraumatic stress disorder with and without cognitive restructuring: Outcome at academic and community clinics. *Journal of Consulting and Clinical Psychology*, 73, 953–964. http://dx.doi.org/10. 1037/0022-006X.73.5.953
- Foa, E. B., Hembree, E. A., & Rothbaum, B. O. (2007). Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences: Therapist guide. New York, NY: Oxford University Press.
- Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, 99, 20–35. http://dx.doi.org/10.1037/0033-2909.99.1.20
- Foa, E. B., Liebowitz, M. R., Kozak, M. J., Davies, S., Campeas, R., Franklin, M. E., ... Tu, X. (2005b). Randomized, placebo-controlled trial of exposure and ritual prevention, clomipramine, and their combination in the treatment of obsessive-compulsive disorder. *American Journal of Psychiatry*, 162, 151–161. http://dx.doi.org/10. 1176/appi.ajp.162.1.151
- Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing posttraumatic stress disorder. *Journal of Traumatic Stress*, 6, 459–473. http://dx.doi.org/10.1002/jts.2490060405
- Foa, E. B., & Tolin, D. F. (2000). Comparison of the PTSD Symptom Scale-Interview Version and the Clinician-Administered PTSD Scale. *Journal of Traumatic Stress*, 13, 181–191. http://dx.doi.org/10. 1023/A:1007781909213
- Grieger, T. A., Cozza, S. J., Ursano, R. J., Hoge, C., Martinez, P. E., Engel, C. C., & Wain, H. J. (2006). Posttraumatic stress disorder and depression in battle-injured soldiers. *American Journal of Psychiatry*, 163, 1777–1783. http://dx.doi.org/10.1176/appi.ajp.163.10.1777
- Hagenaars, M. A., van Minnen, A., & Hoogduin, K. A. L. (2010). The impact of dissociation and depression on the efficacy of prolonged exposure treatment for PTSD. *Behaviour Research and Therapy*, 48, 19–27. http://dx.doi.org/10.1016/j.brat.2009.09.001
- Hembree, E. A., Cahill, S. P., & Foa, E. B. (2004). Impact of personality disorders on treatment outcome for female assault survivors with chronic posttraumatic stress disorder. *Journal of Personality Disorders*, 18, 117–127. http://dx.doi.org/10.1521/pedi.18.1.117.32767
- Institute of Medicine. (2008). *Treatment of posttraumatic stress disorder: An assessment of the evidence*. Washington, DC: The National Academies Press.
- Institute of Medicine. (2012). Treatment for posttraumatic stress disorder in military and veteran populations: Initial assessment. Washington, DC: The National Academies Press.
- Karlin, B. E., Ruzek, J. I., Chard, K. M., Eftekhari, A., Monson, C. M., Hembree, E. A., ... Foa, E. B. (2010). Dissemination of evidencebased psychological treatments for posttraumatic stress disorder in the Veterans Health Administration. *Journal of Traumatic Stress*, 23, 663–673. http://dx.doi.org/10.1002/jts.20588
- Koren, D., Norman, D., Cohen, A., Berman, J., & Klein, E. M. (2005). Increased PTSD risk with combat-related injury: A matched comparison study of injured and uninjured soldiers experiencing the same combat events. *American Journal of Psychiatry*, 162, 276–282. http://dx.doi.org/10.1176/appi.ajp.162.2.276
- Marks, I., Lovell, K., Noshirvani, H., Livanou, M., & Thrasher, S. (1998). Treatment of posttraumatic stress disorder by exposure and/or cognitive restructuring: A controlled study. *Archives of General Psychiatry*, 55, 317–325. http://dx.doi.org/10.1001/archpsyc.55.4.317
- McLay, R. N., McBrien, C., Wiederhold, M. D., & Wiederhold, B. K. (2010). Exposure therapy with and without virtual reality to treat PTSD while

in the combat theater: A parallel case series. *Cyberpsychology, Behavior & Social Networking, 13,* 37–42. http://dx.doi.org/10.1089/cyber. 2009.0346

- Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association*, 298, 2141–2148. http://dx.doi.org/10.1001/ jama.298.18.2141
- Nacasch, N., Foa, E. B., Fostick, L., Polliack, M., Dinstein, Y., Tzur, D., ... Zohar, J. (2007). Prolonged exposure therapy for chronic combatrelated PTSD: A case report of five veterans. CNS Spectrums, 12(9), 690–695 Retrieved from http://www.cnsspectrums.com/default. aspx
- Nacasch, N., Foa, E. B., Huppert, J. D., Tzur, D., Fostick, L., Dinstein, Y., ... Zohar, J. (2011). Prolonged exposure therapy for combat- and terror-related posttraumatic stress disorder: A randomized control comparison with treatment as usual. *Journal of Clinical Psychiatry*, 72, 1174–1180. http://dx.doi.org/10.4088/JCP.09m05682blu
- Olatunji, B. O., Deacon, B. J., & Abramowitz, J. S. (2009). The cruelest cure? Ethical issues in the implementation of exposure-based treatments. *Cognitive and Behavioral Practice*, 16, 172–180. http://dx.doi.org/10. 1016/j.cbpra.2008.07.003
- Ost, L. G., Alm, T., Brandberg, M., & Breitholtz, E. (2001). One vs. five sessions of exposure and five sessions of cognitive therapy in the treatment of claustrophobia. *Behaviour Research and Therapy*, 39, 167–183. http://dx.doi.org/10.1016/S0005-7967(99)00176-X
- Peterson, A. L., Foa, E. B., & Riggs, D. S. (2011). Prolonged exposure therapy for combat-related PTSD. In B. A. Moore, & W. Penk (Eds.), *Treating PTSD in military personnel: A clinical handbook* (pp. 42–58). New York, NY: Guilford.
- Peterson, A. L., Luethcke, C. A., Borah, E. V., Borah, A. M., & Young-McCaughan, S. (2011). Assessment and treatment of combat-related PTSD in returning war veterans. *Journal of Clinical Psychology in Medical Settings*, 18, 164–175. http://dx.doi.org/10.1007/ s10880-011-9238-3
- Rauch, S. A. M., Sripada, R., Tuerk, P., Defever, A. M., Mayer, R. A., Smith, E., ..., MacPhee, E. (2011, August). *Prolonged exposure in VHA: TBI and treatment response.* Symposium Presented at the VHA Mental Health Conference, Baltimore, MD.
- Resick, P. A., Nishith, P., Weaver, T. L., Astin, M. C., & Feuer, C. A. (2002). A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of Consulting and Clinical Psychology*, 70, 867–879. http://dx.doi.org/10. 1037/0022-006X.70.4.867
- Resick, P. A., Williams, L. F., Suvak, M. K., Monson, C. M., & Gradus, J. L. (2012). Long-term outcomes of cognitive-behavioral treatments for posttraumatic stress disorder among female rape survivors. *Journal of Consulting and Clinical Psychology*, 80, 201–210. http://dx.doi.org/10. 1037/a0026602

- Schnurr, P. P., Friedman, M. J., Engel, C. C., Foa, E. B., Shea, M. T., Chow, B. K., ... Bernardy, N. C. (2007). Cognitive behavioral therapy for posttraumatic stress disorder in women: A randomized controlled trial. *Journal of the American Medical Association*, 297, 820–830. http://dx.doi.org/10.1001/jama.297.8.820
- Strachan, M., Gros, D. F., Ruggiero, K. J., Lejuez, C. W., & Acierno, R. (2012). An integrated approach to delivering exposure-based treatment for symptoms of PTSD and depression in OIF/OEF veterans: Preliminary findings. *Behavior Therapy*, 43, 560–569. http://dx.doi.org/10.1016/j.beth.2011.03.003
- STRONG STAR (South Texas Research Organizational Network Guiding Studies on Trauma and Resilience). (2013). Prolonged exposure for PTSD among OIF/OEF personnel: Massed versus spaced trials [Online content]. Retrieved March 17, 2013, from https://delta. uthscsa.edu/strongstar/subs/rpinfo.asp?prj=1
- Tarrier, N., Sommerfield, C., Pilgrim, H., & Faragher, B. (2000). Factors associated with outcome of cognitive-behavioural treatment of chronic post-traumatic stress disorder. *Behaviour Research and Therapy*, 38, 191–202. http://dx.doi.org/10.1016/S0005-7967(99) 00030-3
- Thorp, S. R., Stein, M. B., Jeste, D. V., Patterson, T. L., & Wetherell, J. L. (2012). Prolonged exposure therapy for older veterans with posttraumatic stress disorder: A pilot study. *American Journal of Geriatric Psychiatry*, 20, 276–280. http://dx.doi.org/10.1097/JGP. 0b013e3182435ee9
- van Minnen, A., Hendriks, L., & Olff, M. (2010). When do trauma experts choose exposure therapy for PTSD patients? A controlled study of therapist and patient factors. *Behaviour Research and Therapy*, 48, 312–320. http://dx.doi.org/10.1016/j.brat.2009.12.003
- Vogt, D. (2011). Mental health-related beliefs as a barrier to service use for military personnel and veterans: A review. *Psychiatric Services*, 62, 135–142. http://dx.doi.org/10.1176/appi.ps.62.2.135
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility.* Paper presented at the annual meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

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