Summer 2017

Treatment Choice Among Combat Veterans

Zachary Clayborne Dietrich

TREATMENT CHOICE AMONG COMBAT VETERANS

by

ZACHARY CLAYBORNE DIETRICH

(Under the Direction of Shauna Joye)

ABSTRACT

A plethora of research has investigated PTSD treatment outcomes among Veterans of foreign wars. However, research has suggested mixed treatment efficacy. Although investigations into factors that may help predict treatment outcomes are emerging, to date no study has evaluated treatment choice among Veteran populations. Previous treatment choice studies have yielded qualitative and quantitative information that can be useful in clinical decision-making. This study looks to build upon the treatment choice literature with combat Veterans to evaluate for underlining characteristics of cohorts that will help build upon existing knowledge. It has been suggested that treatment benefits Vietnam Era Veterans more than younger generations of Veterans. One of the suggested predictive factors of outcome is treatment choice; implying preference would differ between cohorts. This study did not lend evidence of different treatment preference between cohorts. Predictive factors were obtained for each treatment that could provide future research with data for hypothesis testing to improve the treatment selection process.

Index Words: Combat Veterans, Treatment Choice, PTSD

TREATMENT CHOICE AMONG COMBAT VETERANS

by

ZACHARY CLAYBORNE DIETRICH

B.S., Indiana University, 2007

M.A., Cleveland State University, 2012

A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in

Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PSYCHOLOGY

STATESBORO, GEORGIA

TREATMENT CHOICE AMONG COMBAT VETERANS

by

ZACHARY CLAYBORNE DIETRICH

Major Professor:	Shauna Joye
Committee:	Janie Wilson
	Lawrence Locker

Electronic Version Approved:
May, 2017

DEDICATION

To Evelyn May & William Zachary Dietrich I

Von den Hallen der meiner Vorfahren, ihr Einfluss ist bei mir.

ACKNOWLEDGEMENTS

I first want to thank those who were not part of this project, but whose influence deserves mention.

Richard Rakos: Through our conversations that usually became excruciating thought exercises, I learned to see through the lens of science, question through the art of logic, and more importantly know when each of these skills should be practiced. A lesson few in our field, to their detriment, receive or faithfully adhere too. Your guidance and support permanently crushed what little doubt I had in my own intellectual ability, perhaps to the annoyance of many after you.

Michael Wisniewski: Your larger than life presence provided a model I will always strive to emulate. Switching between egotistical and modest, omniscient and ignorant, conceding and disputing; you always seemed to know exactly what others need from you whether they recognize it at the time or not. You will always be my mentor and friend, no matter how many times you order ridiculously over-priced scotch when it is my turn to pick up the bill.

Don and Cindy Sykes: Last, but certainly not least, I struggle to convey in a few sentences the impact you have made. I understand how fortunate I have been to work with you and get the missing piece that is an unfortunate weakness in all graduate training programs; *true* professional development. The best part of ending my academic education is knowing I am about to enter a much more challenging, but more rewarding, phase in my education and I could not ask for better teachers, mentors, and friends.

To the committee on this project, your contributions to this project are miniscule compared to the countless lessons I've learned from each of you over the years. I find it no

coincidence my specialization and interest within our field draws from the courses your three taught; sometimes, but not often, even practicum.

Janie Wilson: The first at Georgia Southern I considered a mentor. Even from our first conversation standing in the lobby, and standing three feet shorter than me, I knew I was talking to a beast. I unfortunately only took one course you taught, but it was the most important course I ever took for my career. Among all the neuropsychology books in my office are the books and notes from your lectures; and they are frequently referenced. The time I spent in your lab was just as valuable; there are too many lessons from that time of my educations to put here. Thank you.

Lawrence Locker: I did not need to take your statistics course since previous credits carried over. I never regretted the decision to enroll in that course anyway. That, and your other course, proved invaluable with what I do today. More importantly, I appreciated your open and honest display for passions outside of our field. It was a breath of fresh air to talk with someone who had mastered their profession, but had interest and ambitions outside of our narrow world. It brought a “realism” to working with you that was not the same old tune, fiddle, and guitar. For so many others, it’s been the same way for years.

Shauna Joye: I really have no idea where to begin or what to say. I still cannot believe we were so tired at the airport in Portland Maine that we thought we saw unicorns, then drove 16 hours, slept two, and then climbed the highest mountain that state had to offer. I cannot wait to see where our work takes us next.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

Statement of Problem

Department of Defense (DoD) released that after seven years of the War of Terror, 25% of combat Veterans from post-9/11 conflicts will meet criteria for posttraumatic stress disorder (PTSD; Department of Defense, 2010). In fact, five years after the invasion of Iraq, mental disorders were the second most frequent category of diagnosis at Veterans Affairs (VA) hospitals (Tanielian & Jaycox, 2008). The Veterans Health Administration (VHA) has received additional funds to treat this influx of combat Veterans seeking services. The VHA expanded programs that originated to treat Vietnam Veterans, with the inherent assumption that these programs would benefit all combat Veterans (Erbes, Curry, & Leskela, 2009). The VHA's efforts to treat post-9/11 Veterans have been called into question since differing rates of treatment effectiveness and attendance have been observed in Vietnam era and post-9/11 combat Veterans (Chard Schumm, Owens, & Cottingham, 2010).

Background and Significance

PTSD is one of the primary difficulties faced by returning combat Veterans (Hoge et al., 2004). PTSD is frequently described as a collection of hyper-responsive and inappropriate "fight or flight" responses (Yehluda, 2001). The term "fight or flight" first appeared in 1915 when Walter Cannon theorized that the physiological purpose of this response was an adaptive response to threat (Shiromani, Keane, & LeDoux, 2009). However, with PTSD the fight or flight mechanism that is adaptive during the trauma persists post-trauma and is associated with significant behavioral, cognitive, and social impairment (Hoge, 2010).

Despite statistics illustrating that post-9/11 combat Veterans return from combat with significant psychological difficulties, post-9/11 combat Veterans are significantly less likely than

in Vietnam era Veterans to take advantage of available treatment options (Chard et al., 2010; Erbes, Curry, & Leskela, 2009). Although such factors as employment, family commitments, and symptom presentation are not supported as being associated with treatment use (Mott, Hundt, Sansgiry, Mignogna, & Cully, 2014; Erbes, Westermeyer, Engdahl, & Johnson, 2007), "Veteran-era cohort" is highlighted as a predictive factor in who will attend treatment, with Vietnam era Veterans more likely to attend and benefit from mental health treatment than post-9/11 Veterans (Hundt et al., 2014; Erbes et al., 2009).

Veteran opinion about the usefulness of different types of treatment is one area of inquiry that could lend an understanding to treatment utilization. Simply put, we need to know what kinds of treatments Veterans are willing to try. The literature is absent of treatment choice studies relevant to military populations. However, previous treatment choice studies relevant to the PTSD literature exist and focus on female sexual assault survivors (Cochran, Pruitt, Fukuda, Zoellner, & Feeny 2008; Zoellner, Feeny, Cochran, & Pruitt 2003; Zoellner, Feeny, & Bittinger, 2009). These studies have yielded meaningful information that could provide evidence for treatment use in clinical settings. For example, an evaluation of a behavioral treatment designed to use extinction and habituation, prolonged exposure (PE) therapy, compared to the medication sertraline, a selective serotonin reuptake inhibitor produced primarily to treat depression, indicated that PE was preferred and perceived to be more effective in a sample of women who had no history of trauma (Cochran et al., 2008). However, when replicated among a sample of trauma-exposed women, the results suggested that a combination of PE and sertraline was preferred (Pruitt et al., 2012). In a qualitative evaluation comparing preference for either PE or sertraline, trauma-exposed participants cited practicality as their reasoning for endorsing

sertraline over PE alone (Zoellner et al., 2009). Thus, important differences may exist in treatment choice between non-clinical and clinical populations.

Some previous studies have investigated what kinds of services combat Veterans might want to access after deployment, but not specific treatments for mental-health issues. For example, Sayer et al. (2010) found that combat Veterans reported Veterans were significantly less interested in treatment than in continuing education, obtaining employment, and receiving vocational training. However, Veterans' lack of interest in treatment options does not reflect their clinical presentation, as many Veterans return from combat struggling with mental-health issues (Chard et al., 2010). Insight into factors that influence treatment choice could lead to increased treatment-seeking among combat Veterans, a population that presents with a great need for services (Cochran et al., 2008).

Purpose

The primary purpose of this study is to evaluate potential underlying variables that impact treatment choice among Veterans in efforts to contribute meaningful information to formulate treatment planning. The current study will evaluate two cohorts of differing military generations: Vietnam era combat Veterans and post-9/11 combat Veterans. By obtaining data about treatment choice perceptions, perceptions of stigma, symptom endorsement, and personality, this exploratory study looks to find measures that could be used as predictive factors to treatment preference.

Definition of Terms

Cognitive Behavioral Therapy (CBT). CBT is an evidence-based practice relying on cognitive and behavioral principles. CBT focuses on the impact of maladaptive thinking and behaviors on mood. CBT is considered problem focused, with the primary objective of replacing

maladaptive patterns of thinking and behaving with adaptive ones. Although CBT originated as a unique manualized treatment, other therapies have been developed using CBT theory and modifications to treatment techniques. CBT is now considered an umbrella term for a large variety of treatments.

Cognitive Processing Therapy (CPT). CPT is an adaptation of CBT theory designed to treat PTSD. CPT posits that PTSD occurs when the beliefs about trauma produce strong negative emotions that prevent accurate appraisals of the trauma. CPT focuses on cognitive restructuring of the event and exercises where the client writes narratives about the trauma then later (in session) evaluates the narratives for inaccurate appraisals.

D-Cycloserine (DCS). Originally patented under the brand name Seromycin, DCS is an antibiotic medication developed for the treatment of tuberculosis. DCS is a partial agonist of NMDA glutamatergic receptors in the basolateral nucleus of the amygdala. Because of this action, studies have suggested that administration of this drug 30 to 60 min prior to a therapy session may enhance fear extinction when individuals are exposed to fear-eliciting stimuli.

Department of Defense (DoD). The DoD is a department of the Federal United States government under the direction of the Executive Branch. The DoD's function is to coordinate the involvement of any governmental operations that relate to national security or to the military.

Eye Movement Desensitization and Reprocessing (EMDR). EMDR is a treatment that conceptualizes PTSD as symptoms that originate from disturbing memories. The belief is that these memories are stored in an isolated memory network that inhibits adequate processing. EMDR is similar in approach to CPT, however EMDR adds the bilateral sensory input, such as left to right eye movement following a clinician's finger, while talking about the memory. The

theory is that this movement aids in adequate processing of the memory. The treatment typically takes 12-15 weekly sessions.

Evidence Based Treatment (EBT). EBTs refer to treatments that integrate the best available research, clinical expertise, and client characteristics. Treatments obtain EBT status after receiving consistent replication of clinical trials in efficacy.

Operation Enduring Freedom (OEF). OEF is the official name for the Global War on Terrorism by the United States. OEF is the ongoing conflict that began in Afghanistan on October 7, 2001. OEF refers to operations in Afghanistan, Philippines, Somalia, Georgia, Kyrgyzstan, Sahara, and the Caribbean of Central America.

Operation Iraqi Freedom (OIF). OIF refers to the 2003 invasion of Iraq by the United States between March 19, 2003, and May 1, 2003. Some sources refer to OIF Veterans as any Veteran who served in combat operations after March 19, 2003. However, the operation name was changed after May 1 of that year. Instead of naming specific operations, much of the literature refers to combat Veterans of engagements in Iraq or Afghanistan after October 2001 jointly as OIF/OEF Veterans.

Post-9/11 Era Veteran. Refers to a Veteran who engaged in combat after the September 11, 2001, attack on the World Trade Center in New York. These Veterans served in conflict after October 7, 2001 in Afghanistan, Iraq, Yemen, Pakistan, and currently campaigns in Syria and Iraq against the Islamic State of Iraq and Syria. This term is used interchangeably in other sources as Veterans of the Global War on Terrorism.

Posttraumatic Stress Disorder (PTSD). PTSD is classified as a trauma and stress-related disorder. PTSD occurs after an individual experiences at least one traumatic event that is followed by psychological and physical after the trauma such as avoidance of trauma reminders,

hyperarousal, and flashbacks of the traumatic event. These symptoms persist for over a month after trauma.

Prolonged Exposure Therapy (PE). PE is an adaptation of CBT designed to treat PTSD. The PE conceptualization of PTSD is that symptoms are maintained through avoiding stimuli associated with the trauma, and this negative reinforcement strengthens the fear associations. Therefore, core components of PE are repeated exposures to stimuli that have been avoided since the onset of PTSD. During a typical PE exposure session, individuals are exposed to stimuli that elicit anxiety until the sympathetic nervous system is exhausted and physical symptoms of anxiety are no longer experienced. This occurs repeatedly until fear extinction is achieved.

Selective Serotonin Reuptake Inhibitor (SSRI). SSRIs are a class of medication considered to be antidepressants and prescribed for the treatment of a variety of depressive and anxiety disorders. SSRIs limit the reabsorption of serotonin into the presynatpic cell, resulting in an increase of serotonin in the synaptic cleft available to bind to the postsynaptic receptors. SSRIs were developed on the theory that because decreased mood is a result of low serotonin levels, increasing serotonin levels has positive mood altering effects.

Veterans Affairs (VA). The VA is a government institution in the United States that serves, organizes, and disseminates benefits to American Veterans. The VA is split into three subdivisions: Veterans Health Administration, Veterans Benefits Administration, and the National Cemetery Administration.

Veteran's Health Administration (VHA). The VHA is the component of the VA that is charged with implementing health care to qualifying Veterans. The VHA is the largest integrated health care system in the world (VA, 2017).

Vietnam Era Veteran. Vietnam era is the term used in the United States to signify service during the time around the Vietnam War. To classify as a Vietnam era Veteran, military service must have occurred between February 28, 1961, and May 7, 1975. Conflicts during this time occurred in South Vietnam, North Vietnam, Cambodia, and Laos.

Wilderness Experience Program (WEP). WEPs are organizations that conduct outdoor programs in wilderness environments for the purpose of therapy, rehabilitation, and education. For purposes of psychological treatment, WEPs do not have a formal structured therapeutic component. Instead, WEPs rely on building resilience and self-efficacy through natural consequences of the inherent challenges of living or traversing through wilderness environments.

Wilderness Therapy (WT). WT is a WEP with a formal structured therapeutic component. No specific criteria are used to define WTs in the literature, and the term is used for a variety of settings and treatment orientations. The therapeutic component can be based on any theoretical orientation and ranges from “check-ins” to formal sessions such as tele-health communication including emails, phone calls, or video-chatting.

CHAPTER 2: LITERATURE REVIEW

Five years after the invasion of Iraq by the United States military and 7 years after the War on Terror launched in Afghanistan, mental disorders were the second most frequent category of diagnosis at the Veterans Affairs (VA) hospitals (Tanielian & Jaycox, 2008). In 2009, the Department of Defense (DoD) estimated that 25% of combat Veterans – 125,000 individuals – were believed to possibly meet criteria for posttraumatic stress disorder (PTSD; DoD, 2010). Another report by VA officials showed that severe psychological distress among returning combat Veterans resulted in approximately 22 combat Veterans taking their own lives every day in 2012 (Kemp & Bossarte, 2013). However, a review of this report shows significant methodological errors and suggests this figure is likely a significant underestimate, with only 21 states included and concerns over misclassification of the deceased as non-Veteran by documenting authorities.

Currently, the first line of treatment for many combat Veterans is through the VA's PTSD clinical teams and residential programs. The VA developed these programs primarily to treat PTSD among Vietnam-era Veterans and currently assumes its effectiveness in treating post-9/11 combat Veterans (Erbes, Curry, & Leskela, 2009). The use of VA treatment protocols has been questioned because although comparison studies between pre- and post-9/11-era Veterans are limited, available data suggest different treatment effectiveness and attendance across cohorts (Chard et al., 2010). Post-9/11 combat Veterans are not benefitting as much as previous generations of Veterans.

PTSD

The primary mental health diagnosis among combat Veterans is PTSD (Hundt et al., 2014). PTSD is characterized by the re-experiencing of a traumatic event accompanied by

symptoms of increased arousal, avoidance of trauma-related stimuli, and negative alterations in cognition and mood either beginning or worsening after the traumatic event [American Psychiatric Association (APA), 2013]. The APA first defined PTSD as an anxiety disorder in 1980. The decision to include PTSD in the third edition of the Diagnostic and Statistical Manual (DSM-III; APA, 1980) was heavily influenced by the numerous Vietnam War Veterans who presented with psychological distress and disability both immediately following and for many years after their return from deployment (Neyland et al., 1998).

PTSD is considered an adaptive response to fear learning (Hoge, 2010), and the most widely accepted model of fear learning is Pavlovian fear conditioning (Rosen & Schulkin, 1998). Conditioning of new fears involves pairing a neutral stimulus multiple times with a stimulus that naturally elicits a fear response. Because the stimulus that naturally elicits a fear response does not have to be taught, it is called the unconditioned stimulus (US). The fear response to a US is called an unconditioned response (UR). Once the neutral stimulus is paired repeatedly with the US, it will begin to elicit a fear response, even when the US is no longer present. The neutral stimulus is now a conditioned stimulus (CS), and the learned fear response is a conditioned response (CR). Laboratory examples have long shown that after continued pairings, the fear response is a learned response to the CS (Wolpe, 1982).

Interestingly, individuals with PTSD can engage in behavioral avoidance and other symptoms of fear learning after a single pairing of the US and CS. The Rescorla-Wagner Model (Rescorla & Wagner, 1972) illustrates how organism appraisal and expectancy can impact the speed of learning. If the event is unexpected and the individual loses the perception of control over his/her life or self, the fear response is conditioned faster, often immediately, and can become chronic (Cantor, 2009). In fact, feeling as though the individual has lost control in

fearful situations has been shown to lead to PTSD symptoms even in the absence of a specific life-threatening event (Basolu, Livanou, & Crnobaric, 2007). Therefore, if an event was unexpected, and the individual felt powerless or appraised the event as life threatening, the association could be made after a single pairing of the CS and US. Support for this idea not only comes from clinical observation, but also from animal observations in laboratory settings (Foa, Zinbarg, and Rothbaum, 1992).

Impact of PTSD

Physiological impact. PTSD has been described as an adaptive response to a severe stressor that has promoted survival (Hoge, 2010), and evolutionary explanations of PTSD support this hypothesis (Cantor, 2009). That is, learning rather quickly to avoid a life-threatening situation potentially promotes survival of the species. Initial beliefs of the physiological mechanisms of PTSD led clinicians to believe symptoms were merely over-exaggerated symptoms of anxiety (Yehuda, 2001). Because of this misunderstanding, treatment attempts were misguided, and some led to worsening of symptoms. One frequent iatrogenic effect occurred with heavy reliance on benzodiazepines (Raskind, 2009), a $GABA_A$ agonist used to treat anxiety that induces sedation and has a high addiction potential (Stahl, Grady, & Munter, 2005). New discoveries have recognized that PTSD is not just an over-exaggerated stress response but a condition with physiological markers that differ from an anxiety diagnosis. Differences in the clinical profile may be too poorly understood to consistently treat with prescription medications. For example the hormone cortisol is released as part of the stress response (Dickerson & Kemeny, 2004), but studies evaluating cortisol levels among PTSD patients show differences in response. Although cortisol levels in some patients were significantly elevated, levels in others

were significantly decreased. Meaning that although symptom presentation was consistent, physiological differences existed (Yehuda, 2001).

Cognitive impact. One of the common features of PTSD is the pervasive change in memory related to the trauma, with some aspects of memory enhanced and others diminished. For example, memories of the trauma might occur repeatedly and often manifest as re-experiencing symptoms, such as unwanted, distressing, and poorly controlled recollections of the traumatic event (Verfaellie & Vasterling, 2009). Alternatively, another diagnostic symptom of PTSD is the inability to recall important aspects of the traumatic event (APA, 2013).

In addition to memory related to the trauma, general autobiographical memory and ability to encode and retrieve new information may also be observed in those with PTSD. Using the Autobiographical Memory Test (AMT), researchers found that although Vietnam-era Veterans with PTSD could recall general information about autobiographical memories encoded after the trauma but had trouble with recalling specific information. In contrast, trauma survivors without a PTSD diagnosis were better able to recall specific information about autobiographical information (McNally, Lasko, Macklin & Pitman, 1995). The AMT requires verbal cues, but similar results in a civilian population with PTSD were observed when visual cues were used (Schonfeld & Ehlers, 2006). This provides evidence that memory deficits are present across different types of perceptual cues. Moreover, when evaluating memory content, positive memories are recalled with significantly less detail than negative memories in those with a PTSD diagnosis (McNally et al., 1995).

Difficulties in memory can have significant treatment implications. An individual's sense of self is strongly tied to defining autobiographical memories (Beck, 2011). When asked to recall self-defining memories, individuals with PTSD reported more trauma-related memories and

memories of negative emotional valence than positive or neutral memories (Sutherland & Bryant, 2005). This prevalence in recall of negative memories can skew perceptions of self in many facets of functioning that additionally complicate treatment and require clinical attention (Beck, 2011).

Although some suggest that memory impairment is a predictive factor for who will develop PTSD after trauma, evidence suggests that the relationship may actually be the opposite. That is, memory impairment likely occurs as a result of trauma. In Veterans assessed before and after one deployment to Iraq, declines in verbal and visuospatial memory were observed only in those with psychological symptoms of trauma after deployment (Vasterling et al., 2006). Observations such as this have led some to speculate that symptoms of PTSD occur only if the traumatic event first leads to the physiological response that then may impair memory (Rubin, Berntsen, & Bohni, 2008).

Findings regarding the physiological causes of memory impairments among those with PTSD have been fairly consistent (Verfaellie & Vasterling, 2009). One explanation is that the hippocampus may experience neuronal degeneration due to the neurotoxicity of significantly elevated glucocorticoid responsiveness (Yehuda, 2001). In support of this explanation, Vietnam Veterans with PTSD showed a significant 8% reduction in hippocampal volume compared to Vietnam Veterans without a PTSD diagnosis (Bremmer et al., 1995). This reduction in volume was associated with a 40% deficit on scores of verbal memory tasks as measured by the Wechsler Memory Scale.

If left untreated, memory difficulties associated with PTSD are seen across the lifespan, with a steeper decline in memory formation and recall observed in elderly patients with PTSD and compared to their cohort without a PTSD diagnosis (Yehuda et al., 2006), thus potentially

making activities of daily living more difficult as individuals with PTSD age. Memory impairments caused by PTSD have consequences beyond the cognitive domain. Impaired memory has been shown to lead to physical health consequences, with data suggesting that those with a diagnosis of PTSD and heart disease were 80% more likely to forget taking necessary medications for heart disease than the control group with heart disease but not PTSD (Zen et al., 2012). However, memory impairment after trauma is not necessarily permanent. Evidence suggests that after completing cognitive behavioral therapy (CBT) for PTSD, a decrease in PTSD symptoms was associated with improved memory retrieval, particularly in response to positive cues (Sutherland & Bryant, 2007).

Social impact. Interpersonal problems are among the most significant concerns of returning combat Veterans (Milliken, Auchterlonie, & Hoge, 2007; Dekel & Monson, 2010). Symptoms of PTSD such as hyper-vigilance, increased sensitivity to perceived threats, and behavioral avoidance frequently erode interpersonal resources needed to maintain social support (Brancu et al., 2014). For example, one study showed that over half (57%) of combat Veterans reported difficulties controlling their anger (Sayer et al., 2010). In addition, lack of social support has long been established as the greatest predictive factor in developing and maintaining PTSD after a traumatic event (Brewin, Andres, & Valentine, 2000).

Treatment Effectiveness Among Veterans

Shortly after the wars in Iraq and Afghanistan began, PTSD was reported to be the most present concern faced by returning combat Veterans (Hoge et al., 2004). This concern was previously shown among Vietnam Veterans as well (Zatzick et al., 1997). Treatments that show general efficacy within civilian populations only show limited efficacy within Veteran populations (Schnurr et al., 2003) Since this discrepancy was first reported, several possible

explanations have been postulated. One explanation involves combat Veterans waiting to seek treatment until symptoms become severe (Bradley et al., 2005). Greater symptom expression leads to increased treatment difficulty and typically requires more intensive treatment. Another possible influence on treatment outcomes is the tendency for combat Veterans to limit social interactions, including treatment, in fear of displaying symptoms to others. When limiting social interactions, it is hypothesized that the avoidance behaviors diminish opportunities to habituate to fear-provoking stimuli and significantly decrease social support, a high frequency of both are necessary for the natural stress recovery to occur. Finally, it is suggested that compensation through disability claims provide reinforcement to continually display symptoms. In this view, Veterans are not as motivated to recover from symptoms as civilians because of secondary gains. Some support does exist for this claim. Cully and colleagues (2008) found that Veterans with at least a 50% service connection who receive increased access and benefits are less likely to attend treatment.

Treatment of post-9/11 Veterans does not appear to be as attractive or efficacious as with Vietnam Veterans. Data collected at a number of VA hospitals and supported by clinician consensus based on clinical observation suggest that post-9/11 Veterans who actively seek treatment are less likely to attend treatment regularly and more likely to completely abandon treatment (Erbes et al., 2009). Symptom presentation was suggested as a casual factor, as depression and treatment attendance are negatively correlated among post-9/11 Veterans (Erbes, et al., 2007). However, comparisons between post-9/11 Veterans to Vietnam Veterans showed that cohort was a stronger predictive factor than symptoms (Erbes et al., 2009), with Vietnam Veterans more likely to seek out and attend treatment. Another study showed that patient age was

the only significant predictive factor (Hundt et al., 2014). Further evaluation of the mediators associated with age is needed to understand this relationship.

Treatment is more likely to be prematurely terminated by post-9/11 Veterans and then reinitiated under a crisis situation requiring more intensive treatment (Mott, Hundt, Sansgiry, Mignogna, & Cully, 2014). Even with a formal diagnosis of PTSD, one study showed that only 35% of post-9/11 Veterans sought treatment within one year (Culley et al., 2008). Caregivers' reports also lend evidence that symptom severity is not a satisfactory explanation for differential treatment seeking behaviors between the cohorts. Of respondents, 64% of caregivers who cared for a post-9/11 combat Veteran reported a mental health diagnosis as opposed to 36% of pre-9/11 combat Veterans. Moreover, 75% of post-9/11 caregivers reported they had to provide assistance to their Veteran in coping with stressful situations, as opposed to only 46% among pre-9/11 Veteran caregivers (Ramchand et al., 2014).

Evaluating the multitude of factors that could be influencing treatment seeking behaviors and subsequent adherence has yielded several possibilities, although it is unlikely that a single cause has led to this discrepancy. One factor to consider is that the number post-9/11 Veterans wounded in combat is significantly higher than previous American wars (Carlock, 2007). Furthermore, Vietnam Veterans typically served one year-long tour. In contrast, post-9/11 Veterans typically serve multiple deployments and many have been injured, recovered, and redeployed (Hafemeister & Stockey, 2010). This pattern of deployment could be a significant factor because frequency and intensity of combat experiences are among the strongest predictors of future PTSD symptoms (Department of Veterans Affairs, 2010).

Survival rates of Veterans wounded in action are another suggested factor for increased PTSD provenance rates in recent combats. Early into the wars in Iraq and Afghanistan, the

survival rate of wounded individuals reached approximately 90% due to technological advances in body armor, improved understanding and training of field combat medicine, and increased efficiency in evacuating the wounded (Gawande, 2004). The wounded-to-killed ratio of the Vietnam War was 2.6 to 1, whereas the wounded-to-killed ratio of Afghan and Iraqi wars was 15 to 1 (Hafemeister & Stockey, 2010). Although this increase in combat survival is clearly a positive change, injuries significantly alter quality of life for combat Veterans after injury/trauma. As of 2006, more than half of combat-wounded Americans suffered brain damage that resulted in permanent changes in their cognition, mood, and behavior, thus severely impacting their ability to successfully reintegrate to civilian life (Friedman, 2006).

Epidemiological studies suggest that Vietnam-era and post-9/11 Veterans present to treatment with different concerns that could influence treatment efficacy. For example, Vietnam Veterans are more likely to report substance use disorders. On the other hand, post-9/11 Veterans are more likely to report difficulties with anger management and violent behavior than Vietnam Veterans. Despite injuries suffered during combat, post-9/11 Veterans are less likely to file a VA disability claim citing a PTSD diagnosis (Fontana & Rosenheck, 2008). Other characteristics are suggested based on clinical observation, such as reliance on technology, gender, and marital status. However, additional quantification is necessary to validate these claims and understand their impact on diagnosis and treatment. Despite low treatment attendance, data supports that post-9/11 combat Veterans are concerned with reintegration and interested in resources to assist in the transition. VA researchers found that 96% of respondents were interested in services that focused on reintegration (Sayer et al., 2010).

VA Treatments

In 2010, the Department of Veteran Affairs released *Management of Post-Traumatic Stress* to serve as a clinical guideline for treating PTSD (DVA, 2010). Approximately 50 clinicians from the VA and DoD developed the guidelines with the goal of evaluating evidence for treatments that emerged since the previous guidelines in 2004. The group unanimously supported the use of treatments developed from a CBT framework. However, as of 2009, none of these treatments were designed around theory or literature specifically on Veteran populations (Erbes et al., 2009).

Cognitive processing therapy. Cognitive Processing Therapy (CPT) focuses on challenging and modifying maladaptive beliefs that are considered stuck points in recovery (Resnick, Monson, & Chard, 2007). The addition of writing trauma narratives serves as an exposure component of the treatment (Resnick, Monson, & Chard, 2007). The manual allows for flexibility regarding setting as CPT can be practiced in an individual or group setting.

Research evaluating the efficacy of CPT in Veteran populations has demonstrated symptom reduction when compared to waitlist controls (Monson et al., 2006). Unfortunately, no studies have dismantled the components of CPT to assess efficacy for this population. Only one treatment dismantling study has been conducted at the time of this manuscript and it was conducted using a population of female sexual assault survivors (Resick et al., 2008). Participants were assigned to one of three groups receiving either CPT, the cognitive therapy component alone, or the written exposure alone. The full CPT condition and the cognitive-only condition showed no significant difference, but the narrative component was significantly less effective in reducing PTSD symptoms immediately after treatment. However, the within-participant design of this study yielded a decrease in PTSD symptoms across all three groups. All

groups still showed mild PTSD symptom reduction at the 6-month follow-up, but there were statistically nodifferences among groups . This finding lent evidence that the combination of treatment components was as effective as the individual parts in isolation at follow-up.

In the initial study using CPT with a Veteran population, 50 Veterans, all with a diagnosis of PTSD, completed the full 12-session treatment prescribed in the treatment manual. After treatment, 40% no longer met criteria for PTSD, and 50% had a significant change in their symptoms. Although re-experiencing and emotional-numbing symptoms did significantly improve, behavioral avoidance and hyperarousal symptoms did not significantly differ from pre- to post-treatment (Monson et al., 2006). Additionally, in a study evaluating effectiveness in OIF/OEF and Vietnam Veterans, CPT was shown to be effective for both cohorts. However, the OIF/OEF cohort had a significantly lower session attendance rate than the Vietnam cohort (Chard et al., 2010). In other words, OIF/OEF Veterans were less likely to attend treatment sessions than their counterparts.

Since the VA began to make efforts to disseminate empirically based treatments (EBTs) throughout the VAHs, studies have been conducted on the effectiveness of this work. Alvarez and colleagues (2011) used a retrospective-cohort design to compare CPT with a previously assessed treated cohort considered treatment as usual. Their results indicated significant symptom improvement in the CPT cohort over the treatment-as-usual cohort in symptoms of PTSD, depression, and improved quality of life (Weathers et al., 2013).

Prolonged exposure. Among treatments for PTSD, exposure-based treatments have been studied more than other treatments (VA, 2010). Exposure treatments are designed to modify associations between a feared stimulus (the CS) and avoidance behaviors that negatively reinforce the fear. Exposure therapies involve repeated exposure to feared stimuli while

practicing response prevention. By disassociating the CS and CR, the sympathetic nervous system responses lessen over time, which leads to behavioral extinction (Abramowtiz, Deacon, & Whiteside, 2012). Among differing exposure-based treatment options, Prolonged Exposure (PE) is recommended for treatment by the VA. PE combines imaginal exposure and in-vivo exposure of the traumatic event and associated stimuli (VA, 2010). In addition to the exposure component, cognitive restructuring is a suggested, but not a required component, to strengthen the new associations learned during the exposure (Eftekhari, Stines, & Zoellner, 2006). Imaginal exposure to the event occurs through thinking about and vocalizing the experience in detail (including physical and emotional descriptions). In-vivo exposure occurs through confronting the feared stimuli in a hierarchical fashion beginning with the stimulus that is perceived to be the easiest to confront.

Dismantling exposure-based therapies has led to mixed results in the literature on component efficacy, particularly in the use of cognitive restructuring. For instance, a study of civilian trauma showed a less robust decrease in symptoms of PTSD and depression if the cognitive component was omitted (Bryant et al., 2008). However, a meta-analysis concluded that when the focus of treatment was on decreasing behavioral avoidance only, the additional cognitive component did not contribute to efficacy. The cognitive component is theorized to be ineffective because the experience of challenging and restructuring thoughts is done without clinician directives (Wolitzky-Taylor, Horowitz, Powers, & Telch, 2008). When compared to present-centered therapy, female Veterans showed a greater decrease of symptoms with PE (Schnurr et al., 2007), although a limitation to the study is small sample size (n = 10). Taken together, research studies with PE provide evidence of PE effectiveness across generations and gender (Rauch et al. 2009). Nevertheless, more Veteran-specific studies are needed on PE and

other exposure-based treatments to obtain a deeper understanding of the therapeutic mechanisms (VA, 2010).

Eye movement desensitization and reprocessing. Eye Movement Desensitization and Reprocessing (EMDR) includes imaginal exposure and cognitive therapy while simultaneously performing eye movements during the exposure (Shapiro, 1989). Although the effective mechanism of EMDR is reported to be the bilateral movement of the eyes (Shapiro, 1989), two meta-analyses found no support for the eye-movement component of EMDR (Devilly, 2002; Davidson & Parker, 2001). The VA (2010) suggests that aside from the eye movements, other components of EMDR are the same as cognitive and exposure-based therapies. Spates and colleagues (2009) reported that without further evidence, the eye movements during sessions are unnecessary. However, despite the unproductive eye movements, evidence suggests EMDR is as effective as trauma-focused CBT (DoD, 2010).

Selective serotonin reuptake inhibitors. When PTSD was first added to the DSM in 1980, research in pharmacological treatment was nonexistent, and prescribers had to rely on symptom overlap with other disorders when making medication decisions. The result was frequent prescriptions of antidepressants, anxiolytics, and sedative hypnotic medications used "off label" with very little consistent efficacy observed (Raskin, 2009). Since then, selective serotonin reuptake inhibitors (SSRIs) have been used as a first-line pharmacological treatment for PTSD, and a meta-analysis supports their use (Stein, Isper, & Seedat, 2006), with treatment guidelines suggesting that SSRIs be taken for 12-24 months (Bandelow et al., 2014). However, Stein and colleagues (2006) reported that studies typically exclude combat Veterans from their analysis, focusing instead on civilian trauma. In fact, they suggested that research should be

conducted on the possibility that combat exposure is a predictive factor for SSRI non-responsiveness in treating PTSD.

This use of SSRIs in treating PTSD is considered a "significant benefit" and "strongly recommended" (VA, 2010) is largely based on randomized control trials with civilian populations and rarely target Veteran specific populations. Unfortunately, when randomized control trials evaluate pharmacological treatments specifically for Veterans, the results are contradictory to what is observed in comparable civilian populations regarding symptoms presentation (Friedman, 2006). In fact, the literature has provided evidence since the early 1990s that combat Veterans may not respond to SSRIs in a similar fashion as survivors of civilian trauma (van der Kolk et al., 1994). In fact, a VA study conducted between fluoxetine (an SSRI) and placebo showed that twice as many participants in the placebo group had a significant decrease in PTSD symptoms (Hertzberg et al., 2000).

Barriers to Treatment

Individual barriers. When evaluating barriers to treatment, factors unique to the individual may inhibit treatment-seeking behaviors. For example, a frequently endorsed barrier to care among combat Veterans is practicality in attending weekly appointments (Stecker et al., 2007). The relative high frequency of appointments when compared to other health-care professional appointment SPREADS is not a problem unique to Veterans. In a sample of civilian women with PTSD who chose medication over psychotherapy, ability to attend therapy regularly was the most frequently reported concern as well (Cochran et al., 2008). Frequently the barriers to treatment are perceptual rather than realistic, with a positive correlation observed between PTSD symptoms and perceived barriers to care (Ouimette et al., 2011). That is, those with more severe symptoms are more likely to report that they cannot attend therapy regularly.

Geographical distance from treatment opportunities may be a casual factor in treatment underutilization in rural populations (McCarthy & Blow, 2004). Approximately one third of OIF/OEF Veterans return to the rural south, where mental-health services are less readily available (Kirchner et al., 2011). Indeed, the VHA has worked diligently to create rural satellite clinics and tele-health equipment for use by Veterans. Veterans living in rural areas with a mental health diagnosis are less likely to report receiving treatment, even more so when specialty care is required (Wang et al., 2005). Studies have been conducted showing that distance to a VA hospital is significantly related to fewer psychotherapy services (Cully et al., 2008) regardless of symptom presentation or demographics (Culley et al., 2010).

A treatment barrier specific to younger combat Veterans is the perception of fit between themselves and the treatment setting (Ouimetter et al., 2011). When senior citizens are dual enrolled in Medicare and VA benefits, 94% of seniors use the VA system for their mental health and inpatient care (Petersen et al., 2010). This has led the average age of patients at the VA to be approximately 70 years old (Ouimetter et al., 2011). This leaves younger Veterans feeling uncomfortable as they feel the VHA's purpose is to serve primarily older Veterans.

Institutional barriers. The institution providing care may be a significant source of imposed barriers. For example, one commonly cited explanation for low treatment-seeking behavior is long wait times (Tanielian & Jaycox, 2008; Hoge et al., 2004). Strategies used to disseminate information are possible barriers to treatment if execution is poor or misguided. In an effort to make sure that combat Veterans know about available treatment services, the DoD may also have unintentionally served as an institutional barrier. The timing of education about services typically occurs shortly after a deployment, and as one Veteran reported, this may not be the best time.

> When we came back from our deployment, we had to go through all these little classes, and some of these were mental health classes. Without a doubt, we knew that everybody was there to help us. The last thing on our mind was wanting that help. We wanted to go home (Stecker et al., 2007; pp. 1359).

Although education about treatment services may appear to be best presented immediately after returning from deployment, Stecker and colleagues (2007) suggest that Veterans are not mentally prepared to retain such information and are more concerned with returning home. By having soldiers sit through these presentations immediately after returning home, the DoD may inadvertently be linking treatment with negative feelings.

The clinicians themselves, through misunderstandings about treatment, can become barrier to effective treatment. One reason might be that clinicians exclude clients from treatments because the clinician has seen similar individuals excluded from randomized control trials of a treatment (Ronconi et al., 2014). For example, exposure-based treatments are largely excluded from clinical consideration due to concerns of inducing anxiety with other comorbid conditions (Zoellner et al., 2009). Until recently, there was no comprehensive review of inclusion and exclusion criteria used in randomized clinical trials that corresponded to clinical practice. However, evidence suggests that exclusion criteria used in clinical trials for participant selection should not be given strong consideration in clinical practice (Ronconi et al., 2014).

Few VA psychotherapists appear to choose EBTs as an initial approach in treatment of PTSD (Rosen et al., 2004 Shiner et al., 2013), despite the massive dissemination efforts educating clincians and promoting benefits of EBTs (Zayfert et al., 2005; Shiner et al., 2013). Some have suggested patient preference for alternative treatment as a barrier to the delivery of EBTs for PTSD (Zoellner et al., 2009). Others have suggested a lack of clinical training in EBTs.

Training and opportunity do not appear to factors as many clinicians tend not to choose EBT for their patients despite receiving adequate training (Becker, Zayfert & Anderson, 2004). This suggests other unknown factors are playing a role in treatment choice by clinicians. Clinician choice of treatment options is an understudied area of research (Ronconi et al., 2014). One explanation may simply be clinician misunderstanding of PTSD. Although treatments that promote discussion and narratives of the trauma may be effective to some (Monsoon et al., 2006), these treatments may be ineffective for others. Rauch et al. (1996) used positron emission tomography (PET) scans to show decreased activity in Broca's area (the part of the brain responsible for speech) during the reading of trauma narratives, suggesting that talking through trauma may not be possible for some Veterans.

Instead of acknowledging limitations to clinician-preferred treatments, some treatment theorists give suggestions as to how to work through "resistance." Foa, Keane, and Friedman (2000) gave several suggestions, including hypnosis and medication, to work with "resistant" patients. Rather than attempt to identify ideal populations or conditions that respond better to specific treatments, they assumed the position that the patient was intentionally resistant to treatment. Relying on a lack of contrary evidence, they supported their position by stating that there was no evidence that treatments they outlined (i.e., cognitive therapy, prolonged exposure) were less effective in specific populations.

Societal barriers. Frequently one of the barriers many Veterans face in seeking treatment is the concern that others will view them differently if they know the Veteran is in treatment. Despite the fact that in one study OIF/OEF Veterans did not strongly endorse negative stereotypes associated with mental illness (Vogt, Fox, & DiLeone, 2014), in a recent analysis,

post-9/11 combat Veterans reported that workplace stigma was a major concern. Further, their concerns about career advancement served as a significant barrier.

Treatment-seeking behavior among combat Veterans may be impacted from stigma-related beliefs. One study found that more than over 75% of post-9/11 combat Veterans diagnosed with PTSD, depression, of generalized anxiety disorder recognized their diagnosis and consequences. However, only 40% reported interest in receiving treatment (Brown et al., 2011). Perceptions of mental-health treatment among military leadership may play a significant role in treatment seeking. Evidence has shown that enlisted members of the military are likely to have the same views of mental health stigma as their superior, regardless if that view is positive or negative (Clark-Hitt, Smith, & Brokerick, 2011). Moreover, when enlisted service members were asked about their willingness to refer themselves and a subordinate to mental-health treatment, 66% were willing to refer both themselves and others, and only 7% were not willing to refer themselves or others. No respondents were willing to refer themselves and not their subordinates (Johnston, Webb-Murphy, Raducha, & Abou, 2011).

Distance is frequently proposed as being a barrier for rural individuals. However, a stringent evaluation of this claim suggests that societal influence is more of a barrier than distance (Kirchner et al., 2011). The valuation of self-reliance and independence is prevalent in rural culture. This combination of values, though adaptive in many situations, is believed to impede treatment-seeking behavior (Hauenstein et al., 2007).

Cultural differences may significantly lead to comfort in clinical settings as well. As one combat Veteran stated:

> In going into a clinical environment, where you are going to talk about things that hurt your heart and that cause you great grief and distress, not only do you not know the

counselor that you are going to talk to, but you are walking into a sterile environment that is foreign to you (Stecker et al., 2007 pp. 1352).

PTSD Treatments Revisited: Beyond the VA

In response to barriers of treatment-seeking behavior, there has been a call for novel treatment options that may be better suited and more appealing to combat Veterans (Vogt et al., 2014). The following section will cover select novel treatments currently for efficacy among Veteran populations.

Wilderness experience programs. Wilderness Experience Programs (WEPs) are defined as "organizations that conduct outdoor programs in the wilderness or comparable lands for purposes of personal growth, therapy, rehabilitation, education, or leadership/organization development" (Friese, Hendee, & Kinziger, 1998, p. 40). The idea of using wilderness environments as a means to improve psychological health is not new (Schuster, 2003). Recently, researchers and clinicians increased their interest in WEPs to treat combat Veterans to provide a more comfortable treatment environment (Cassick & Smith, 2014). WEPs do not offer formal treatment protocols. Instead they operate through an experiential-learning paradigm and give individuals time to process and reflect on relevant events (Gelkopf, Hasson-Ohayon, Bikman, & Kravetz, 2013).

Research into WEPs typically includes qualitative interviews or evaluating journals participants maintain during their experience. One example is a nine-day climb of Mt. Kilimanjaro, after which Veterans endorsed an increase in self-determination, active coping skills, and social support (Burke & Utley, 2013). As another example, during a four-day kayak trip, Veterans reported a decrease in arousal and an increase in positive mood (Dustin, Briker, Arave, Wall, & Wendt, 2011). As a slightly less compelling example, Veterans who took part in a

five-day adventure course did not show a decrease in symptoms, but they did evaluate the program positively and reported learning strategies to better cope with negative emotions (Hyer et al., 1996). Most studies include reports from short-term programs, usually less than two weeks, though more intensive programs exist. Veterans who engaged in a six-month hike through the Appalachian Trail reported an increase in social reconnection, life-improving change, and psychological healing. They indicated that the main contributing factor to their improvement was the time away from societal stressors that allowed for this process (Dietrich, Joye, & Garcia, 2015).

Wilderness therapy. WEPs are often designed so that participants experience natural consequences through guided learning (Gelkopf et al., 2013). Adding to this model, Wilderness Therapy (WT) combines the use of natural lands with a structured and more traditional treatment approach (Russell, 2001). A search did not yield studies investigating WT programs for combat Veterans, but such programs do exist. CBT-based WTs are emerging into the treatment literature, with evidence supporting increased benefit over traditional CBT treatment for adult populations with depression (Kim, Lim, Chung, & Woo, 2009), overweight adolescents (Jelalian et al., 2006), and elderly clients with hypertension (Sung et al., 2012).

D-Cycloserine with exposure therapy. Studies have suggested that N-methyl-D-aspartate (NMDA) glutamatergic receptor activity in the amygdala precedes fear learning and extinction (Norberg, Krystal, & Tolin, 2008). The partial NMDA agonist, D-Cycloserine (DCS) has been shown in animal models to enhance fear extinction due to increased NMDA receptor activity (Walker, Ressler, Lu, & Davis, 2002). DCS was originally developed as an antibiotic to treat tuberculosis (Hardman & Limbird, 2001). However, since the discovery that fear-extinction

was accelerated with DCS in animal models, interest in the potential use as a PTSD treatment has emerged.

Working from the theory that DCS coupled with PE would increase treatment gains, de Kleine and colleagues (2012) found that 64% of their civilian sample showed significant clinical improvement as compared to the 38% of those in the PE plus placebo condition. However, within a small Veteran sample (12 per condition) that also received PE and DCS, no benefit was observed (Litz et al., 2012). The civilian population that showed benefit from administration also was administered DCS 60 minutes prior to treatment, whereas the military sample was administered DCS 30 minutes prior to session (both were administered 50 mg). DCS, originally developed as quick acting treatment, has a half-life of 10 hours, with peak serum levels after 4 hours (Hardman & Hardman, 2001). Interestingly, one study was conducted on Persian combat Veterans who were administered DCS without any form of adjunctive treatment. The rational was that soldiers would learn from real-world and informal exposures, and additional treatment may not be necessary. Although small, a significant difference in self-report endorsement of avoidance behaviors was observed when compared to the placebo condition (Attari, Rajabi, & Maracy, 2014). DCS has shown promise in aiding fear extinction in disorders for which a sympathetic nervous response is a hallmark feature, such as specific phobia. However, more research is required for PTSD (Hoffmann, Wu, Boettcher, 2013; Norberg, Krystal, & Tolin, 2008).

SSRI with psychotherapy. Guidelines for the treatment of PTSD often refer to SSRIs as a first-line treatment (VA, 2010). However, others suggest the use of SSRIs as a second-line treatment in tandem with ongoing psychotherapy (Marshall & Cloitre, 2000). Although reporting assessments of a small sample (n = 10), one study found that the combination of SSRIs and CBT

led to significant improvements among Cambodian refugees (Otto et al., 2003). Another study suggested similar results in a larger sample of American civilians diagnosed with PTSD (Rothbaum et al., 2006). Unfortunately, these findings failed to replicate in other studies, with SSRIs showing no advantage over placebo when used in conjunction with PE (Simon et al., 2008). Arguing that previous studies only included participants with previous ineffective treatments and "chronic" PTSD, Schneier and colleagues (2012) found that PE in tandem with SSRIs was more effective than PE and placebo among survivors of the World Trade Center attack on 9/11. No studies were found that evaluated SSRI in conjunction with psychotherapy for military populations.

Previous PTSD Treatment-Choice Studies

One solution to increasing attendance and efficacy in treatment for PTSD in combat Veterans is to simply ask individuals what treatment they prefer. To this end, treatment-choice studies, or those examining what treatments individuals choose and why, afford insight into the decision-making process of treatment consumers (Cochran et al., 2008). Clinicians reported a more positive patient prognosis when treatment rationales were understood and agreed upon by the patient (Addis & Carpenter, 1999).

Previous treatment-choice studies in PTSD largely focus on treatment for survivors of sexual assault (Cochran et al., 2008; Zoellner et al., 2003; Zoelner et al., 2009) and by providing vignettes summarizing a fictional patient, why they are seeking treatment, and treatment descriptions. In one study comparing treatment choice between PE and sertraline (an SSRI), a sample of non-trauma exposed women overwhelmingly chose PE over sertraline. Approximately 75% of respondents reported perceptions of effectiveness as a reason. In addition, approximately half reported that they were weary of medications to treat PTSD (Cochran et al., 2008). These

results were partially supported by another study evaluating responses from trauma-exposed participants and those without a history of trauma (Pruitt et al., 2012). When participants without a history of trauma listened to patient reviews of sertraline and PE, they reported preference for PE. However, when trauma-exposed participants responded, they endorsed the use of sertraline and PE in combination. This finding was supported when a similar study gave the vignette in addition to a measure of PTSD symptoms and treatment choices of PE and Sertraline. All respondents endorsed the use of PE, but those with a history of trauma endorsed the use of sertraline higher than those without a trauma history (Zoellner et al., 2009). Taken together, these studies lend evidence that experience with trauma may alter treatment perception choice.

Previous studies have looked at "treatment interests" among combat Veterans of Iraq and Afghanistan. However, rather than ask about treatment directly, they listed 17 practical domains in life (e.g., information on Veterans' benefits, medication, group therapy) and asked their interest in improving them (Sayer et al., 2010). In this study, combat Veterans showed most interest in VA benefits and about schooling, employment or job training. The authors suggested Veterans were more interested in other practical domains of living and endorsed significantly less interest in mental-health treatment options.

Current Study

The current study will apply an exploratory inductive reasoning approach to provide basic data that can later support applied research into treatment attendance and adherence among military populations. Two samples will represent two distinct populations of military service: Vietnam-era combat Veterans and post-9/11 combat Veterans. The first aim of this study is to evaluate for endorsement of treatment options after reading a hypothetical vignette of a soldier experiencing symptoms consistent of PTSD and look for differences among the two group

groups of Veterans. The second aim of this study is to evaluate individual factors and how these may relate to treatment choice. Previous literature provides evidence that personality, rurality, trauma exposure, and generational cohort influence treatment attendance and adherence. These factors will be analyzed with the aim of uncovering potential traits that might predict treatment choice.

CHAPTER 3: METHOD

Participants

We recruited 218 participants through the online data collection application Mechanical Turk (mTurk). Only participants with deployments during either the Vietnam Era (02/28/1961 – 05/07/1975; DVA, 2017) or Post 9/11 Era (after 09/11/2001; GPO, 2003) were retained for analysis, reducing the sample size to 185 (Vietnam Era = 25; Post 9/11 = 160) with 28 women who were all Post-9/11 Veterans. Participants received one dollar of credit through mTurk reimbursement accounts as compensation. Demographic information by group, including age, time in service, number of months deployed, highest obtained military rank, childhood and current rurality can be found in Table 1. Also in Table 1 are *t*-test statistics for group comparisons; these two groups differed significantly with Post 9/11 Veterans reporting a significantly younger age than Vietnam Veterans, more months deployed, more total time in service, and higher obtained rank.

Materials and Procedure

Vignette, Treatment Descriptions, and Credibility/Expectancy Questionnaire (CEQ; Appendix A). Participants were initially presented with a fictional vignette briefly describing the experience of an individual who returned from combat deployment and is now experiencing symptoms of PTSD. The vignette was purposely vague in descriptions to avoid potential confounds that could arise from some participants with combat experience relating to the story more than others (Foa et al., 2006). The vignette described common themes commonly found in Veteran narratives rather than specific details.

At the end of the vignette, treatment options were presented in random order with information about the name of the treatment, description, goals, and potential discomfort.

Following each treatment option, the CEQ was presented. The CEQ consisted of six items divided into two sets. In Set 1, participants rated each treatment using four Likert-type items on a scale from one (*not at all logical*) to nine (*very logical*) in their view of credibility of each treatment. In Set 2, participants rated the perceived expected efficacy of the treatment using an item to measure the participant's expected decrease in symptoms as described in the vignette. Means scores for each set were obtained. The CEQ has demonstrated good reliability across multiple populations, including Veteran and college samples (α = .84-.85; Devilly & Borkovec, 2000). Following the last treatment option and CEQ, participants completed the DUKE, PCL-5, BFI, SSOSH, and then a demographics form.

The Duke Health Profile (DUKE; Appendix B). The DUKE is a 17-item self-report measure that consists of six health facets (physical, mental, social, general, perceived health, and self-esteem) and four facets of dysfunction (anxiety, depression, pain, and disability). The DUKE has been shown to be a reliable brief screener of overall health across multiple domains (α = .55-.78; Parkerson, Broadhead, & Tse, 1990).

The PTSD Checklist for *DSM-5* (PCL-5; Appendix C). The PCL-5 is a 20-item self-report measure adapted from the original PCL to adhere to diagnostic changes made to the diagnosis of PTSD in the DSM-5. Participants were asked to rate items on a five-point Likert-type scale that indicates severity of PTSD symptoms during the past month. The original PCL has consistently demonstrated excellent reliability and validity in multiple populations (McDonald & Calhoun, 2010) and specifically within military and Veteran populations (Wilkins, Lang, & Norman, 2011). Limited data are available on the psychometrics of the PCL-5 due to its recent development. However, an initial study has suggested strong Cronbach's α of .94 (Liu et al., 2014).

The Big Five Inventory-10 (BFI-10; Appendix D). The BFI-10 is a 10-item instrument that is a shorter version of the original 44-item BFI. This measure assesses personality through the lexical Big Five factors of personality (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism; John, Naumann, & Soto, 2008). Participants were asked to rate on a five-point Likert scale how strongly they agree or disagree with statements about their personality. Reliability of the BFI has been shown to be strong in North American samples (α = .75 - .90; John et al., 2008), and the mean correlation of .83 between BFI-10 and BFI suggest minimal loss of reliability in using the truncated version (Rammstedt & John, 2007). However, Rammstedt and John (2007) do suggest an additional item to increase the correlation with the original BFI when assessing Agreeableness. This additional item was used due to the anticipated impact Agreeableness will have on this study, bringing the total number of items to 11.

Self-Stigma of Seeking Help Scale (SSOSH; Appendix E). The SSOSH is a 10-item instrument that assesses self-stigma associated with seeking mental health services (Vogel et al., 2006). Participants were asked to rate on a five-point Likert scale how strongly they agree or disagree with statements about seeking mental health services. Reliability of the SSOSH has been shown to be strong in civilian (α = .90; Vogel et al., 2006) and military (α = .90; Skopp et al., 2012) populations.

Demographics (Appendix F). The information on the demographic form asked participants to report their age, gender, ethnicity, marital status, education, maternal education, branch of military service, years of military service, highest obtained military rank, number of combat deployments, time in months total of combat deployments, and rurality. Rurality was assessed by asking participants to rate the rurality of both their current and childhood residences on a scale of 1 (*extremely rural*) to 7 (*extremely urban*).

CHAPTER 4: RESULTS

Preliminary Analyses

Descriptive statistics by group (Vietnam, Post 9/11 Veterans) and *t*-test comparison statistics for all measures (i.e., DUKE, PCL-5, BFI, and SSOSH) can be found in Table 2. Post 9/11 Veterans reported lower self-esteem, higher global PTSD symptoms, and more significant distress from symptoms of intrusion and arousal than Vietnam Veterans. Of note, on the PCL-5, the averages for both cohorts were above the recommended cut-point for clinical elevation (clinical significant cut-point = 33; Weathers et al., 2013). No significant differences were found in personality variables (BFI), self-imposed stigma towards seeking mental health services (SSOSH), or DUKE domains other than Self-Esteem.

Differences in Treatment Endorsement by Group

The first aim of this study was to evaluate whether Vietnam and Post 9/11 Veterans differentially endorsed the nine treatment options. To determine if group (Vietnam, Post 9/11) was related to treatment endorsement, we analyzed these data using two 2 (group) x 9 (treatment)mixed model ANOVAs, one for CEQ credibility as the outcome variable and one for CEQ expectancy as the outcome variable. The main effect of group on treatment endorsement was not significant for either credibility or expectancy. For credibility, Mauchly's test of sphericity showed a significant violation, $\chi^2(35) = 686.44$, $p < .001$. Based on Greenhouse-Geisser adjustments, $F(4.05, 740.18) = 1.01$, $p = .426$. For expectancy, Mauchly's test of sphericity showed a significant violation, $\chi^2(35) = 486.57$, $p < .001$. Based on Greenhouse-Geisser adjustments, $F(5.04, 650.26) = .78$, $p = .379$. Means and standard deviations by group can be found in Table 3.

Factors Related to Treatment Choice

The second aim of this study was to evaluate individual factors and how they may relate to treatment choice. Because we did not find differences in treatment choice based on sample, we collapsed across both groups for subsequent analyses ($N = 185$). The eight treatments and the no-treatment option were evaluated based on credibility and expectancy with several personality, demographic, and mental health variables entered as potential predictor variables. Since no well-established theories on patient-treatment selection are available for comparison, we did not use forced entry of multiple linear regression (Studenmund & Cassidy, 1987). In addition, suppressor effects and increase for Type II error are undesirable since this exploratory study could provide data for hypothesis testing in future studies. Therefore, we used the backward entry method to retain the highest number of potential predictor variables. These variables can be removed through forced-entry hypothesis testing in later studies (Field, 2013). Consequently, multiple regression analyses were conducted for credibility and Expectancy (See Tables 4-12)

CPT (Table 4) credibility was predicted by lower self-stigma, lower symptoms of depression, and less reactivity and arousal symptoms of PTSD, and a lower endorsement of extroversion. Higher endorsement of physical pain and avoidance symptoms were predictive of credibility of CPT. Expectancy of individual symptom decrease was predicted by higher intrusion and avoidance symptoms of PTSD and less stigma, anxiety, and arousal symptoms of PTSD. The other treatment with strong VA support, PE (Table 5), had predictive credibility only by two variables. PE credibility was predicted by lower scores on physical pain and stigma. Expectancy in symptom reduction was stronger in those higher in intrusion symptoms of PTSD and less symptoms of anxiety. Credibility of PE in conjunction with D-Cycloserine (Table 6),

theorized to increase speed of habituation, was predictive by a high endorsement of avoidance symptoms, less symptoms of arousal, and less self-induced stigma. These factors were also shown in expectancy of symptom reduction, with the addition of more combat deployments and higher depression.

EMDR (Table 7) was the only treatment where higher endorsement of self-induced stigma was related to higher rates of credibility and expectancy. Expectancy of symptom reduction was only additionally predicted by less negative alterations in cognition and mood. Credibility was also predicted by fewer number of combat deployments in addition to lower endorsement of negative alterations in cognitions and mood after trauma and higher endorsement of self-induced stigma.

SSRI medication alone (Table 8) was only predicted by physical difficulties, specifically higher endorsement of pain and disability. Expectancy was also predictive by higher pan endorsement, in addition those with higher endorsement of avoidance symptoms of PTSD and more likely to be supported by those who are younger in age. When SSRI medication is used in combination with psychotherapy (Table 9), less self-induced stigma, less anxiety, higher depression and higher avoidance symptoms become predictive factors. Symptom expectancy was predicted by less stigma, less intrusion symptoms, and higher avoidance, anxiety, and physical pain.

The use of WEP as treatment (Table 10) yielded credibility predicted by higher education, currently more rural, fewer deployments, and less endorsement of arousal. Expectancy of symptoms reduction was again predicted by higher education, and fewer number of deployments. Symptoms reduction expectancy was predicted by lower endorsement, fewer number of deployments, lower endorsement of overall psychological well-being and less

negative alterations of cognition after trauma. Individuals who were likely to endorse WEP favorably were also more likely to endorse personality traits consistent with agreeableness.

For WT (Table 11), endorsement of credibility was predicted by fewer symptoms of arousal, less depression, less physical pain, and fewer number of deployments. However, lower endorsement of overall psychological well-being was also predictive of higher WT endorsement. These individuals were also more likely to currently live in more rural environments. Expectancy in symptoms reduction was again predicted by lower endorsement of overall psychological well-being and fewer symptoms of psychological arousal. A current rural environment was predictive of expectancy, as with credibility, although a childhood urban environment was observed predictive of expecting higher symptom reduction.

The option to not seek treatment (Table 12) was endorsed as more credible by those with less arousal symptoms, less physical pain, less depression, and fewer deployments. Conversely, these individuals were lower on overall psychological well-being. They also endorsed more rural current environment. In expectancy of symptom reduction, a more rural current environment was endorsed, however a more childhood urban environment. A lower endorsement of negative mood was predictive of higher expectancy in reduction, as was lower endorsement of general psychological well-being.

CHAPTER 5: DISCUSSION

The purpose of the current study was to explore Veteran reports of perceived credibility of common and novel PTSD treatments and their expectancy of symptom reduction through these treatments. We aimed to evaluate previous studies suggesting that treatments have different outcome and attendance rates between Vietnam and Post-9/11 Veterans (Chard et al., 2010). Additionally, we sought to determine what factors might influence treatment choice, with the end-goal of improving treatment attendance and completion.

Treatment Endorsement

Data from this study did not reveal differences in either credibility or expectancy between Vietnam and Post 9/11 Combat Veterans for any treatments. Previous studies have suggested that cohort is a stronger predictive factor of treatment choice than psychiatric symptoms, with Vietnam Veterans more likely to seek treatment (Erbes et al., 2009) and to benefit from treatment (Resnick, 2009) than Post 9/11 Veterans. Support for the assumption that strength of endorsement regarding treatment choice would also differ significantly and offer predicative value (Cochran et al, 2008) was not provided by this study.

Perhaps contributing to these inconclusive findings is the lower than expected endorsement of treatment when qualitatively comparing our sample to prior samples (e.g. Pruitt et al., 2012). Although we used a different metric than prior studies, other studies (e.g., Rothbaum et al., 2006) have reported better optimism that different treatments will work than in our study. Statistically, the narrowing range of these data may impact predictive significance. Sampling may also be a contributor to nonsignificant findings, as previous studies have used Veterans right before or during treatment or university samples made up primarily of female participants. In contrast, we used an online sample of Veterans who were mostly men and who

may have had a range of exposure to treatment in terms of the kinds of treatment and when they were in treatment that serveas confounds.

Research also has shown different results among female samples with those who have no trauma history endorsing PE higher than SSRI medication alone and combining PE with SSRIs (Cochran et al., 2008) and those with a trauma history endorsing the combination of PE and SSRI higher (Pruitt et al., 2008). Trauma history was not evaluated in the current study due to online assessment and safety concerns, although all had experienced at least one combat deployment. Additionally, most of the participants in this study were men (exclusively men in the Vietnam sample).

Treatment Endorsement Predictors

Prior studies have shown that adherence to and preference for treatment options are associated with patient factors such as symptoms of depression among Vietnam Veterans (Erbes et al., 2009), PTSD symptoms among women with trauma history (Cochran et al., 2008), and personality traits such as conscientiousness and agreeableness predicting better treatment adherence Bruce et al., 2010). Within our sample, these variables and endorsement of treatment were inconsistent with prior treatment outcome and treatment choice studies, which is discussed in detail below. For clarity, we included a summary of model prediction findings in Table 13.

Prior treatment choice studies have shown that, among women, trauma history and PTSD symptoms were predictive factors of treatment choice (Cohchran et al., 2008; Pruitt et al., 2012). In this study, total PTSD symptom presentation did not yield the same strength of endorsement. However, when evaluating endorsement of each specific criterion within the diagnosis criteria as measured by the PCL-5, significant predictive value was yielded from these scores. For instance, avoidance symptoms are one of the hallmark symptoms of PTSD and yielded both positive and

negative predictive value across treatments. Those who scored higher on symptoms of avoidance were shown to have higher endorsements of CPT, SSRI alone and in conjunction with psychotherapy, and D-Cycloserine with PE. The descriptions of these treatments stated that discomforts would occur in session and/or medication would assist in coping/extinguishing the fear response. Qualitatively, this could suggest that Veterans with higher endorsement of avoidant symptoms perceived benefits to treatment focusing on confronting the trauma but wanted assistance in coping with the trauma from either their therapist or medication. Similarly, symptoms of arousal and reactivity (e.g., hypervigilance) were negative predictors of CPT, PE with D-Cycloserine, WT, and WEP.

One unexpected contributor of these data is the impact of physical ailments on selection of mental health treatment. Physical factors such as pain and disability were not considered in review of prior treatment choice studies. Experiencing physical pain was a negative predictor of treatments where physical discomfort could be indicated in the provided description, such as PE and WT. Conversely, physical pain was a positive predictor of treatments with low physical expectations or involving medications (CPT, SSRI alone, SSRI w/ therapy), meaning that those in more physical pain were more likely to endorse treatments they perceived carried less physical demands or discomfort.

The role of stigma in treatment is frequently cited in the literature across virtually all populations. Specifically among military populations, concerns of career advancement and perceptions of subordinates and superiors are prevalent. As a Veteran sample, our population was no longer currently serving in the military and were less likely to experience these external factors due to increased privacy regulations in the civilian sector. Therefore, we chose a measure that limited stigma to self-induced stigma that asked questions about self-evaluation. Stigma

endorsement had a negative relationship with treatments focusing on psychotherapy apart from EMDR, indicating that, for the most part, the less stigma one felt, the more appealing psychotherapies were. One possible explanation for the EMDR endorsement compared to other psychotherapies was the description of EMDR participants read. The description used highlighted the bilateral tracking in conjunction with processing memories. EMDR description did not explicitly state, like other psychotherapies, these memories would be shared, discussed, or vocalized. This could have been viewed by participants as a method of seeking treatment and not having to risk the potential of increased stigmatization by disclosing painful or embarrassing narratives or emotions.

The proposed value of evaluating treatment choice is the idea that through the process of evaluation and selection the patient assumes partial responsibility, and adherence increases with subsequent improvement (Carpenter et al., 1999). Currently, the dissemination efforts of policy makers, agencies, and organizations are for providers to only provide evidence-based treatments (EBTs; Resnick et al., 2009). However, some EBTs do not lead to the same results in real-world applications as they do in controlled studies, and many researchers are investigating possible explanations. If treatment choice carries the weight of influence as proposed by previous research (e.g., Milliken et al., 2007), then one of the potential negating factors of effective treatment is simply that the patient did not like it for any number of reasons.

The view of the patient actively choosing a treatment that addresses presenting problems was assumed by Carpenter and colleagues (1999) but never validated. The data found in the current study could lend evidence that patients endorse treatments that enable, rather than treat, symptoms of psychological distress. For example, CPT does not focus on behavioral exposure to anxiety-provoking stimuli to the same degree as PE. Instead, CPT focuses more on cognitive

alterations and working through “stuck points” with patients. The predictive factors of choosing CPT were high avoidance and intrusion symptoms and lower depression.

Comfort seeking considerations in treatment may be different throughout the lifespan. Age was only predicative of SSRI medication alone as treatment. Previous studies (e.g., Zoellner et al., 2003) suggest medication was more likely endorsed by those who considered the time commitment of weekly sessions too burdensome, and this could also be reflective in our sample. Considering the effectiveness of SSRI medications alone with Veterans, this convenience could also be an enabling behavior. Qualitative explanations were not collected from participants, which could have provided valuable information into the rationale behind treatment choice.

Symptoms predictive of WT and WEP choice were unique from other treatments in that a lower general overall psychological well-being was indicated. The DUKE Mental Health domain is calculated using scores relating to self-esteem, overall mood, motivation, and nervousness. Symptoms more consistent with a definitive diagnosis were not predictive, or as strong, as overall well-being. The description did not suggest, as with other treatments, that a specific symptom or a disorder would be targeted. The patient symptoms description and lack of predictability with other symptoms could be indicative of a need for an experiential process for self-fulfillment rather than treatment of a specific disorder. Predicative factors of WEP were also higher education and a shift from urban childhood setting to rural adult setting, which was not seen in other treatments. This would appear to be more consistent with integration difficulties as described in the literature (Shays, 2010), and other treatments described in this study would be inappropriate due to targeted focus.

Limitations

The data collected for this study was done so through mTurk, the online data collection service through Amazon Web Services. Verification of factors measured in this study could not be absolutely confirmed. The data was examined for unlikely combinations in demographic reporting (e.g., years of service, year of first deployment, current age), and no improbable combinations were detected. The use of mTurk, as with any on-line distance study, raises concerns of requesting information that may elicit strong emotional responses. For this reason we did not ask about prior trauma history or prior exposure to treatment. This information has yielded mixed results in previous studies but may have shown relationships in this study that could have provided useful information.

The use of mTurk may have also allowed for selection bias that we are unable to detect. Our participants are all part of an online Web Service system and are compensated for their time. The ability to do so, or the necessity to do so, may have limited both the internal and external validly of our study. That a significant majority of our sample scored over the clinical cut-off for symptoms of PTSD and avoidance behaviors is a cardinal symptom, which also limits external validity (generalizability). Additionally, we did not ask about service connection status or VA benefits status. This information could have provided insight into ability to use this sample as a comparison from VA studies.

Future Directions

The current study was exploratory in nature aimed at providing information for future hypothesis testing. This information, if confirmed by later studies following patient progress, could assist in creating predictive models for real-world applications to improve treatment adherence. Additionally, this information could benefit future treatment studies by examining the

factors that lead to a patient's expectation of treatment and considering their strength of actual treatment adherence and efficacy. Another potential future direction would be to use predictive data as means of understanding why certain populations choose each treatment. If those factors are understood better, then treatments could be modified to adapt to these differences.

References

Abramowitz, J. S., Deacon, B. J., & Whiteside, S. P. (2012). *Exposure therapy for anxiety: Principles and Practice*. New York, NY: Guilford Press.

Addis, M. E., & Carpenter, K. M. (1999). Why, why, why?: Reason giving and rumination as predictors of response to activation- and insight oriented treatment rationales. *Journal of Clinical Psychology, 55*, 881-894.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.

Attari, A., Rajabi, F., & Maracy, M. R. (2014). D-cycloserine for treatment of numbing and avoidance in chronic post traumatic stress disorder: A randomized, double blind, clinical trial. *Journal of Research in Medical Sciences: The Official journal of Isfahan University of Medical Sciences*, *19*, 592.

Bandelow, B., Sher, L., Bunevicius, R., Hollander, E., Kasper, S., Zohar, J., & Möller, H. J. (2012). Guidelines for the pharmacological treatment of anxiety disorders, obsessive–compulsive disorder and posttraumatic stress disorder in primary care. *International Journal of Psychiatry in Clinical Practice*, *16*, 77-84.

Basoglu, M., Livanou, M., & Crnobaric, C. (2007). Torture vs. other cruel, inhuman, and degrading treatment. *Archives of General Psychiatry*, *64*, 277-285.

Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond*. New York, NY: Guilford Press.

Becker, C. B., Zayfert, C., & Anderson, E. (2004). A survey of psychologists' attitudes towards

and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy*, *42*, 277-292.

Bradley, R., Greene, J., Russ, E., Dutra, L., & Westen, D. (2005). A multidimensional meta-analysis of psychotherapy for PTSD. *American Journal of Psychiatry*, *162*, 214-227.

Brancu, M., Thompson, N. L., Beckham, J. C., Green, K. T., Calhoun, P. S., Elbogen, & E. B., Wagner, H. R. (2014). The impact of social support on psychological distress for US Afghanistan/Iraq era Veterans with PTSD and other psychiatric diagnoses. *Psychiatry Research, 217*, 86-92.

Bremner, J. D., Randall, P., Scott, T. M., Bronen, R. A., Seibyl, J. P., Southwick, S. M., & Innis, R. B. (1995). MRI-based measurement of hippocampal volume in patients with combat-related posttraumatic stress disorder. *American Journal of Psychiatry, 152*, 973-98l.

Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, *68*(5), 748.

Brown, M.C., Creel, A.H., Engel, C.C., Herrell, R.K., & Hoge, C.W. (2011). Factors associated with interest in receiving help for mental health problems in combat Veterans returning from deployment to Iraq. *Journal of Nervous and Mental Disease, 199*, 797-801.

Bruce, J. M., Hancock, L. M., Arnett, P., & Lynch, S. (2010). Treatment adherence in multiple sclerosis: association with emotional status, personality, and cognition. *Journal of Behavioral Medicine*, *33*, 219-227.

Bryant, R. A., Moulds, M. L., Guthrie, R. M., Dang, S. T., Mastrodomenico, J., Nixon, R. D., & 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.

Burke, S. M., & Utley, A. (2013). Climbing towards recovery: Investigating physically injured combat Veterans' psychosocial response to scaling Mt. Kilimanjaro. *Disability and Rehabilitation, 35*, 732-739.

Caddick, N., & Smith, B. (2014). The impact of sport and physical activity on the well-being of combat Veterans: A systematic review. *Psychology of Sport and Exercise, 15*, 9-18.

Cantor, C. (2009). Post-traumatic stress disorder: evolutionary perspectives. *Australian and New Zealand Journal of Psychiatry*, *43*, 1038-1048.

Card, J. J. (1977). Differences in the demographic and sociopsychological profile of ROTC vs non-ROTC students. *Journal of Vocational Behavior*, *11*, 196-215.

Cardona, R. A., & Ritchie, E. C. (2007). US military enlisted accession mental health screening: history and current practice. *Military Medicine*, *172*, 31-35.

Carlock, D. (2007). A Guide to Resources for Severely Wounded Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) Veterans. *Issues in Science and Technology Librarianship*, 52, 4.

Chard, K. M., Schumm, J. A., Owens, G. P., & Cottingham, S. M. (2010). A comparison of OEF and OIF Veterans and Vietnam Veterans receiving cognitive processing therapy. *Journal of Traumatic Stress*, *23*, 25-32.

Clark-Hitt, R., Smith, S.W., & Broderick, J.S. (2011). Help a buddy take a knee: Creating persuasive messages for military service members to encourage others to seek mental health help. *Health Communication,* 1-10.

Cochran, B. N., Pruitt, L., Fukuda, S., Zoellner, L. A., & Feeny, N. C. (2008). Reasons Underlying Treatment Preference An Exploratory Study. *Journal of Interpersonal Violence*, *23*(2), 276-291.

Cully, J. A., Jameson, J. P., Phillips, L. L., Kunik, M. E., & Fortney, J. C. (2010). Use of psychotherapy by rural and urban Veterans. *The Journal of Rural Health*, *26*, 225-233.

Cully, J. A., Tolpin, L., Henderson, L., Jimenez, D., Kunik, M. E., & Petersen, L. A. (2008). Psychotherapy in the Veterans Health Administration: missed opportunities?. *Psychological Services*, *5*, 320.

Davidson, P. R., & Parker, K. C. H. (2001). Eye movement desensitization and reprocessing (EMDR): A meta-analysis. *Journal of Consulting and Clinical Psychology, 69*, 305-316.

de Kleine, R. A., Hendriks, G.-J., Kusters, W. J. C., Broekman, T. G., & van Minnen, A. (2012). A randomized placebo-controlled trial of d-cycloserine to enhance exposure therapy for posttraumatic stress disorder. *Biological Psychiatry*, 71, 962.

Dekel, R., & Monson, C. M. (2010). Military-related post-traumatic stress disorder and family relations: Current knowledge and future directions. *Aggression and Violent Behavior*, *15*, 303-309.

Devilly, G. J. (2002). Eye movement desensitization and reprocessing: A chronology of its development and scientific standing. *The Scientific Review of Mental Health Practice, 1*, 113-138.

Devilly, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/expectancy questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry*, *31*, 73-86.

Dickerson, S. S., & Kemeny, M. E. (2004). Acute stressors and cortisol responses: a theoretical integration and synthesis of laboratory research. *Psychological Bulletin*, *130*, 355.

Dietrich, Z. C., Joye, S. W., & Garcia, J. A. (2015). Natural medicine: Wilderness experience outcomes for combat Veterans. Advance online publication. *Journal of Experiential Education*, *38*(4), 394-406.

Dustin, D., Bricker, N., Arave, J., Wall, W., & Wendt, G. (2011). The promise of river running as a therapeutic medium for Veterans coping with post-traumatic stress disorder. *Therapeutic Recreation Journal, 45*, 326-340.

Eftekhari, A, Stines, L.R., & Zoellner, L.A. (2006). Do you need to talk about it? Prolonged exposure for the treatment of chronic PTSD. *The Behavior Analyst Today*, 7, 70–83.

Erbes, C. R., Curry, K. T., & Leskela, J. (2009). Treatment presentation and adherence of Iraq/Afghanistan era Veterans in outpatient care for posttraumatic stress disorder. *Psychological Services, 6*, 175-183.

Erbes, C., Westermeyer, J., Engdahl, B., & Johnsen, E. (2007). Post-traumatic stress disorder and service utilization in a sample of service members from Iraq and Afghanistan. *Military Medicine*, *172*, 359-363.

Foa, E. B., Keane, T. M., & Friedman, M. J. (2000). Guidelines for treatment of PTSD. *Journal of Traumatic Stress*, *13*, 539-588.

Foa, E. B., Zinbarg, R., & Rothbaum, B. O. (1992). Uncontrollability and unpredictability in post-traumatic stress disorder: an animal model. *Psychological Bulletin*, *112*(2), 218.

Fontana, A., & Rosenheck, R. (2008). Treatment-seeking Veterans of Iraq and Afghanistan: Comparison with Veterans of previous wars. *The Journal of Nervous and Mental Disease*, *196*, 513-521.

Friese, G., Hendee, J. C., & Kinziger, M. (1998). The wilderness experience program industry in the United States: Characteristics and dynamics. *Journal of Experiential Education, 21*, 40-45.

Friedman, M. J. (2006). Posttraumatic stress disorder among military returnees from Afghanistan and Iraq. *The American Journal of Psychiatry*, *163*, 586-593.

Gelkopf, M., Hasson-Ohayon, I., Bikman, M., & Kravetz, S. (2013). Nature adventure rehabilitation for combat-related posttraumatic chronic stress disorder: A randomized control trial. *Psychiatry Research, 209*, 485-493.

Hardman, J., & Limbird, L. (2001). Goodman & Gilman's pharmacological basis of therapeutics (10th ed.). New York: McGraw Hill.

Hafemeister, T. L., & Stockey, N. A. (2010). Last stand? The criminal responsibility of war Veterans returning from Iraq and Afghanistan with posttraumatic stress disorder. *Indiana Law Journal*, *85*(1).

Hertzberg, M. A., Feldman, M. E., Beckham, J. C., Kudler, H. S., & Davidson, J. R. (2000). Lack of efficacy for fluoxetine in PTSD: A placebo controlled trial in combat Veterans. *Annals of Clinical Psychiatry*, *12*, 101-105.

Hofmann, S. G., Sawyer, A. T., Korte, K. J., & Smits, J. A. (2009). Is it beneficial to add pharmacotherapy to cognitive-behavioral therapy when treating anxiety disorders? A meta-analytic review. *International Journal of Cognitive Therapy*, *2*, 160.

Hofmann, S. G., Wu, J. Q., & Boettcher, H. (2013). D-Cycloserine as an augmentation strategy for cognitive behavioral therapy of anxiety disorders. *Biology of Mood and Anxiety Disorders*, *11*, 1-10.

Hoge, C. W. (2010). *Once a warrior always a warrior: Navigating the transition from combat to home*. Guilford, CT: Globe Pequot Press.

Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *New England Journal of Medicine*, *351*, 13-22.

Hundt, N. E., Mott, J. M., Cully, J. A., Beason-Smith, M., Grady, R. H., & Teng, E. (2014).

Factors associated with low and high use of psychotherapy in Veterans with PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy, 6*, 731-738.

Jackson, J. J., Thoemmes, F., Jonkmann, K., Lüdtke, O., & Trautwein, U. (2012). Military Training and Personality Trait Development Does the Military Make the Man, or Does the Man Make the Military?. *Psychological Science*,*23*, 270-277.

Jelalian, E., Mehlenbeck, R., Lloyd-Richardson, E. E., Birmaher, V., & Wing, R. R. (2006). 'Adventure therapy' combined with cognitive-behavioral treatment for overweight adolescents. *International Journal of Obesity*, *30*, 31-39.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big five trait taxonomy. *Handbook of Personality: Theory and Research*, *3*, 114-158.

Johnston, S.L., Webb-Murphy, J.A., Raducha, S.C., & Abou, E.J. (2011, August). *Operational Stress in Detainee Operations at Joint Task Force Guantanamo Bay Cuba*. Symposium conducted at the American Psychological Association Convention, Washington, D.C

Kemp, J., & Bossarte, R. (2013). *Suicide Data Report: 2012*. Washington, DC: Department of Veterans Affairs

Kessler, R. C. (2000). Posttraumatic stress disorder: the burden to the individual and to society. *The Journal of Clinical Psychiatry*, *61*, 4.

Kim, W., Lim, S. K., Chung, E. J., & Woo, J. M. (2009). The effect of cognitive behavior therapy-based psychotherapy applied in a forest environment on physiological changes and remission of major depressive disorder. *Psychiatry Investigation*, *6*, 245-254.

Kirchner, J. E., Farmer, M. S., Shue, V. M., Blevins, D., & Sullivan, G. (2011). Partnering with communities to address the mental health needs of rural Veterans. *The Journal of Rural Health*, *27*, 416-424.

Litz, B. T., Salters-Pedneault, K., Steenkamp, M. M., Hermos, J. A., Bryant, R. A., Otto, M. W., et al. (2012). A randomized placebo-controlled trial of d-cycloserine and exposure therapy for posttraumatic stress disorder. *Journal of Psychiatric Research*, *11*, 11.

Liu, P., Wang, L., Cao, C., Wang, R., Zhang, J., Zhang, B., & Elhai, J. D. (2014). The underlying dimensions of DSM-5 posttraumatic stress disorder symptoms in an epidemiological sample of Chinese earthquake survivors. *Journal of Anxiety Disorders*, *28*, 345-351.

McDonald, S. D., & Calhoun, P. S. (2010). The diagnostic accuracy of the PTSD Checklist: A critical review. *Clinical Psychology Review*, *30*, 976-987.

McNally, R. J., Lasko, N. B., Macklin, M. L., & Pitman, R. K. (1995). Autobiographical memory disturbance in combat-related posttraumatic stress disorder. *Behaviour Research and Therapy*, *33*, 619-630.

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. *JAMA: The Journal of the American Medical Association*, *298*, 2141-2148.

Monson, C. M., Schnurr, P. P., Resick, P. A., Friedman, M. J., Young-Xu, Y., & Stevens, S. P. (2006). Cognitive processing therapy for Veterans with military-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, *7*4, 898.

Mott, J. M., Hundt, N. E., Sansgiry, S., Mignogna, J., & Cully, J. A. (2014). Changes in psychotherapy utilization among Veterans with depression, anxiety, and PTSD. *Psychiatric Services, 65*, 106-112.

Nelson, G. A. (1948). Personality and attitude differences associated with the elective substitution of ROTC for the physical education requirement in high school. *Research*

Quarterly. American Association for Health, Physical Education and Recreation, *19*, 2-17.

Neylan, T. C., Marmar, C. R., Metzler, T. J., Weiss, D. S., Zatzick, D. F., Delucchi, K. L., & Schoenfeld, F. B. (1998). Sleep disturbances in the Vietnam generation: findings from a nationally representative sample of male Vietnam Veterans. *The American Journal of Psychiatry*, *155*, 7.

Norberg, M. M., Krystal, J. H., & Tolin, D. F. (2008). A meta- analysis of D-cycloserine and the facilitation of fear extinction and exposure therapy. *Biological Psychiatry*, 63, 1118-1126.

Otto, M. W., Hinton, D., Korbly, N. B., Chea, A., Ba, P., Gershuny, B. S., & Pollack, M. H. (2003). Treatment of pharmacotherapy-refractory posttraumatic stress disorder among Cambodian refugees: a pilot study of combination treatment with cognitive-behavior therapy vs sertraline alone. *Behaviour Research and Therapy*, *41*, 1271-1276.

Ouimette, P., Vogt, D., Wade, M., Tirone, V., Greenbaum, M. A., Kimerling, R., & Rosen, C. S. (2011). Perceived barriers to care among Veterans health administration patients with posttraumatic stress disorder. *Psychological Services*, *8*, 212.

Parkerson Jr, G. R., Broadhead, W. E., & Tse, C. K. J. (1990). The Duke Health Profile: a 17-item measure of health and dysfunction. *Medical Care*, 1056-1072.

Pruitt, L. D., Zoellner, L. A., Feeny, N. C., Caldwell, D., & Hanson, R. (2012). The effects of positive patient testimonials on PTSD treatment choice. *Behaviour Research and Therapy*, *50*, 805-813.

Ramchand, R., Tanielian, T., Fisher, M. P., Vaughan, C. A., Trail, T. E., Epley, C., & Ghosh-Dastidar, B. (2014). *Hidden heroes: America's military caregivers*. Santa Monica, CA: RAND.

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item

short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, *41*(1), 203-212.

Raskin, M. (2009). Pharmacological treatment. In Shiroman, P (Ed.), Keane, T. (Ed.) & Ledoux, J. (Ed.) *Post-Traumatic Stress Disorder* (pp. 314-354). New York, NY: Humana Press.

Raskind, M. A., Peskind, E. R., Hoff, D. J., Hart, K. L., Holmes, H. A., Warren, D., & McFall, M. E. (2007). A parallel group placebo controlled study of prazosin for trauma nightmares and sleep disturbance in combat Veterans with post-traumatic stress disorder. *Biological Psychiatry*, *61*, 928-934.

Rauch, S. A., Defever, E., Favorite, T., Duroe, A., Garrity, C., Martis, B., & Liberzon, I. (2009). Prolonged exposure for PTSD in a Veterans Health Administration PTSD clinic. *Journal of Traumatic Stress*, *22*(1), 60-64.

Rauch, S. L., van der Kolk, B. A., Fisler, R. E., Alpert, N. M., Orr, S. P., Savage, C. R., Pitman, R. K. (1996). A symptom provocation study of posttraumatic stress disorder using positron emission tomography and script-driven imagery. *Archives of General Psychiatry, 53*, 380-387.

Resick, P. A., Galovski, T. E., Uhlmansiek, M. O. B., Scher, C. D., Clum, G. A., & Young-Xu, Y. (2008). A randomized clinical trial to dismantle components of cognitive processing therapy for posttraumatic stress disorder in female victims of interpersonal violence. *Journal of Consulting and Clinical Psychology*, *76*, 243.

Rescorla, R.A. & Wagner, A.R. (1972) A theory of Pavlovian conditioning: Variations in the effectiveness of reinforcement and nonreinforcement, Classical Conditioning II, A.H. Black & W.F. Prokasy, Eds., pp. 64–99. New York, NY: Appleton-Century-Crofts.

Resick, P. A., Monson, C. M., & Chard, K. M. (2007). *Cognitive processing therapy: Veteran/military version.* Washington, DC: Department of Veterans Affairs.

Ronconi, J. M., Shiner, B., & Watts, B. V. (2014). Inclusion and exclusion criteria in randomized controlled trials of psychotherapy for PTSD. *Journal of Psychiatric Practice*, *20*, 25-37.

Rosen, C. S., Chow, H. C., Finney, J. F., Greenbaum, M. A., Moos, R. H., Sheikh, J. I., & Yesavage, J. A. (2004). VA practice patterns and practice guidelines for treating posttraumatic stress disorder. *Journal of Traumatic Stress*, *17*, 213-222.

Rosen, J. B., & Schulkin, J. (1998). From normal fear to pathological anxiety. *Psychological Review*, *105*, 325.

Rothbaum, B. O., Cahill, S. P., Foa, E. B., Davidson, J. R., Compton, J., Connor, K. M., & Hahn, C. G. (2006). Augmentation of sertraline with prolonged exposure in the treatment of posttraumatic stress disorder. *Journal of Traumatic Stress*, *19*, 625-638.

Rubin, D. C., Berntsen, D., & Bohni, M. K. (2008). A memory-based model of posttraumatic stress disorder: evaluating basic assumptions underlying the PTSD diagnosis. *Psychological Review*, *115*, 985.

Russell, K. C. (2001). What is wilderness therapy?. *Journal of Experiential Education*, *24*, 70-79.

Sayer, N. A., Noorbaloochi, S., Frazier, P., Carlson, K., Gravely, A., & Murdoch, M (2010). Reintegration problems and treatment interests among Iraq and Afghanistan combat Veterans receiving VA medical care. *Psychiatric Services*, *61*, 589-597.

Schönfeld, S., & Ehlers, A. (2006). Overgeneral memory extends to pictorial retrieval cues and correlates with cognitive features in posttraumatic stress disorder. *Emotion*, *6*, 611.

Schneier, F. R., Neria, Y., Pavlicova, M., Hembree, E., Suh, E. J., Amsel, L., & Marshall, R. D. (2012). Combined prolonged exposure therapy and paroxetine for PTSD related to the World Trade Center attack: A randomized controlled trial. *American Journal of Psychiatry*, *169*, 80-

88.

Schnurr, P. P., Friedman, M. J., Engel, C. C., Foa, E. B., Shea, M. T., Chow, B. K., & Bernardy, N. (2007). Cognitive behavioral therapy for posttraumatic stress disorder in women: A randomized controlled trial. *Journal of the American Medical Association, 297*, 820-830.

Shiner, B., D'Avolio, L. W., Nguyen, T. M., Zayed, M. H., Young-Xu, Y., Desai, R. A., & Watts, B. V. (2013). Measuring use of evidence based psychotherapy for posttraumatic stress disorder. *Administration and Policy in Mental Health and Mental Health Services Research*, *4*0, 311-318.

Schuster, D. G. (2003). Neurasthenia and a modernizing America. *Journal of the American Medical Association, 290*, 2327-2328.

Shay, J. (2003). *Odysseus in America: Combat trauma and the trials of homecoming*. New York, NY: Simon & Schuster.

Shiromani, P., Keane, T., & LeDoux, J. E. (2009). *Post-traumatic stress disorder: Basic science and clinical practice*. NY, New York: Springer Science & Business Media.

Simon, N. M., Connor, K. M., Lang, A. J., Rauch, S., Krulewicz, S., LeBeau, R. T., & Pollack, M. H. (2008). Paroxetine CR augmentation for posttraumatic stress disorder refractory to prolonged exposure therapy. *Journal of Clinical Psychiatry*, *69*, 400-405.

Skopp, N. A., Bush, N. E., Vogel, D. L., Wade, N. G., Sirotin, A. P., McCann, R. A., & Metzger‐Abamukong, M. J. (2012). Development and initial testing of a measure of public and self‐stigma in the military. *Journal of Clinical Psychology*, *68*, 1036-1047.

Stahl, S., Grady, M., & Munter, N. (2005). *Essential psychopharmacology: The prescriber's guide*. Cambridge University Press: Cambridge, UK.

Stecker, T., Fortney, J. C., Hamilton, F., & Ajzen, I. (2007). An assessment of beliefs about

mental health care among Veterans who served in Iraq. *Psychiatric Services*, *58*, 1358-1361.

Stein, D. J., Ipser, J. C., & Seedat, S. (2006). Pharmacotherapy for post traumatic stress disorder (PTSD). *Cochrane Database of System Reviews*, *1*(1), 6-32

Sung, J., Woo, J. M., Kim, W., Lim, S. K., & Chung, E. J. (2012). The effect of cognitive behavior therapy-based "forest therapy" program on blood pressure, salivary cortisol level, and quality of life in elderly hypertensive patients. *Clinical and Experimental Hypertension*, *34*, 1-7.

Sutherland, K., & Bryant, R. A. (2005). Self‐defining memories in post‐traumatic stress disorder. *British Journal of Clinical Psychology*, *44*, 591-598.

Tanielian, T. L., & Jaycox, L. (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery*. Santa Monica, CA: RAND.

The Management of Posttraumatic Stress Working Group. (2010). VA/DoD clinical practice guideline for the management of post-traumatic stress. Washington, DC: Veterans Health Administration, Department of Defense.

Uddo, M., Vasterling, J. J., Brailey, K., & Sutker, P. B. (1993). Memory and attention in combat-related post-traumatic stress disorder (PTSD). *Journal of Psychopathology and Behavioral Assessment*, *15*, 43-52.

van der Kolk, B. A., Dreyfuss, D., Michaels, M., Shera, D., Berkowitz, R., Fisler, R., & Saxe, G. (1994). Fluoxetine in posttraumatic stress disorder. *The Journal of Clinical Psychiatry*, *55*(12), 517.

Vasterling, J. J., Duke, L. M., Brailey, K., Constans, J. I., Allain, A. N., & Sutker, P. B. (2002). Attention, learning, and memory performances and intellectual resources in Vietnam Veterans: PTSD and no disorder comparisons. *Neuropsychology*, *16*, 5.

Vasterling, J. J., Proctor, S. P., Amoroso, P., Kane, R., Heeren, T., & White, R. F. (2006). Neuropsychological outcomes of army personnel following deployment to the Iraq war. *Journal of the American Medical Association*, *296*, 519-529.

Verfaellie, M., & Vasterling, J. J. (2009). Memory in PTSD: A neurocognitive approach. Shiroman, P (Ed.), Keane, T (Ed.) & Ledoux, J (Ed.) *Post-Traumatic Stress Disorder* (pp. 105-130). New York, NY: Humana Press.

Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of Counseling Psychology*, *53*, 325.

Vogt, D., Fox, A. B., & Di Leone, B. A. (2014). Mental health beliefs and their relationship with treatment seeking among US OEF/OIF Veterans. *Journal of Traumatic Stress*, *27*, 307-313.

Walker, D. L., Ressler, K. J., Lu, K. T., & Davis, M. (2002). Facilitation of conditioned fear extinction by systemic administration or intra-amygdala infusions of D-cycloserine as assessed with fear-potentiated startle in rats. *Journal of Neuroscience*, 22, 2343-2351.

Wang, P. S., Lane, M., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Twelve-Month Use of Mental Health Services in the United States. *Archives of General Psychiatry*, *62*, 629-640.

Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P.P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. Washington, D.C.: National Center for PTSD.

Wilkins, K. C., Lang, A. J., & Norman, S. B. (2011). Synthesis of the psychometric properties of the PTSD checklist (PCL) military, civilian, and specific versions. *Depression and Anxiety*, *28*, 596-606.

Wolpe, J. (1982). *The practice of behavior therapy (3rd ed.).* New York: Pergamon Press.

Wolitzky-Taylor, K. B., Horowitz, J. D., Powers, M. B., & Telch, M. J. (2008). Psychological approaches in the treatment of specific phobias: A meta-analysis. *Clinical Psychology Review*, *28*, 1021-1037.

Veterans Administration *(2017).* About VHA - Veterans Health Administration . Va.gov. *Retrieved 26 March 2017, from* ***https://www.va.gov/health/aboutvha.asp***

van der Kolk, B. A., Dreyfuss, D., Michaels, M., Shera, D., Berkowitz, R., Fisler, R., & Saxe, G. (1994). Fluoxetine in posttraumatic stress disorder. *The Journal of Clinical Psychiatry*, *55*, 517.

Yehluda, R. (2001). Biology of posttraumatic stress disorder. *The Journal of Clinical Psychiatry. Supplement*, *62*, 41-46.

Yehuda, R., Tischler, L., Golier, J. A., Grossman, R., Brand, S. R., Kaufman, S., & Harvey, P. D. (2006). Longitudinal assessment of cognitive performance in Holocaust survivors with and without PTSD. *Biological Psychiatry*, *60*, 714-721.

Zatzick, D. F., Marmar, C. R., Weiss, D. S., Browner, W. S., Metzler, T. J., Golding, J.M., & Wells, K. B. (1997). Posttraumatic stress disorder and functioning and quality of life outcomes in a nationally representative sample of male Vietnam Veterans. *American Journal of Psychiatry*, *154*, 1690-1695

Zayfert, C., DeViva, J. C., Becker, C. B., Pike, J. L., Gillock, K. L., & Hayes, S. A. (2005). Exposure utilization and completion of cognitive behavioral therapy for PTSD in a “real world” clinical practice. *Journal of Traumatic Stress*, *18*, 637-645.

Zen, A. L., Whooley, M. A., Zhao, S., & Cohen, B. E. (2012). Post-traumatic stress disorder is associated with poor health behaviors: Findings from the heart and soul study. *Health Psychology*, *31*, 194.

Zoellner, L. A., Feeny, N. C., & Bittinger, J. N. (2009). What you believe is what you want: Modeling PTSD-related treatment preferences for sertraline or prolonged exposure. *Journal of Behavior Therapy and Experimental Psychiatry*,*40*, 455-467.

Zoellner, L. A., Feeny, N. C., Cochran, B., & Pruitt, L. (2003). Treatment choice for PTSD. *Behaviour Research and Therapy*, *41*, 879-886.

Table 1

Descriptive Statistics and t-test Statistics for Selected Demographic Variables

	Group							
	Vietnam (n = 25)			Post 9/11 (n = 160)				
Demographic	M	(SD)	Range	M	(SD)	Range	t for Group Contrast	p-value
Age	65.48	2.93	61-71	31.31	4.66	21-40	49.34	<.001
Years in Service	3.76	4.29	2-21	7.34	3.94	4-24	4.18	<.001
Total Months Deployed	12.12	5.26	4-32	14.64	7.24	2-37	2.11	.041
Number of Deployments	1.12	0.44	1-3	2.07	1.01	1-6	7.99	<.001
Highest Obtained Rank	5.16	2.72	3-17	5.91	2.51	3-16	1.37	.173
Rurality in Childhood	2.32	1.41	1-7	4.14	1.35	1-6	6.23	<.001
Current Rurality	4.27	1.31	2-7	3.13	1.08	1-5	6.63	<.001

Note. t for group contrast with 183 *df.*

Table 2

Descriptive Statistics and t-test Statistics for Mental Health, Personality, and Stigma Measures

	Group							
	Vietnam (n = 25)			Post 9/11 (n = 160)				
Measure	M	(SD)	Range	M	(SD)	Range	t for Group Contrast	p-value
DUKE								
Physical Health	69.20	25.97	10-100	73.50	20.07	10-100	0.96	.341
Mental Health	67.20	15.95	50-100	71.75	16.62	30-100	1.28	.202
Social Health	56.00	14.72	30-100	48.44	18.80	10-100	1.91	.057
General Health	64.13	14.22	40-93.33	64.56	13.03	30-100	0.15	.888
Anxiety	40.65	13.67	0-66.64	43.11	19.25	0-83.33	0.79	.437
Depression	38.40	12.14	10-50	38.44	14.86	10-80	0.01	.989
Pain	46.00	35.12	0-100	34.69	29.67	0-100	1.73	.086
Disability	---	---	---	4.06	15.83	0-100	---	---
Self-Esteem	71.60	17.94	40-90	60.44	18.30	20-100	2.84	.005
PCL-5 Total	42.60	12.67	14-60	49.26	12.69	0-75	2.44	.016
Intrusion Symptoms	3.00	0.75	1.8-4.4	3.4	0.68	1-5	2.64	.009
Avoidance Symptoms	3.26	1.02	1.5-4.5	3.55	0.79	1-5	1.67	.096
Alterations in Mood	3.20	0.73	1.71-4	3.47	0.70	1-4.71	1.83	.070
Alterations in Arousal	3.11	0.59	1.67-4	3.47	0.69	1-4.67	2.46	.015
BFI								
Openness	4.80	2.58	2-10	5.45	2.61	2-10	1.16	.247
Contentiousness	6.81	2.40	4-10	6.70	2.28	2-10	0.20	.840
Extraversion	5.96	1.86	2-8	6.03	2.12	2-9	0.15	.874
Agreeableness	5.52	1.94	3-8	5.79	1.99	3-10	0.64	.521
Neuroticism	6.76	2.07	1-10	6.63	2.11	2-10	0.29	.766
SSOSH	28.72	5.61	13-42	28.89	5.95	12-42	0.13	.895

Note. DUKE = *Duke Health Profile*; PCL-5 = *Title PTSD Checklist for DSM-5;* BFI = *Big Five Inventory*; SSOSH = *Self-Stigma of Seeking Help Scale*; t for group contrast with 183 *df.*

Table 3

Descriptive Statistics for Credibility and Expectancy by Group and Treatment

	Credibility				Expectancy			
	Vietnam (*n* = 25)		Post 9/11 (*n* = 160)		Vietnam (*n* = 25)		Post 9/11 (*n* = 160)	
Treatment Option	M	(*SD*)	M	(*SD*)	M	(*SD*)	M	(*SD*)
CPT	3.00	1.36	3.31	1.25	35.20	34.90	39.56	26.31
PE	3.70	1.41	3.59	1.04	40.40	25.74	42.00	19.16
EMDR	1.84	1.17	2.00	1.25	18.40	18.64	19.31	17.09
SSRI	2.63	1.22	2.63	1.35	18.40	18.86	27.38	21.26
WEP	3.69	1.52	3.90	1.48	44.80	23.12	42.06	22.43
WT	4.39	1.93	4.50	1.55	48.80	24.72	59.13	21.47
D-Cycloserine	3.43	0.88	3.26	1.41	37.20	23.19	37.88	20.04
SSRI/Therapy Combo	3.29	1.16	3.21	1.41	38.80	16.41	37.88	21.90
No Treatment	1.77	0.97	1.32	0.89	17.60	18.32	15.88	20.45

Note. CPT = *Cognitive Processing Therapy;* PE = *Prolonged Exposure;* EMDR = *Eye Movement Desensitization and Reprocessing;* SSRI = *Selective Serotonin Reuptake Inhibitor;* WEP = *Wilderness Experience Program*; WT = *Wilderness Therapy.*

Table 4

Multiple Regression Model Outcomes for Cognitive Processing Therapy

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	6.01	0.71		8.42	<.001
SSOSH	-0.07	0.02	-0.31	3.71	<.001
BFI Extroversion	-0.08	0.04	-0.14	2.01	.047
DUKE Depression	-0.03	0.08	-0.39	4.16	<.001
DUKE Pain	0.02	0.01	0.38	3.97	<.001
PCL-5 Avoidance	0.51	0.15	0.33	3.47	.001
PCL-5 Alterations in Arousal	-0.36	0.17	-0.19	2.11	.036
$R^2 = .216$					
Expectancy					
Constant	58.015	12.041		4.82	<.001
DUKE Anxiety	-0.261	0.135	-0.176	1.93	.055
SSOSH	-1.337	0.409	-0.286	3.27	.001
PCL-5 Intrusion Symptoms	13.762	4.371	0.357	3.15	.002
PCL-5 Avoidance	5.502	2.996	0.165	1.84	.068
PCL-5 Alterations in Arousal	-10.121	4.59	-0.253	2.21	.029
$R^2 = .160$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale;* BFI = *Big Five Inventory*; PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile.*

Table 5

Multiple Regression Model Outcomes for Prolonged Exposure Therapy

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	4.84	0.01		12.71	<.001
DUKE Pain	-0.01	0.03	-0.31	4.05	<.001
SSOSH	-0.03	0.02	-0.16	2.05	.042
$R^2 = .162$					
Expectancy					
Constant	41.44	6.83		6.09	<.001
DUKE Anxiety	-0.35	0.09	-0.33	4.05	<.001
PCL-5 Intrusion Symptoms	4.57	2.26	0.16	2.02	.045
$R^2 = .083$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale;* PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile.*

Table 6

Multiple Regression Model Outcomes for D-Cycloserine and PE Combination

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	6.59	0.47		14.029	<.001
PCL-5 Alterations in Arousal	-0.70	0.15	-0.36	4.76	<.001
SSOSH	-0.13	0.01	-0.57	9.05	<.001
PCL-5 Avoidance	0.77	0.12	0.47	6.46	<.001
$R^2 = .429$					
Expectancy					
Constant	77.637	6.825		11.375	<.001
SSOSH	-2.046	0.223	-0.59	9.169	<.001
PCL-5 Avoidance	8.208	1.64	0.332	5.005	<.001
PCL-5 Intrusion Symptoms	-9.937	1.994	-0.348	4.983	<.001
Number of Deployments	3.048	1.126	0.15	2.707	.007
DUKE Depression	0.46	0.086	0.326	5.347	<.001
$R^2 = .473$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale*; PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile.*

Table 7

Multiple Regression Model Outcomes for Eye Movement Desensitization and Reprocessing

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	4.09	0.61		6.71	<.001
SSOSH	0.05	0.02	0.21	2.80	.006
Number of Deployments	-0.21	0.09	-0.17	2.40	.018
PCL-5 Alterations in Mood	-0.76	0.14	-0.43	5.48	<.001
$R^2 = .186$					
Expectancy					
Constant	15.97	7.14		2.24	.026
SSOSH	0.90	0.23	0.31	3.87	<.001
PCL-5 Alterations in Mood	-6.60	1.96	-0.27	-3.37	.001
$R^2 = .103$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale;* PCL-5 = *PTSD Checklist for DSM-5.*

Table 8

Multiple Regression Model Outcomes for SSRI Medication

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	2.31	0.15		15.64	<.001
DUKE Pain	0.01	0.01	0.169	2.33	.021
DUKE Disability	0.02	0.01	0.163	2.24	.026
$R^{2 =}$ .054					
Expectancy					
Constant	13.63	8.68		1.57	.118
DUKE Pain	0.12	0.05	0.18	2.52	.012
PCL-5 Avoidance	5.65	1.82	0.22	3.11	.002
R^2 = .122					

Note. PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile.*

Table 9

Multiple Regression Model Outcomes for SSRI Medication and Therapy Combination

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	4.94	0.41		12.18	<.001
SSOSH	-0.14	0.02	-0.59	9.74	<.001
PCL-5 Avoidance	0.26	0.09	0.16	3.05	.003
DUKE Anxiety	-0.04	0.01	-0.52	6.15	<.001
DUKE Depression	0.08	0.01	0.80	10.75	<.001
$R^2 = .578$					
Expectancy					
Constant	73.60	5.94		12.39	<.001
DUKE Pain	0.14	0.04	0.20	3.56	<.001
SSOSH	-2.95	0.21	-0.83	14.04	<.001
PCL-5 Avoidance	17.50	1.42	0.68	12.32	<.001
DUKE Anxiety	0.42	0.07	0.37	5.88	<.001
PCL-5 Intrusion Symptoms	-10.51	1.741	-0.35	6.04	<.001
$R^2 = .646$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale;* PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile.*

Table 10

Multiple Regression Model Outcomes for Wilderness Experience Program

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	6.17	0.70		8.82	<.001
PCL-5 Alterations in Arousal	-0.58	0.15	-0.27	3.87	<.001
Education	0.26	0.10	0.19	2.66	.009
Number of Deployments	-0.26	0.10	-0.17	2.48	.014
Current Rurality	-0.19	0.08	-0.16	2.34	.020
$R^2 = .141$					
Expectancy					
Constant	74.69	12.64		5.91	<.001
Education	3.33	1.45	0.16	2.27	.025
Months of Deployment	-0.48	0.22	-0.15	2.19	.030
DUKE Mental Health	-0.20	0.09	-0.15	2.12	.035
BFI Agreeableness	1.56	0.77	0.14	2.02	.045
PCL-5 Intrusion Symptoms	-9.24	2.15	-0.30	4.30	<.001
$R^2 = .162$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale;* BFI = *Big Five Inventory*; PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile*.

Table 11

Multiple Regression Model Outcomes for Wilderness Therapy

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	9.31	0.90		10.34	<.001
PCL-5 Alterations in Arousal	-0.42	0.16	-0.18	2.63	.009
DUKE Pain	-0.01	0.01	-0.18	2.09	.038
DUKE Mental Health	-0.02	0.01	-0.16	2.34	.020
Current Rurality	-0.21	0.09	-0.16	2.29	.023
Number of Deployments	-0.27	0.11	-0.17	2.54	.012
DUKE Depression	-0.02	0.01	-0.17	1.99	.048
$R^2 = .204$					
Expectancy					
Constant	98.86	13.89		7.12	<.001
Childhood Rurality	2.40	1.07	0.16	2.25	.026
DUKE Mental Health	-0.21	0.10	-0.16	2.13	.035
Current Rurality	-3.71	1.31	-0.21	2.83	.005
PCL-5 Alterations in Mood	-6.77	2.26	-0.21	2.99	.003
$R^2 = .118$					

Note. PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile*.

Table 12

Multiple Regression Model Outcomes for No Treatment

	B	SE B	Beta	*t*	*p*
Credibility					
Constant	3.70	0.28		13.24	<.001
DUKE Pain	0.01	0.00	0.17	2.46	<.001
PCL-5 Avoidance	-0.33	0.08	-0.30	4.16	.047
DUKE Anxiety	0.01	0.00	0.23	2.92	<.001
PCL-5 Intrusion Symptoms	-0.55	0.10	-0.43	5.68	<.001
$R^2 = .23$					
Expectancy					
Constant	58.02	12.04		4.82	<.001
SSOSH	-0.26	0.14	-0.18	1.93	.055
PCL-5 Avoidance	-1.34	0.41	-0.29	3.27	.001
DUKE Anxiety	13.76	4.37	0.38	3.15	.002
PCL-5 Intrusion Symptoms	5.50	3.01	0.17	1.84	.068
$R^2 = .118$					

Note. SSOSH = *Self-Stigma of Seeking Help Scale;* PCL-5 = *PTSD Checklist for DSM-5;* DUKE = *Duke Health Profile*.

Table 13

Summary of Significant Model Findings Across all Nine Treatment Options

	CPT		PE		Meds + PE		EMDR		SSRI		SSRI + therapy		WEP		WT		No Tx	
Variable	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E
Education													+	+				
Childhood Rurality																+		
Current Rurality													-		-	-		
Number of Deployments						+	-						-		-			
Months of Deployment														-				
DUKE Mental Health														-	-	-		
DUKE Anxiety		-		-							-	+					+	+
DUKE Depression	-					+					+				-			
DUKE Pain	+		-						+	+		+			-		+	
DUKE Disability									+									
PCL-5 Intrusion Symptoms		+		+		-						-		-			-	+
PCL-5 Avoidance	+	+			+	+				+	+	+					-	-
PCL-5 Alterations in Mood							-	-								-		
PCL-5 Alterations in Arousal	-	-			-								-		-			
BFI Extraversion	-																	
BFI Agreeableness														+				
SSOSH	-	-	-		-	-	+	+			-	-						-

Note. C = *Credibility*; E = *Expectancy*; CPT = *Cognitive Processing Therapy;* PE = *Prolonged Exposure;* Meds + PE = *D-Cycloserine with Prolonged Exposure*; EMDR = *Eye Movement Desensitization and Reprocessing;* SSRI = *Selective Serotonin Reuptake Inhibitor;* WEP = *Wilderness Experience Program*; WT = *Wilderness Therapy;* No Tx = *No treatment*; DUKE = *Duke Health Profile;* PCL-5 = *PTSD Checklist for DSM-5;* BFI = *Big Five Inventory*; SSOSH = *Self-Stigma of Seeking Help Scale.*

Appendix A

Vignette, Treatment Descriptions, and Credibility/Expectancy Questionnaire

Vignette

Instructions: Please read the following story. You will be asked for your opinion on the next several pages.

Peyton enlisted in the United States Military and shortly after was assigned to a six-month tour in a combat zone. During the deployment Peyton's daily routine was unpredictable, with frequent shifts between active combat and periods of calm. However, Peyton knew the danger inherent in the environment and was always vigilant to potential threats and ready to act at a second's notice. After deployment, Peyton immediately returned to civilian routines. Shortly after returning home, Peyton began experiencing physical reactions to sights, sounds, and smells that were similar to those experienced during deployment. Peyton then began to avoid reminders of the deployment because the physical reactions were too stressful. Peyton's personal life was also impacted, as activities that were once enjoyed were no longer interesting. Peyton felt the need to always be on guard, which led to trouble concentrating, always being on the lookout for threats, and constant irritability. Peyton began staying home more and increasingly cutting back on the number of family and friends seen on a regular basis. A few of Peyton's closest family and friends noticed this change and suggested Peyton should seek mental-health treatment.

Treatment Descriptions

Instructions: Consider Peyton's story and the following treatment options. After reading each treatment option, please answer the questions about each treatment choice.

Name of treatment: Cognitive Processing Therapy (CPT)
Description: CPT typically includes 12 weekly sessions and involves discussion, learning coping skills, and writing about the event.
Goals: CPT primarily focuses on the thoughts and emotions surrounding the traumatic event to alleviate the psychological distress impacting current thoughts, emotions, and behaviors.
Potential Discomforts: It is possible that discomfort is experienced during treatment as the individual is asked to recall thoughts and emotions related to the event.

Name of treatment: Prolonged Exposure Therapy (PE)
Description: PE typically includes 8-15 weekly sessions and involves imagined and real exposure to situations, objects, and memories.
Goals: PE primarily focuses on the behaviors that maintain symptoms by evaluating avoidance behaviors and then confrontation to what is avoided. Confrontation occurs repeatedly until negative thoughts and bodily sensations from anxiety are no longer experienced.
Potential Discomforts: Confrontations will initially trigger feelings of anxiety.

Name of treatment: Eye Movement Desensitization and Reprocessing (EMDR)
Description: EMDR typically includes 8-15 weekly sessions and focuses on processing distressing memories while following the therapist's fingers with his/her eyes left to right.
Goals: The goal of EMDR is to reduce negative thoughts and emotions associated with the traumatic event.
Potential Discomforts: It is possible that discomfort is experienced during treatment as the individual is asked to recall thoughts and emotions related to the event.

Name of treatment: Selective Serotonin Reuptake Inhibitors (SSRIs)
Description: SSRIs are prescription medications that increase the amount of serotonin in the brain. Typically, treatment involves taking a pill once daily.
Goals: SSRIs are prescribed to alleviate distress through increasing mood-enhancing chemicals in the brain.
Potential Discomforts: Side effects may include nausea, decreased sexual interest, and feeling drowsy. Although, these side effects do not occur in everyone.

Name of treatment: Wilderness Experience Program (WEPs)
Description: WEPs are a form of treatment through using natural setting to "decompress" from a traumatic event. Typically this occurs through an extended hiking, kayaking, or mountain climbing trip.
Goals: The goal is for the individual to remove him/herself from stressors found in society and allows time to process the event at his/her own pace.
Potential Discomforts: Discomforts may vary depending on the type of experience in the wilderness that is chosen.

Name of treatment: Wilderness Therapy Programs (WT)
Description: WEPs are a form of treatment through using natural setting to "decompress" from a traumatic event. Typically this occurs through an extended hiking, kayaking, or mountain climbing trip and includes periodic in-person or electronic therapy (e.g. video chat, email) to assist in processing.
Goals: The goal is for the individual to remove him/herself from stressors found in society and allows time to process the event at his/her own pace.
Potential Discomforts: Discomforts may vary depending on the type of experience in the wilderness that is chosen.

Name of treatment: Medication-Assisted Therapy
Description: Individuals take an antibiotic medication 30 minutes before each therapy session. The antibiotic medication has been shown to assist in fear extinction when used during treatment sessions.
Goals: The goal is to increase the effectiveness of each treatment session.
Potential Discomforts: The medication does not alleviate potential discomfort during the course of the psychological treatment caused by recalling stressful events.

Name of treatment: antidepressant medication with traditional talk therapy
Description: Individuals take a daily antidepressant medication while attending traditional weekly sessions of traditional talk therapy.
Goals: The goal is to decrease symptoms that are experienced so that focus can be placed on psychological treatment.
Potential Discomforts: Discomforts from therapy may be significantly alleviated, but you may experience the side-effects of the medication which can include nausea, decreased sexual interest, and feeling drowsy.

No treatment
Description: Some individuals do not seek treatment find strategies to manage and overcome symptoms themselves. Some individuals are successful while others are not and symptoms are maintaining for a lifetime. There is no "typical" time of recovery.
Potential Discomforts: Discomforts vary across individuals.

Credibility/Expectancy Questionnaire
These questions will be asked at the end of each treatment description.

1. How logical does the treatment described to you seem?

1----------2----------3----------4----------5----------6----------7
Not at all *Extremely*

2. How successfully do you think this treatment will be in reducing symptoms?

1----------2----------3----------4----------5----------6----------7
Not at all *Extremely*

3. How confident would you be in recommending this treatment to a friend?

1----------2----------3----------4----------5----------6----------7
Not at all *Extremely*

4. How much improvement in symptoms do you think will occur?

1----------2----------3----------4----------5----------6----------7
Not at all *Extremely*

5. How much do you really feel that this treatment will help reduce symptoms?

1----------2----------3----------4----------5----------6----------7
Not at all *Extremely*

6. How much improvement in symptoms do you really feel will occur from this treatment?

1----------2----------3----------4----------5----------6----------7
Not at all *Extremely*

7. Please rate the following:

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
By the end of the treatment period, how much improvement in symptoms do you think will occur?	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Appendix B

Duke Health Profile

Instructions: Here are some questions about your health and feelings. Please read each question carefully and check your best answer. You should answer the questions in your own way. There are no right or wrong answers.

	Yes, describes me exactly	Somewhat describes me	No, doesn't describe me at all
1. I like who I am……..			
2. I am not an easy person to get along with……			
3. I am basically a health person…….....			
4. I give up too easily……			
5. I have difficult concentrating……			
6. I am happy with my family relationships……..			
7. I am comfortable being around people……			

TODAY would you have any physical trouble or difficulty:

	None	Some	A Lot
8. Walking up a flight of stairs……			
9. Running the length of a football field……			

During the PAST WEEK: How much trouble have you had with:

	None	Some	A Lot
10. Sleeping……			
11. Hurting or aching in any part of your body……..			
12. Getting tired easily……..			
13. Feeling depressed or sad……			
14. Nervousness……			

During the PAST WEEK: How often did you:

	None	Some	A Lot
15. Socialize with other people (talk or visit with friends or relatives)……			
16. Take part in social, religious, or recreation activities (meetings, church, movies, sports, parties).			

During the PAST WEEK: How often did you:

	None	1-4 Days	5-7 Days
17. Stay in your home, nursing home, or hospital because of sickness, injury, or other health problem.			

Appendix C

PCL-5

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	*Not at all*	*A little bit*	*Moderately*	*Quite a bit*	*Extremely*
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again *(as if you were actually back there reliving it)*?	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience *(for example, heart pounding, trouble breathing, sweating)*?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience *(for example, people, places, conversations, activities, objects, or situations)*?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world *(for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)*?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings *(for example, being unable to feel happiness or have loving feelings for people close to you)*?	0	1	2	3	4
15. Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being "superalert" or watchful or on guard?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

Appendix D

Big Five Inventory-10

Instructions: Please circle the number for each item that best describes how well you feel following statements describe your personality.

I see myself as someone who…	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
… is reserved	1	2	3	4	5
… is generally trusting	1	2	3	4	5
… tends to be lazy	1	2	3	4	5
… is relaxed, handles stress well	1	2	3	4	5
… has few artistic interests	1	2	3	4	5
… is outgoing, sociable	1	2	3	4	5
… tends to find fault with others	1	2	3	4	5
… does a thorough job	1	2	3	4	5
… gets nervous easily	1	2	3	4	5
… has an active imagination	1	2	3	4	5
… is considerate and kind to almost everyone	1	2	3	4	5

Appendix E

Self-Stigma of Seeking Help Scale

Instructions: People at times find that they face problems for which they would consider seeking professional help. This can bring up reactions about what seeking help would mean. Please use the 5-point scale to rate the degree to which each item describes how you might react if you decided you needed to seek out professional help.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. I would feel inadequate if I went to a therapist for psychological help.	1	2	3	4	5
2. My self-confidence would NOT be threatened if I sought professional help.	1	2	3	4	5
3. Seeking psychological help would make me feel less intelligent.	1	2	3	4	5
4. My self-esteem would increase if I talked to a therapist.	1	2	3	4	5
5. My view of myself would not change just because I made the choice to see a therapist.	1	2	3	4	5
6. It would make me feel inferior to ask a therapist for help.	1	2	3	4	5
7. I would feel okay about myself if I made the choice to seek professional help.	1	2	3	4	5
8. If I went to a therapist, I would be less satisfied with myself.	1	2	3	4	5
9. My self-confidence would remain the same if I sought professional help for a problem I could not solve.	1	2	3	4	5
10. I would feel worse about myself if I could not solve my own problems.	1	2	3	4	5

Appendix F

Demographics

1. What is your age?

2. What is your gender?

☐ Male ☐ Female

3. What is your ethnicity?

4. What is your marital status?

☐ Single ☐ Married ☐ Divorced

☐ Separated ☐ Widow (er)

5. What is your highest level of obtained education?

☐ Some High School ☐ High School Diploma or Equivalent ☐ Some College

☐ Associates Degree ☐ Bachelors Degree ☐ Masters Degree ☐ Doctorate

6. What is the highest level of obtained education for **your mother**?

☐ Unsure ☐ Some High School ☐ Diploma or equivalent

☐ Some College ☐ Associates Degree ☐ Bachelors ☐ Masters ☐ Doctorate

7a. Are you currently in ROTC?

☐ Yes ☐ No

7b. If so, how long have you been in the ROTC?

7c. After you graduate college, do you plan on joining the military?

7d. If so, which branch of service will you join?

8a. Are you currently or have you ever been in the US military?

8b. If so, please indicate your branch of military service:

☐ Marine Corps ☐ Air Force ☐ ARMY ☐ Navy ☐ Coast Guard

8c. Please indicate how long you were in the military:

8d. What was your highest obtained military rank?

8e. Are you currently active duty, national guard, reserve, or Veteran?

9a. Have you ever served a combat deployment?

9b. Number of combat deployments:

9c. Approximate time in months of all deployments combined:

10. How would you describe the childhood environment that you feel has influenced you the most today?

Extremely Rural	*Very Rural*	*Somewhat Rural*	*Slightly Rural*	*Slightly Urban*	*Somewhat Urban*	*Very Urban*	*Extremely Urban*

11. How would you describe the environment were you currently reside?

Extremely Rural	*Very Rural*	*Somewhat Rural*	*Slightly Rural*	*Slightly Urban*	*Somewhat Urban*	*Very Urban*	*Extremely Urban*