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Effectiveness of Acceptance and Commitment Therapy as a Treatment for Posttraumatic Stress Disorder and Moral Injury

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EFFECTIVENESS OF ACCEPTANCE AND COMMITMENT THERAPY AS A TREATMENT FOR POSTTRAUMATIC STRESS DISORDER AND MORAL INJURY

by

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ABSTRACT

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Posttraumatic stress disorder (PTSD) is a common condition among military personal and veterans. Despite strong empirical support for first line treatments for PTSD, many veterans do not complete or respond to treatment. Research suggests that experiential avoidance is a contributing factor to both treatment dropout and minimal treatment gains. Acceptance and commitment therapy (ACT) is an empirically supported cognitive behavioral intervention that aims to decrease experiential avoidance while increasing psychological flexibility. Research has shown ACT to be a promising intervention for the treatment of PTSD; however, its effectiveness in veterans with PTSD is limited. Implementing an 8-week closed group design, this study examined the effectiveness of an ACT intervention for veterans with PTSD and subclinical PTSD who had previously completed a first line intervention for PTSD. Thirty-three veterans enrolled in the intervention, which focused on vitality (e.g., increasing valued living and

decreasing experiential avoidance) rather than symptom reduction. Symptom and process of change measures including PTSD symptoms, valued living, and quality of life were measured at pretreatment, posttreatment, and again at 1-month follow-up. Results found that 64.7% of veterans showed a favorable response to treatment as measured by a 5-point change in PTSD symptoms. Additionally, outcomes of interest including PTSD symptoms, valued living, depression, wellbeing, and moral injury by transgressions improved from pretreatment to posttreatment. Of note, a majority of treatment gains were not maintained at follow-up. Overall, results provide preliminary support for ACT as a second-line intervention for veteran PTSD. Empirical and clinical implications are discussed along with the potential limitations and future directions of this study.

(161 pages)

PUBLIC ABSTRACT

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Posttraumatic stress disorder (PTSD) is a common condition among military personal and veterans. Despite strong empirical support for first line treatments for PTSD, many veterans do not complete or respond to treatment. Research suggests that experiential avoidance is a contributing factor to both treatment dropout and minimal treatment gains. Acceptance and commitment therapy (ACT) is an empirically supported cognitive behavioral intervention that aims to decrease experiential avoidance while increasing psychological flexibility. Research has shown ACT to be a promising intervention for the treatment of PTSD; however, its effectiveness in veterans with PTSD is limited.

In conjunction with Utah State University (USU) and the Salt Lake City Veterans Affairs Medical Center, Ellen Bluett, a USU doctoral psychology student and staff psychologist at the VA conducted a study to examine a next-step treatment for veterans with PTSD. The main purpose of this study was to examine the effectiveness of an 8-week closed group design ACT intervention for veterans with PTSD and subclinical PTSD who had previously completed a first line intervention for PTSD. Thirty-three veterans enrolled in the intervention, which focused on vitality (e.g., increasing valued living and decreasing experiential avoidance) rather than symptom reduction. Symptom

and process of change measures including PTSD symptoms, valued living, and quality of life were measured at pretreatment, posttreatment, and again at 1-month follow-up.

Findings from this study showed that 64.7% of veterans showed a favorable response to treatment as measured by a 5-point change in PTSD symptoms. Additionally, outcomes of interest including PTSD symptoms, valued living, depression, wellbeing, and moral injury by transgressions improved from pretreatment to posttreatment. Of note, a majority of treatment gains were not maintained at follow-up. Overall, results provide preliminary support for ACT as a second-line intervention for veteran PTSD.

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CHAPTER I

INTRODUCTION

Posttraumatic Stress Disorder (PTSD) is classified as a trauma and stressor related disorder that is associated with severe stress reactions from exposure to a traumatic event (American Psychiatric Association [APA], 2013). An estimated 50% of women and 60% of men in the U.S. are exposed to a traumatic event during their lifetimes (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Lifetime prevalence for PTSD rates range from 7.8 to 25% (Green & Kaltman, 2003; Hidalgo & Davidson, 2000; Kessler et al., 1995). According to Gates and colleagues the occurrence of PTSD is higher amongst active military personal and veterans than the civilian population (Gates et al., 2012). Furthermore, PTSD has been identified as a "signature injury" amongst service members returning from deployments to Afghanistan to serve in OEF (Operation Enduring Freedom) and deployments to Iraq to serve in OIF (Operation Iraqi Freedom; Gates et al., 2012).

Military related trauma has other notable effects, including the potential to damage or transgress an individual's moral or ethical codes. Therefore, unsurprisingly exposure to war can be instrumental in the development of moral injury (Farnsworth, Drescher, Nieuwsma, Walser & Currier, 2014; Litz et al., 2009). Morally injurious experiences include "perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations" (Litz et al., 2009, p. 697). While, the etiology of moral injury shares similarities to fear conditioning and cognitive models of PTSD, they are not one and the same (Nash & Litz, 2013). There is a growing body of research aiming to understand how moral injury relates to posttraumatic stress

(Farnsworth et al., 2014). Furthermore, no evidence-based treatments have been developed for moral injury.

Importantly, while effective treatments exist for PTSD- such as prolonged exposure and cognitive processing therapy, they are not without limitations. In fact, many individuals do not respond, demonstrate minimal gains posttreatment, and do not complete treatment (Garcia, Kelley, Rentz, & Lee, 2011; Steenkamp, Litz, Hoge, & Marmar, 2015). Furthermore, dropout rates among the gold-standard treatments range between 0 and 54% (Schottenbauer, Glass, Arnkoff, Tendick, & Gray, 2008). Some literature suggests that avoidance may be the underlying factor contributing to treatment dropout and poor treatment gains (Walser & Westrup, 2007). Recently, there has been considerable research examining the role of experiential avoidance in the development and maintenance of PTSD (Walser & Westrup, 2007). Experiential avoidance is a method of actively avoiding or escaping particular private experiences, which is inversely related to overall psychological functioning. Additionally, higher rates of experiential avoidance correlate with poorer psychological functioning (e.g., Hayes, 2004; Walser & Westrup, 2007). Furthermore, experiential avoidance often reduces an individual's ability to engage in meaningful, values driven behaviors. In sum, research on alternative or secondary treatment options for PTSD- that target experiential avoidance is warranted.

Acceptance-based interventions target experiential avoidance and promote willingness to experience thoughts, feelings, and/or emotions, without changing their form, meaning, or frequency. Ultimately, acceptance allows an individual to engage in life regardless of the severity of their internal experiences. One such therapy, acceptance

and commitment therapy (ACT) has growing support as an intervention for anxiety disorders (Arch et al., 2012; Bluett, Homan, Morrison, Levin, & Twohig, 2014; Ruiz, 2010). The primary focus of an ACT treatment model is to increase behaviors that are consistent with personal values while simultaneously allowing for any given internal experience to be present. The emphasis on treatment is to increase vitality, rather than to reduce symptoms. Furthermore, several small studies have provided preliminary support for the use of ACT for PTSD.

Taken together, the prevalence and chronicity of PTSD and moral injury amongst military personal, along with the limitations of existing treatments, warrants the investigation of alternative treatment options for veterans with PTSD. Given the marked avoidance and broken or betrayed sense of self often experienced by veterans with PTSD, suggests that ACT may be useful at treating trauma associated with moral injury events. Additionally, empirical support exists for group-based interventions for PTSD (Sloan, Feinstein, Gallagher, Beck, & Keane, 2013). The purpose of this study is to examine the effectiveness of an ACT group intervention for PTSD in veterans.

This study sought to answer the following research questions.

1. Is ACT an effective treatment for veterans with PTSD? Specifically, does ACT positively impact PTSD symptom severity, quality of life, valued living, depression, shame, and moral injury?
2. Do pretreatment levels of depression, moral injury, shame, psychological inflexibility, and cognitive fusion predict response to treatment?
3. Do changes in psychological flexibility (AAQ-II) and valued living (VQ) predict PTSD symptom severity posttreatment?
4. Is a group-based ACT intervention an acceptable treatment for veterans diagnosed with PTSD?

CHAPTER II

REVIEW OF THE LITERATURE

Posttraumatic Stress Disorder

PTSD is classified as a trauma and stressor related disorder that is associated with severe stress reactions from exposure to a traumatic event. According to the DSM-5 (APA, 2013) a criterion "A" traumatic event is characterized as an event that threatens or causes death, serious injury, or sexual violence to self or others. Traumatic events include but are not limited to combat, natural disasters, motor-vehicle accidents, sexual assaults, physical assaults, and sudden death of a loved one. Of note, the DSM-5 states that one or more traumatic events (e.g., combat exposure) may be included in the diagnosis of PTSD (APA, 2013). Four symptoms clusters characterize PTSD: re-experiencing or intrusion (e.g., trauma related memories, flashbacks), avoidance of trauma-related internal or external stimuli, alterations in arousal and reactivity (e.g., sleep disturbance, easily startled), and negative changes in mood and cognitions following the traumatic event (APA, 2013). In order to meet criteria for PTSD, symptoms must persist for at least a month after the traumatic event, create significant dysfunction, and cannot be attributable to substance use or another medical condition.

Prevalence

An estimated 50% of women and 60% of men in the U.S. are exposed to a traumatic event during their lifetime (Kessler et al., 1995). Despite the frequency of

trauma exposure, only a subset of the population develops PTSD (APA, 2000). Lifetime prevalence rates for PTSD range from 7.8 to 25% (Green & Kaltman, 2003; Hidalgo & Davidson, 2000; Kessler et al., 1995). A recent study examined PTSD prevalence rates utilizing the DSM-5 criteria. Overall, prevalence rates for PTSD were slightly lower using the DSM-5 criteria compared to the DSM-IV criteria. Unique to this study, individuals with composite event PTSD, or PTSD symptomology attributable to a combination of traumatic events versus PTSD criteria attributable to a single event per se, were included. Of the 2,953 participating in the study, 89.7% reported experiencing one or more criterion "A" traumas, with the average frequency of trauma exposure being three events. Prevalence rates for individuals with composite event PTSD were as follows: 9.4% lifetime, 5.3% in the past 12 months, and 4.2% in 6 months. For individuals with same event PTSD, that is, all symptom criteria matching to the same reported traumatic event, prevalence rates were 8.3% for lifetime, 4.7% in the past 12 months, and 3.8% in the past 6 months (Kilpatrick et al., 2013). In sum, regardless of DSM edition, epidemiology research suggests that the frequency of PTSD is a substantial and growing problem.

According to Gates and colleagues the occurrence of PTSD is higher amongst active military personal and veterans than the civilian population (Gates et al., 2012) PTSD has been identified as a "signature injury" amongst service members returning from deployments to Afghanistan to serve in OEF and Iraq for OIF (Gates et al., 2012). PTSD prevalence rates for recently deployed U.S. military personnel are as high as 14 to 16% (Gates et al., 2012; Tanielian & Jaycox, 2008). A report conducted by the

Department of Veteran Affairs in June, 2009, suggested that nearly 25% of OEF/OIF veterans receiving care at a VA were diagnosed with possible PTSD (Karlin et al., 2010). This percentage approximates to nearly 120,000 veterans, indicating the urgency and demand for providing evidence-based treatments for PTSD to U.S. veterans. These findings are supported by a recent study reporting a 13.5 % weighted prevalence rate of PTSD among more than 20,000 veterans serving between October 2001 and June 2008. In this study, prevalence rates were higher for veterans who were deployed (15.7%) than those who were not deployed (10.9%; Dursa, Reinhard, Barth & Schneiderman, 2014). Additionally, a longitudinal study found that 11% of Vietnam veterans continue to struggle with PTSD (Marmar, Schlenger, Henn-Hasse, 2015).

Moreover, a large body of evidence suggests that PTSD has detrimental effects on the lives of active U.S. military personnel, veterans, and their families. Various negative outcomes include increased anger and hostility (Jakupcak et al., 2007), occupational insecurities and legal trouble (Solomon & Davidson, 1997), physical health problems (Breslau & Davis, 1992; Schnurr & Green, 2004), as well as interpersonal problems (Taft, Watkins, Stafford, Street, & Monson, 2011). In addition, studies have shown that depression and anxiety (Rauch et al., 2010) and suicidal ideation (Jakupcak et al., 2009) are more likely amongst veterans diagnosed with PTSD compared to veterans without PTSD. Furthermore, one study reported that over 400,000 veterans received compensation for PTSD (U.S. Department of Veterans Affairs, 2011). Overall, the psychosocial impact of PTSD is marked and demands further attention. Military related trauma has other notable effects, including moral transgression.

Moral Injury

The construct of *moral injury* has recently gained attention as a psychological wound resulting from military service (Farnsworth et al., 2014). Moral injury has been defined two ways. The founder of the term, Jonathon Shay, defines moral injury as a psychological consequence resulting from a betrayal of what is considered right or moral in a "high stakes" situation by an individual in a position of authority (Shay, 2014). Alternatively, Litz et al. (2009) defined moral injury as a psychological state resulting from an event in which an act or transgression occurs that opposes an individual's expectations about how one should behave (Litz et al., 2009). Both definitions include a violation of one's moral or ethical codes, however, a disparity exists in *who* is the violator. Shay considers the person of power the violator while Litz et al. perceive the violator to be the individual or the "self" (Litz et al., 2009; Shay, 2014). A further distinction is that Shay purported that physiological arousal was a component of moral injury. Regardless of the model applied, moral injury occurs when one's moral expectations are violated and/or invalidated by an event (Nash & Litz, 2013). Moral injury appears to be a novel construct that extends beyond the DSM-5 criteria of PTSD. Specifically, research suggests that moral challenges faced in a war may be an alternative category of traumatic events, which is not captured in the current diagnostic criteria (Currier et al., 2015). Moreover, the events that contribute to moral injury are customary to modern day war.

Morally Injurious Events

War can be instrumental in the development of moral injury (Currier, McCormick, & Drescher, 2015; Litz et al., 2009). Morally injurious experiences include "perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations" (Litz et al., 2009, p.700). At the root of moral injury is the violation of *morals,* "fundamental assumptions about how things should work and how one should behave in the world" (Litz, et al., p. 699). Litz et al. proposed that the nature of wars in Iraq and Afghanistan are "unconventional," including guerilla warfare in an urban environment highlighted by civilian threats, IEDs (improvised explosive devises), unmarked enemies, as well as increased danger for civilians and non-combat troops (Litz et al., 2009). Therefore, the unpredictable nature of modern day war presents veterans with an increasing number of scenarios in which they are forced to battle and possibly transgress their personal moral codes. Such moral conflicts include killing an insurgent appearing as a civilian, witnessing dead bodies, and failing to assist injured women and children (Litz et al., 2009). Ultimately, exposure to moral conflict increases the likelihood of moral violation, resulting in emotions of shame, guilt, failure for self-forgiveness, social problems, struggles with spirituality, and self-ridicule (Drescher et al., 2011). Also, trust becomes a fundamental problem for individuals inflicted with moral injury (Shay, 2014). Importantly, these peritraumatic and posttraumatic emotions have been associated with both combat related moral injury and military related PTSD (Farnsworth et al.,).

Distinction from PTSD

PTSD is considered one of the "diagnostic correlates" of moral injury (Farnsworth et al., 2014, p. 256). However, moral injury is not covered within the DSM-5 diagnostic criteria. To date, the literature distinguishes moral injury from PTSD in that the event related to moral injury *does not* need to be perceived as life threatening. A recent qualitative study aimed to evaluate and further define the construct of moral injury outside of PTSD. In this study, 23 mental-health workers, chaplains, and researchers were interviewed on their perception of an initial definition of moral injury and related components. Overall, results showed that participants agreed that specific morally injurious events occur that result in many psychological, spiritual, and behavioral problems. Unanimously, the interviewees agreed that the construct of moral injury is both necessary and affiliated with the diagnosis of PTSD but is not fully captured in the diagnostic criteria (Drescher et al., 2011). In conclusion, this study indicated the importance of moral injury as a construct and suggested that further measures of moral injury be developed.

The growing literature on moral injury suggests that there are similarities in the development of PTSD and moral injury (Farnsworth et al., 2014). Although moral injury may be a distinct construct, various models of PTSD may contribute to the understanding of moral injury. For example, social cognitive theories of PTSD purport that one's basic assumptions and beliefs about the world and self are violated as a result of a traumatic experience. Within this model, failure to reconcile the event within one's personal beliefs may create guilt, shame, and distorted views of the self and world, all of which are

associated with moral injury (Litz et al., 2009). Moreover, a qualitative analysis of 14 veterans from Iraq and Afghanistan, examined why moral injury may have occurred during deployment. Veterans in the study were more likely to attribute psychological factors (e.g., increased hopelessness, rage) to the development of moral injury. As a result, veterans appeared to have increased self-blame and self-deprecation that may have influenced their development and subsequent recovery from PTSD (Currier, McCormick, & Drescher, 2015). Of note, the DSM-5 has now incorporated negative mood and emotional states in the conceptualization and diagnoses of PTSD. Taken together, research suggests that moral injury and PTSD share many similar cognitive and emotional underpinnings, however, further research is needed.

Interventions for Moral Injury

Presently, no evidence-based treatments exist for moral injury. The etiology of moral injury shares similarities to fear conditioning and cognitive models of PTSD but are not one and the same (Nash & Litz, 2013). The majority of evidence-based treatment models for PTSD are understood through a fear-conditioning paradigm, which may not be the origin of moral injury (Drescher et al., 2011). Litz et al. (2009) highlighted the need for alternative but complementary models for understanding moral injury and traumatic stress. To date there is only one existing model for the treatment of moral injury. Litz et al. presented an eight-step model integrating components from existing PTSD treatment models including (a) emotional processing of memories related to the morally injurious event and (b) exposure to corrective life experiences. The model assumes that at the core of one's moral injury is a deeply held belief that their actions are

unforgivable and guilt and shame are deserved. Therefore, exposure to memories related to the morally injurious event allows for a corrective emotional experience. Currently, this intervention model is being tested as a "modified CBT;" however, no outcomes or conclusions have been published at this time (Litz et al., 2009).

Intense guilt, shame, and anger are central components of moral injury, and avoidance of such emotions contribute to the maintenance of it (Nash & Litz, 2013). In addition, moral injury and avoidant behavior persist due to one's inability to provide self-forgiveness for breaking one's moral expectations. Furthermore, moral injury may result in self-condemnation. Self-condemnation is the criticism or condemnation of the self as a result of engagement in moral wrong doing or violation of one's moral standards (Drescher et al., 2011; Worthington & Langberg, 2012). Taken together, shame, self-condemnation, and an inability to forgive are contributing factors to avoidant behavior associated with moral injury. Thus, targeting avoidance of unwanted internal experiences may be a viable treatment approach to target posttraumatic stress associated with moral injury.

Evidence-Based Practices for PTSD

A substantial number of evidenced-based treatments exist for PTSD. Exposure-based behavioral therapies are often considered the gold standard treatment for anxiety disorders, including PTSD (Norton & Price, 2007; Olatunji, Cisler, & Deacon, 2010). Broadly, treatments under the larger umbrella of Cognitive Behavior Therapy (CBT), including treatments possessing exposure components, have the most empirical support

for the treatment of PTSD (Foa, Gillihan, & Bryant, 2013). According to Foa et al., most cognitive behavioral therapies share two specific aims: (1) to encourage patients to confront "safe" trauma reminders, and (2) to disconfirm dysfunctional beliefs that have resulted from trauma exposure (Foa et al., 2013). One review indicated that Trauma Focused-CBT, which includes components of psycho-education, exposure, and cognitive restructuring, has strong support as an effective treatment for PTSD across trauma groups (e.g., combat veterans, road traffic accident survivors, refugees, sexual assault victims, and terrorism; Harvey, Bryant, & Tarrier, 2003). A notable amount of research supports other evidence-based interventions, including prolonged exposure therapy, cognitive processing therapy, eye-movement desensitization, and group therapy (Ehlers et al., 2010; Ehlers & Clark, 2000).

Prolonged Exposure Therapy (PE) is an exposure-based therapy that consists of two primary components- *in vivo* and imaginal exposure. *In vivo* exposure requires an individual to systematically approach real-life scenarios that they have deemed unsafe. Imaginal exposure requires an individual to revisit the traumatic memory through systematically narrating the traumatic event (Foa & Rothbaum, 2001; Foa et al., 2013). A significant amount of research exists supporting the efficacy of prolonged exposure therapy for the treatment of PTSD (e.g., Foa et al., 2005; Foa, Rothbaum, & Furr, 2003; Hagenaars, van Minnen, & Hoogduin, 2010; Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010). Of note, PE has been found effective in treating veterans who served in the OEF/OIF conflicts (Rauch et al., 2010). Cognitive processing therapy (CPT) is a therapeutic model that incorporates cognitive restructuring as well as exposure

components with the intent of altering cognitive schemas that may be associated with exposure to traumatic experience, including safety, trust, power, esteem, and intimacy (Resick & Schnicke, 1992). Research has shown substantial support for CPT as an efficacious treatment for PTSD (e.g., Resick, Nishith, Weaver, Astin, & Feuer, 2002). Additionally, PE, along with CPT, have been "rolled out" as primary interventions for PTSD, throughout Veterans Affairs health centers across the country (Garcia et al., 2011). Eye movement desensitization and reprocessing (EMDR) requires an individual to perform a series of saccadic eye movements while simultaneously imagining the trauma memory and challenging their negative meaning(s) (Shapiro, 1996). Empirical support exists for EMDR as an effective treatment for PTSD, however, it is not superior to exposure-based treatments and the necessity of eye-movements remains controversial (e.g., Davidson & Parker, 2001; Rothbaum, Astin, & Marsteller, 2005).

Group treatment is a common evidenced-based approach for the treatment of PTSD in health care settings (Foy et al. 2010). A recent meta-analysis examined the efficacy of group-based treatments for PTSD. A total of 16 studies with 1,686 individuals were treated for PTSD within group settings. Results showed that group treatment was efficacious within treatment conditions ($d = 0.71$), and greater effects were seen for those in groups compared to waitlist-control conditions ($d = 0.56$). However, results showed that effect sizes were nonsignificant for group treatment compared to other active conditions ($d = 0.09$). In conclusion, while group treatment is an effective intervention, it is not more effective than individual treatment (Sloan et al., 2013).

Several meta-analyses have assessed the strength of these aforementioned

interventions. Overall, meta-analyses have found similar effects sizes across psychotherapies for PTSD when compared to no-treatment controls or a waitlist/supportive control group (e.g., J. Bisson & Andrew, 2005; J. I. Bisson et al., 2007; Bradley, Greene, Russ, Dutra, & Westen, 2005; Van Etten & Taylor, 1998). Alternatively, to control for treatment variables (e.g., treatment length, outcome measures, disorder severity) recent studies have utilized direct-comparison methods (Benish, Imel, & Wampold, 2008). One meta-analysis using a direct-comparison method found no significant difference between EMDR and exposure-based treatments (Davidson & Parker, 2001). Another meta-analysis aimed to provide an overall effect size for "bona-fide" treatments of PTSD treatments. Bona-fide treatments are defined as treatments that are "meant to be therapeutic" as determined by criteria from Wampold et al. (1997). To be classified as bona-fide a treatment had to be delivered by a trained therapist, tailored to the individual being treated, and meet two of the four criteria: a) provide a reference to an established treatment (e.g., PE) (b) provide a description of the therapy and the theory it was derived from (c) provide a treatment manual or (d) provide a list of the active treatment components. Therefore, studies with supportive therapies, component, and dismantling approaches were excluded. Fifteen studies were included in the meta-analysis and met the following criteria: (a) two or more psychotherapy comparisons, (b) no classification of treatments into categories, and (c) only included bona-fide treatments (e.g., beyond supportive counseling). Benish et al. found that between-group effect sizes for both PTSD and outcome measures were uniformly distributed around zero. As such, the meta-analysis concluded that "bona fide" treatments

for PTSD are equally efficacious (Benish et al., 2008). A critique by Ehlers et al. (2010) dispute these findings, suggesting that the meta-analysis introduced bias in their head-to-head comparisons and failed to signify that treatments are more effective than the natural recovery process. Furthermore, Ehlers et al. argued that over two decades of research suggests that trauma focused cognitive behavioral therapies are the most efficacious treatment for PTSD.

Limitation of Current Treatments

Importantly, while effective treatments exist for PTSD, such as PE and CPT, a percentage of individuals do not respond to these treatments. Dropout rates for CBT vary widely, with a range from 0 to 54% (Schottenbauer et al., 2008). A recent review examined dropout rates across eight psychotherapy approaches for PTSD. Results showed that dropout rates were highest for individuals treated with "full" CBT (28.5%) compared to exposure (23.2%), CPT (23.2%) and integrative therapies, including relaxation and supportive therapy (8.8%; Swift & Greenberg, 2014). In contrast, another meta-analysis compared dropout rates amongst 42 clinical trials for PTSD, including 17 direct-comparisons. Across all studies, the average dropout rate was 18%. Interestingly, within study comparison failed to show a difference in dropout rates amongst trauma-focused therapies. However, trauma-focused therapies resulted in higher dropout rates than present-centered therapy (Imel, Laska, Jakupcak, & Simpson, 2013). A study at a specialized VA PTSD clinic examined dropout rates amongst 117 veterans receiving variants of CBT (i.e., individual CPT or PE, group CPT, or individual or group CPT + PE). Treatment dropout was defined as a veteran discontinuing treatment before they had

reached a predetermined treatment goal (e.g., not having PTSD). Of the 117 veterans, 79 (67.5%) were considered dropouts. Age was a significant predictor in dropout, with younger veterans less likely to complete treatment (Garcia et al., 2011). As Garcia et al. wrote, "Our most effective treatments are only as good as the patient's ability to complete them" (p.1). In conclusion, notably high dropout rates suggest that further research on other viable treatment options is warranted at this time.

Emerging Treatments for PTSD

Additional treatment options for PTSD continue to emerge. A recent study offers a comprehensive review regarding the efficacy of alternative therapies for PTSD. Overall, the review concludes that technology-based interventions, including virtual reality exposure and internet-based treatments, have promising data (Cukor, Spitalnick, Difede, Rizzo, & Rothbaum, 2009; Schottenbauer et al., 2008). Emerging pharmacotherapies aimed at enhancing exposure therapy such as D-cycloserine have limited but favorable data for enhancing extinction learning (Davis, Ressler, Rothbaum, & Richardson, 2006). Imagery-based therapies including imagery rescripting was shown to be effective in augmenting exposure (Arntz, Tiesema, & Kindt, 2007) while imagery rehearsal therapy was shown to be effective in treating nightmares amongst veterans (Lu, Wagner, Van Male, Whitehead, & Boehnlein, 2009). Notably, a new focus has been placed on social and family based therapies such as Cognitive behavioral conjoint therapy (Monson, Schnurr, Stevens & Guthrie, 2004) and Family systems therapy for trauma (Ford et al., 1998). While research is scant in this area, inclusion of family members in the treatment process has a strong theoretical support and warrants future investigation

(Cukor et al., 2009). A recent meta-analysis examined the efficacy of writing therapy, often referred to as narrative therapy, for the treatment of PTSD. Results showed writing therapy to be an efficacious method of treatment compared to a waitlist control for PTS and comorbid depression, however when compared to trauma-focused cognitive behavioral therapy there was no significant difference. However, findings included in this meta-analysis are limited considering that only six studies were included in the analysis (van Emmerik, Reijntjes, & Kamphuis, 2012). Several other studies have examined the function of behavioral approaches in the treatment of PTSD. Together, research suggests that certain behavioral components such as behavioral activation (Jakupcak et al., 2009) and introceptive exposure (Wald & Taylor, 2007) are successful additives to therapy but should not be utilized as standalone treatments. In conclusion, several emerging treatments exist for PTSD, however further research is needed on both the basic processes of change as well as the effectiveness of these interventions (Shay, 2014).

Exposure Therapy and Modern CBT

Basic Science Support

Many anxiety treatments including exposure therapy originated through support from basic science (e.g., Bouton, Mineka, & Barlow, 2001). Basic science suggests that exposure therapy is purported to work through fear extinction. This process can be understood as a translation of Pavlovian fear conditioning processes-the CS (conditioned stimulus) is paired with the U.S. (unconditioned stimulus; Abramowitz, Deacon, & Whiteside, 2012). During exposure therapy, the CS is presented *without* the U.S., often

resulting in a decreased response to the CS. As a result, the CS now has two meanings (a) CS means U.S. (excitatory pathway-original learning) and (b) CS means no U.S. (inhibitory pathway-new learning). Therefore, the original fear memory cannot be erased, but instead new learning may occur. This alternative new learning between the conditioned and unconditioned stimulus is referred to as *inhibitory learning* (Bouton, 1993). In summary, fear learning (acquisition & extinction) has been translated into exposure-based treatments.

For decades, clinicians have relied on fear response during exposure to determine treatment progression and success. Recent conclusions suggest that the level of fear experienced post exposure is both dependent on the strength of the new learning that occurred during exposure and independent of the level of fear displayed during the exposure (Craske et al., 2008; Myers & Davis, 2006). However, many of the aforementioned evidenced-based treatments rely on fear-exhibited during exposure to provide clinical guidance and determine treatment success. Thus, modern approaches to PTSD treatment may be more effective by targeting a different mechanism of change during exposure therapy. Craske et al. proposed an alternative mechanism of change, that is, the toleration of fear or distress during exposure therapy. Research has found that the toleration of fear in the presence of the feared stimulus is important to optimizing inhibitory learning (Craske et al., 2008; Craske & Mystkowski, 2006). This approach of optimizing inhibitory learning suggests that creating "a violation in expectancies," enhances one's ability to realize that a feared stimulus that resembles threat in fact is not threatening (Craske et al., 2008, p. 14). Therefore, as basic science develops, researchers

and clinicians alike, continue to examine which treatments models most effectively target these processes of change.

Experiential Avoidance and PTSD

In line with the concept that tolerance rather than in-session reduction in fear are key factors in the treatment of PTSD, there has been considerable research on the role of experiential avoidance in the development and maintenance of PTSD. Experiential avoidance is a method of actively avoiding or escaping particular private experiences, and is inversely related to overall psychological functioning, such that higher rates of experiential avoidance correlate with poorer psychological functioning (e.g., Hayes, 2004; Walser & Westrup, 2007). Within PTSD, private experiences may include negative emotional states, traumatic memories, negative thoughts about oneself, others, or the world, and/or distressing physiological reactions. Interestingly, experiential avoidance has a paradoxical effect on the development and maintenance of PTSD. On one hand, avoidance may temporarily alleviate distress related to the unwanted private experiences and provide a sense of control (Burrows, 2013). On the other hand, this avoidance or inability to contact the private experience results in a negative reinforcement cycle. Ultimately, life becomes about escaping or avoiding distress resulting in notable reduction in positive and meaningful life activities (Thompson & Waltz, 2010; Walser & Westrup, 2007).

Researchers have shown that experiential avoidance is significantly correlated with posttraumatic symptomology (e.g., Bluett et al., 2014; Plumb, Orsillo, & Luterek,

2004). One study examined 160 women who had experienced a sexual assault in addition to one or more potentially traumatic events. Contrary to predictions, experiential avoidance and general psychiatric symptoms were equivalently associated to posttraumatic stress symptoms. However, a particular form of experiential avoidance, thought suppression was significantly correlated to posttraumatic stress symptoms (Tull, Gratz, Salters, & Roemer, 2004). A group of studies examined the impact of experiential avoidance on individuals who have experienced childhood sexual assault. One study in particular showed that experiential avoidance played a mediating role between childhood sexual assault and distress (Marx & Sloan, 2002). Research has demonstrated that various coping strategies, including negative attitudes and thought suppression are related to post-traumatic symptomology. One study showed that experiential avoidance, determined by negative attitudes towards expression of emotions, was predictive of developing PTSD in motor vehicle survivors (Nightingale & Williams, 2000) while another study showed avoidance strategies being predictive of post-traumatic symptomology amongst Gulf War veterans (Benotsch et al., 2000). Given these findings, experiential avoidance appears to influence ones' psychological functioning after experiencing a trauma and likely an important objective for treatment (Bluett et al., 2014).

As reviewed, treatments for PTSD are not universally effective and dropout rates amongst veterans are particularly alarming (Garcia et al., 2011). Existing PTSD treatments such as PE continue to target fear reduction as a process of change. However, research suggests that alternative processes of change, such as tolerance and acceptance, might actually be more consistent with the basic research on this topic. Avoidance

appears to be a common and predominant theme in the development and maintenance of PTSD as well as moral injury. Therefore, a treatment that promotes acceptance and decreases avoidance may be effective for the treatment of PTSD and moral injury.

A recent paper by Thompson, Luoma, and LeJeune (2013) explored the relationship between Acceptance and commitment therapy (ACT) and the treatment of PTSD. Specifically, the study examined how the principles of ACT both build on traditional exposure processes as well as enhance inhibitory learning in the treatment of PTSD. The ACT model highlights the importance of moving beyond tolerance of painful traumatic memories and the associated internal experiences into *acceptance*. Acceptance is the ability to experience thoughts and feelings as they arise. Thus acceptance creates an experience in which new learning may occur. Notably, this model suggests that exposure is conducted in order to facilitate valued living rather than symptom reduction (Eifert & Forsyth, 2005).

Acceptance and Commitment Therapy

As previously written, experiential avoidance, often results in maintaining or increasing the frequency of the unwanted inner experience, in addition to poor psychological functioning and a lower quality of life. Alternatively, acceptance-based interventions promote willingness to experience thoughts, feelings, and emotions, without changing their form, meaning, or frequency; thereby allowing for engagement in life regardless of the severity of internal experiences. One such therapy, ACT, has growing support as an intervention for anxiety disorders (Arch et al., 2012; Bluett et al., 2014;

Ruiz, 2010). The primary focus is to increase behaviors that are consistent with personal values while allowing for any given internal experience to be present. This therapeutic approach emphasizes the willingness to experience unwanted internal experiences while continuing to behave in a way that is consistent with one's personal values. Therefore, ACT aims to alter the *function* of the thoughts and feelings rather than the *content*. The philosophy and theory of ACT suggest that altering the verbal context in which avoidance behaviors are predominant will lead to behaviors in line with personally identified values (Hayes, 2004). To provide a more complete understanding of this therapeutic approach, a brief overview of the philosophical and theoretical assumptions of this model will be presented.

Philosophy of Science

Functional contextualism, the philosophical underpinnings of ACT, is concerned with the actions or events in the context by which they occur (Hayes, 1993; Hayes, Hayes, & Reese, 1998). Functional contextualism encompasses several key components. One such component indicates that an event must be viewed as a *whole* event including the past and current contexts. A second component emphasizes the pragmatic *truth criterion* of successful working. Successful working is determined by the consistency in which the action is in line with one's values (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Finally, the unified goal of functional contextualism is to *predict* and *influence* such behaviors (Hayes, 2004). Building on this foundation of philosophy of science, ACT is grounded in a behavioral theory of language and cognition (Thompson et al., 2013).

Relational Frame Theory

ACT is rooted in behavior analysis including a "contextualistic theory of cognition" called relational frame theory (RFT; Hayes, 2004) This theory of human language and cognition suggests that humans have the ability to arbitrarily relate events both mutually and in combination and those responses are under contextual control (Hayes, 2004; Hayes et al., 2006). That is, humans have the ability to respond to both internal and external stimuli based on properties that are not directly experienced (Twohig, 2009b). Thus, an individual's relational responding results from a type of learning, called relational learning, in which a transformation of stimulus function may occur (Hayes, 2004). Ultimately, this transformation of stimulus functions results in the function of one stimulus altering the function of another, possibly unrelated in formal ways. This relational framing has several clinical implications including the concept of experiential avoidance. Specifically, RFT allows fear and avoidance responses from one stimulus to transfer to a seemingly unrelated internal or external stimulus through relational framing- often leading to psychological inflexibility. For example, during a patrol a veteran witnessed an explosion in a garbage can on the street corner. Now anything that may be perceived as "hidden," evokes a fear response in the veteran, which results in a large number of stimuli that evoke fear.

Psychological inflexibility is the inability to accept distressing thoughts, feelings, and emotions as they arise, and not engaging in meaningful actions. Conversely, *psychological flexibility* is the ability to contact the present moment by openly accepting internal and external experiences by behaving in a way that is consistent with one's

values (Hayes et al., 2006). ACT targets six functional processes in efforts to broaden an individual's psychological flexibility. Independently, the six core processes are effective targets of treatment that may be applied through experiential exercises and metaphors in order to increase one's psychological flexibility (Thompson et al., 2013). One primary process of ACT, *acceptance,* is the process of fostering an open, willing attitude, to experience one's thoughts, feelings, and emotions without engaging in avoidance (Luoma, Hayes & Walser 2007). *Defusion*, opposed to fusion, is the act of observing one's thoughts as thoughts, rather than interpreting the content as reality (Luoma et al., 2007). Written differently, defusion allows a decrease in the literal impact of language (Twohig, 2012). Contact with the *present moment* is being connected to internal and external experiences as they occur rather than events in the past or the future. Self as context, or the observer-self, is the process of taking a perspective that allows differentiation between evaluations of self and the actual self (Thompson et al., 2013). Personally chosen *values* are fundamental areas of life that provide motivation and meaning to engage in specific actions (Twohig, 2012). Finally, *committed actions* are behaviors that one participates in order to move toward personally identified values (Hayes et al. 2006). Moreover, a recent meta-analysis on laboratory based studies by Levin et al. revealed that components of the ACT model (e.g., acceptance and defusion) increase psychological flexibility and may increase willingness to engage in a distressing task (Levin, Hildebrandt, Lillis, & Hayes, 2012).

Effectiveness of ACT for PTSD

ACT has gained support as an effective treatment for a variety of anxiety disorders (Bluett et al. 2014; Sharp, 2012). While research is limited, an increasing numbers of case studies have shown promising results for ACT as an intervention for PTSD. To date, four case studies, one multiple baseline, one group study and one randomized controlled trial have been conducted utilizing ACT for PTSD.

A preliminary case study conducted by Batten and Hayes (2005) reported the application of ACT for PTSD and comorbid substance abuse in a 19-year old White female. Results showed posttreatment improvements through 12-month follow-up, providing preliminary data for ACT as a treatment for comorbid disorders along with an in depth conceptualization of the application of ACT for PTSD (Batten & Hayes, 2005). A second study presented a case of a 51-year-old Vietnam veteran presenting with posttraumatic stress and depressive symptoms who refused exposure therapy. The veteran willingly participated in an ACT protocol and actively engaged in committed actions associated with his personal values (Orsillo & Batten, 2005). A third case study presented the treatment of a 43-year-old White female with a comorbid diagnosis of PTSD and depression. Two months prior the individual failed to respond to 20 sessions of traditional CBT for trauma from a history of physical and verbal abuse. In this case study she received 21 sessions of ACT. Results showed clinically significant decreases in her PTSD, depression, and anxiety symptoms. Notably, her scores on the PLC-C, a measure of PTSD symptoms, decreased from a 67 at time of intake to a 28 at posttreatment, close to one standard deviation below the clinical cutoff for PTSD. Additionally, scores on the

BDI-II dropped from a 34 pretreatment to a 4 posttreatment, as well as decreases on the BAI, reducing from a 38 to 7 by posttreatment. Furthermore, the individual displayed notable decrease on a measure of psychological flexibility, with AAQ scores decreasing by 43% from pre- to posttreatment. Interestingly, scores on the PTCI, a measure of trauma-related thoughts and beliefs, only showed a decrease from sessions 16-21, a point in treatment in which PTSD symptoms, measured by the PLC-C had decreased by 50% (Twohig, 2009a).

A recent case study examined the effectiveness of 18, 50-minute, ACT treatment sessions for an 18-year old female with sexual assault trauma (Burrows, 2013). The early phases of treatment focused on creating present moment awareness, decreased avoidance of sleeping, as well as defusion from her thoughts. The middle stages of treatment targeted avoidance and conceptualization of the self. In the final stages of treatment, the client continued to work on defusion and acceptance of anxiety, creating a personal metaphor as anxiety being "a dragon that she had to create space for." Results from this study showed improvements on the primary measure of experiential avoidance, AAQ-II, 36 pretreatment, 26 at the final treatment session, and 26 at an 8- month follow-up. Thought suppression measured by the White Bear Suppression Inventory decreased from 73 at pretreatment to 57 at posttreatment, and to 48 at 8-month follow-up. The individual displayed significant reductions in trauma symptoms as measured by the Trauma Symptom Checklist with a score of 70 at pretreatment to a score of 45 at the final session and 35 at an 8-month follow-up. Notably the study showed improvements on the VLQ (valued living questionnaire). Finally, one study has been conducted utilizing ACT for

adolescents with posttraumatic stress (PTS). A multiple-base line design was utilized to treat seven adolescents with PTSD (four in the community and three at a residential treatment setting). Results showed preliminary support for ACT with a 73.7% mean reduction in self-reported PTSD symptoms and nearly 60% mean reduction in clinician rated measures of PTSD (Woidneck, Morrison & Twohig, 2014).

To our knowledge, ACT has been applied once in a group treatment setting for veterans (Williams, 2007) and larger unpublished randomized-control trial treating veterans for trauma related stress. However, to date no data is available regarding the finding of these studies.

In summary, PTSD is a paramount issue amongst U.S. active service members and veterans. Additionally, moral injurious events may be directly related to the development and maintenance of extreme psychological distress, such as PTSD, in U.S. military personal and veterans. While evidence-based treatments for PTSD exist, they are not universally effective. Additionally, purported mechanisms of change from these existing treatment models have shifted with recent research. Specifically, a model of toleration or acceptance may be a more viable approach for treating PTSD than fear reduction. Thus, acceptance and mindfulness-based interventions have promising implications as an alternative or second line intervention for PTSD amongst veterans. For these reasons, the investigation of ACT as a next-step intervention for veterans with chronic PTSD is warranted.

CHAPTER III

METHODS

Design

This study implemented an 8-week group intervention to examine the effectiveness of ACT for Veterans diagnosed and previously treated for PTSD. A group intervention was advantageous considering the continual need for mental health services for veterans with PTSD (e.g., Sripada et al., 2016). Enrollment for this study was continuous; however, a closed-group design was utilized (i.e., veterans were only allowed to join a group at the beginning of an 8-week group cycle). In total four, 8-week groups were conducted between June 2015 and May 2016, in the PTSD Clinic at the George E. Wahlen Department of Veterans Affairs Medical Center in Salt Lake City, Utah.

Participants were referred by their provider, but ultimately self-selected to join the group. The intended sample size for this study was 40 participants total, with a minimum of 5 veterans per group. This number was determined by an initial power analysis conducted through G*Power software with an alpha level of .05 and a power of .80. The preliminary power-analysis, using an effect size of .25, specified a sample of 28. An actual sample of 33 participants was enrolled.

Participants

Approximately 49 veterans were referred to participate in the group. Of those referred, a total of 33 veterans enrolled in the study. Several veterans referred to the

group were unable to participate due to work schedules, the time and day of the group, and transportation. Many requested to be contacted for the next group. Three of the referred veterans indicated that they were uninterested in participation.

To be eligible to participate in the group, veterans had to meet the following criteria: (1) the veteran must have been over the age of 18, (2) the veteran must have been diagnosed with PTSD or subclinical PTSD, and (3) the veteran must have *enrolled* and *completed* an evidenced-based treatment for PTSD. An initial diagnosis for PTSD or subclinical PTSD was determined through an official in-person psycho-diagnostic assessment conducted by a member of the PTSD Specialty Clinic at the Salt Lake City Veterans Affairs Medical Center. For this study, diagnostic status was reassessed and determined by the PCL-5. Additionally, veterans must have completed an evidenced-based treatment for PTSD prior to participation in the group. Evidenced-based treatments for PTSD include prolonged exposure therapy, cognitive processing therapy, and eye movement desensitization and reprocessing. Participants were excluded if they (1) were currently enrolled in an EBT group treatment, (2) were experiencing psychosis, or (3) experienced a cognitive disability that would inhibit their ability to participate in the study. The study was approved by the Institutional Review Boards at the University of Utah and Utah State University as well as the SLC Veteran Affairs Office of Research.

Procedure

Recruitment

Veterans were recruited through referrals from mental health providers at the VA

(see Appendix A). In order to maximize referrals, announcements regarding the group were made during weekly team meetings for therapists on the PTSD team. In addition, flyers were posted throughout the VA campus and the community. All referrals by mental health providers were added to the ongoing recruitment list. Referred veterans were contacted by telephone one month prior to a projected group start date. Study personal, invited veterans to participate in the group, provided information regarding the goals and therapeutic approach of the group, and answered any questions or concerns posed by the potential participants. Veterans uninterested in the group were offered referrals and those unable to attend were rolled over to the next group's referral list.

Veterans who were interested in the group were invited to attend the first session. All groups were held in a group room in Building 16 on the George E. Wahlen Department of Veterans Affairs Medical Center campus. The group was conducted by Ellen Bluett, a graduate student at Utah State University, Dr. Brandon Yabko, Dr. James, Asbrand, and Dr. Sara Owen - staff psychologists at the Salt Lake City, Veterans Affairs.

At session one, individuals were provided information regarding the option to participate in the research study. A verbal announcement was made regarding the purpose of the research. All interested veterans were provided an informed consent cover letter- which outlined the details of the study, including risk and benefits of participation, confidentiality, and data collection. Prior to data collection, all remaining questions were answered and study personal clearly stated that veterans could participate in the group *without* participating in the research study. All veterans who attended the first session agreed to research participation.

Data Collection and Storage

Once consented, veterans were asked to complete a pretreatment assessment battery, which included a well-established measure of PTSD, overall functioning, distress, and background information (see Measures section). To ensure confidentiality, each veteran was provided a unique participant ID number, which was used throughout the course of the research study. All identifying information for the veteran was kept separate from the study data.

Assessment measures were provided in paper and pencil format (Appendix B). Assessment procedures are outlined in Table 1. To determine the effectiveness of the group intervention, data was collected at three time-points including pretreatment (session 1), posttreatment (session 8), and follow-up (1-month). Pretreatment assessments were collected prior to the start of session one and posttreatment assessment measures were collected at the end of session eight. In addition, due to time constraints and an awareness of participate burden, a comprehensive background information packet was administered at the end of session 1. Veterans were asked to complete and return the packet at the next session. One month after the final treatment session, veterans were sent a follow-up questionnaire packet in the mail, along with a pre-addressed, pre-paid envelope. Veterans were asked to complete the follow-up questionnaire packet and return it to the VA. To assess for processes of change, participants were asked to complete two measures (AAQ-II, VQ) at the end of session three and session six. Finally, treatment integrity measures were administered at the end of each session in efforts to assess for treatment adherence by study personal (Appendix B).

Table 1

Assessment Timeline

Week 1	Week 3	Week 6	Week 8	Week 12
Pretreatment	Acceptance and Action Questionnaire-II , Valuing Questionnaire	Acceptance and Action Questionnaire-II , Valuing Questionnaire	Posttreatment	Follow-Up

Treatment

The treatment administered was an adaptation of a pre-existing ACT manual developed for adult individuals with PTSD (Walser & Westrup, 2007). The original protocol was modified to best fit a group format for veterans. Because the focus of this group was not on trauma processing, the trauma-processing components were excluded from this treatment. Treatment consisted of 8-weekly, 2-hour sessions of group therapy, which followed the ACT protocol. The aims of the treatment protocol included (1) increasing psychological flexibility, (2) decreasing experiential avoidance, and (3) increasing behaviors that were consistent with self-identified values. The full treatment manual used for this study can be found in Appendix D.

Table 2 includes a brief overview of the treatment components and exercise covered at each treatment session. After session one, each session followed a similar format. The sessions began with a mindfulness exercise and check-ins regarding behavioral commitments. The majority of each session was spent introducing a treatment component with accompanying metaphors/experiential activities. Each session ended with each veteran setting a new behavioral commitment for the week.

Table 2

ACT for Posttraumatic Stress

Session	Treatment components	Exercises/content
1	Informed consent	
	Confidentiality and group rules	Rules/guidelines introduced to help participants feel safe and comfortable in the group.
	Vitality, values	Focus of treatment is not on symptom reduction or trauma processing, instead focus on doing what matters. ACT is a radically different approach than CPT, PE, EMDR. • *Clipboard Metaphor* Goal of therapy: Triflex model of *Vitality*: doing what matters, being present, and willingness.
2	Mindfulness/present moment	Breathing meditation
	Creative hopelessness	Explored past attempts to control, alter, change certain PTSD symptoms; Examined cost and effectiveness of trying to control, alter, change. PTS symptoms. • *Creative Hopelessness*
	Behavioral commitment	Set weekly goal linked to a valued domain
3	Mindfulness & check-in	Progressive Muscle Relaxation
	Control as the problem/ willingness	Reviewed the paradoxical effect of trying to control thoughts feelings emotions. • *Man in the Hole* Discussed why humans try to control thoughts, feelings, emotions Introduced alternative to control. • *Tug of War*
	Behavioral commitment	Set weekly goal linked to a valued domain
4	Mindfulness & check-in	*Welcome Anxiety My Old Friend*
	Willingness	Introduced the concept of willingness- the opposite of control/avoidance- *Finger-trap, Annoying Uncle Bob, Perfect anxiety detector*
	Behavioral commitment	Set weekly goal linked to a valued domain
5	Mindfulness & check-in	*Leaves on a stream*
	Defusion	Discussed fusion vs. defusion; Discussion on our "programming" and not taking our thoughts literally or as "Truth" • *2 computers, Milk, Milk, Milk*
	Behavioral commitment	Set weekly goal linked to a valued domain
6	Mindfulness & check-in	*Take your mind for a walk*
	Defusion	Reviewed handouts from the "Happiness Trap" in order to increase cognitive defusion, words and thoughts are just words and thoughts.
	Behavioral commitment	Set weekly goal linked to a valued domain

(*table continues*)

Session	Treatment components	Exercises/content
7	Mindfulness & check-in	Self-compassion exercise
	Self-as-context	Introduced the concept of the observer self and the concept that *you* are not your thoughts. • *Chessboard Metaphor*
		Set weekly goal linked to a valued domain
8	Mindfulness & check-in	
	Acceptance, values	Reviewed concepts that you can move towards your values with passengers on your bus (thoughts, feelings, emotions) • *Passengers on a Bus*
	Maintenance	*Bill of Rights*
	Post-assessment	

Note. Italicized items are metaphors or exercises published in Walser & Westrup (2007).

Measures

Diagnostic Measures

Background/Demographics. The background information form collected baseline demographics about the veteran including sex, age, marital status, educational history, medication, previous treatment, and basic military characteristics (e.g., era, branch).

Outcome Measures

PTSD Checklist (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers, Litz, Herman, Huska, & Keane, 1993). The PTSD Checklist (PCL-5) is a self-report measure that is intended to screen for PTSD. Items are reported on a 4-point Likert scale 0 (*not at all*) to 4 (*extremely bothered*). The PLC-5 measure is used during clinical assessment to evaluate the validity of symptoms endorsed via self-report. Items rated a 2 or above are considered significant symptoms and considered meeting diagnostic criteria. The cutoff method indicates that a score of 38 or above on the PCL-5 meets diagnostic criteria for a PTSD diagnosis. Cronbach's alpha for this study was $\alpha = .92$.

Patient-Health Questionnaire (Beck, Steer, & Brown, 1996). The Patient Health Questionnaire (PHQ-9) is a commonly used brief self-report measure assessing for depression. The measure specifically assesses for depressive symptoms that are derived from the diagnostic criteria for Major Depressive Disorder. The 9-item measure is scored on a 4- point Likert scale assessing frequency of symptoms ranging from 0 (*not at all*) to 3 (*nearly every day*) Scores range from 0 to 27 with higher scores signifying greater depression. Symptom severity cut-off scores have been established into the following categories: 0-4 (*no depression*), 5-9 (*mild depression*), 10-14 (*moderate depression*), 15-19 (*moderately severe depression*) and scores from 20-27 (*severe depression*). The measure has been found to have good internal consistency (α = 0.86-0.89) and excellent test-retest reliability (*r* =.81-.96; Löwe, Unützer, Callahan, Perkins, & Kroenke, 2004; Sripada et al., 2016). Cronbach's alpha for this study was α = .88.

World Health Organization Well-Being Index (WHO-5; Beck et al., 1996). The WHO-5 is a self-report measure assessing well-being over the past two weeks. The 5-item measure is scored on a 6-point Likert scale ranging from 0 (*at no time*) to 4 (*all of the time*). Scores range from 0 to 25 with higher scores signifying greater well-being. A percent may be calculated by multiplying the total score by 4—a percentage of 0 equals the worst possible well-being and a percentage of 100 equals the best possible well-being. The measure has been found to have good internal consistency (α = .84; Bech, Olsen, Kjoller, & Rasmussen, 2003). Cronbach's alpha for this study was α = .84.

Internalized Shame Scale (ISS; Cook, 1996). The ISS is a 24-item self-report assessment that measures internalized shame, an emotion of negative self-evaluation, is

rated on a 5-point Likert scale ranging from 0 (*never*) to 4 (*almost always*) (del Rosario & White, 2006). An additional 6-items assessing self-esteem are often included in this measure. The measure has shown to have good internal consistency ranging from a clinical sample (α = .87 to α = .90; Rybak & Brown, 1996) and good test-retest reliability, (*r* = .81; del Rosario & White, 2006). Cronbach's alpha for this study was α = .96.

Quality of Life Scale (Burckhardt, Woods, Schultz, & Ziebarth, 1989). The Quality of Life Scale is a measure that determines overall life satisfaction. This 16-item questionnaire requires an individual to rate areas of satisfaction (e.g., close friends) on a 7-point Likert scale, 1 (*terrible*) to 7 (*delighted*). Total scores indicate current quality of life with higher scores being associated with better quality of life. This measure has shown both good internal consistency (α = .89 and α =.92) and good test-retest reliability (*r* =.78-.84; Burckhardt et al., 1989). Cronbach's alpha for this study was α = .92.

Moral Injury Events Scale (MIES; Nash et al., 2013). The MIES is a measure of the number of exposures to events perceived to violate moral beliefs or betrayal by oneself or another person. This 9-item measure is scored on a 6-point Likert scale, 1 (*strongly agree*) to 6 (*strongly disagree*). Higher scores indicate a greater number of morally injurious events experienced. A preliminary psychometric validation study examined responses on the MIES 1 week and 3 months post deployments in a sample of 533 Marines. Test-retest reliability was not found to be statistically significant. Results showed excellent internal consistency (α = .90). Importantly the MIES showed discriminant validity (*r* =.08) from the CES (a measure of combat exposure), thus

confirming that morally injurious events may occur independent from combat exposure. As predicted the MIES was positively correlated with the BDI-II (r = .40) and the PTSD checklist (r = .28). Cronbach's alpha for this study was α = .83.

Valuing Questionnaire (VQ; Smout, Davies, Burns & Christie, 2014). The VQ is a self-report measure assessing values-driven behaviors over the past week. This 10-item measure is scores on a 7-point Likert scale and consists of two factors: (a) progress and (b) obstruction. The *progress* subscale measures to what extent an individual engaged in behaviors that are consistent with personal values over the past week. The *obstructed* subscale measures to what extent cognitions and emotions prohibited values consistent behavior over the past week. Both the progress and obstructed subscales have shown good internal consistency (0.86) and (0.83), respectively. Cronbach's alpha for this study was α = .77 for progress and α = .72 for the obstructed subscale.

Process of Change Measures

The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011). The AAQ-II is a seven-item self-report measure that assesses experiential avoidance and psychological flexibility. This 7-item Likert scale, 1(*never true*) to 7 (*always true*). It is the only existing measure that directly measures experiential avoidance. Higher scores indicate greater psychological inflexibility. While no established cutoff exists, total scores between 24-28 suggest greater psychological flexibility and less experiential avoidance. The AAQ-II has shown good test-retest reliability (r = .81) as well as good internal consistency (α = .78 to 87). Cronbach's alpha for this study was α = .94.

Believability of Anxious Feelings and Thoughts (BAFT; Herzberg et al., 2012).

The BAFT is a 16-item self-report measure of cognitive fusion for anxious thoughts, feelings, and bodily responses. The BAFT has shown good internal consistency amongst an undergraduate sample (α = .90) and a highly anxious sample (α = .91). Additionally, the measure has good test-retest reliability over a 12-week period (*r* = .77). Cronbach's alpha for this study was α = .95 for the total scale.

Treatment Acceptability

Treatment Evaluation Inventory Short-Form (TEI-SF; Kelley, Heffer, Gresham, & Elliott, 1989). The TEI-SF is a 7–item self-report questionnaire assessing treatment acceptability. The original TEI-SF was a 9-item measure; however, two items have been excluded as they do not apply to the population within this study. This questionnaire is measured on a 5-point Likert scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). Scores are totaled and those above a 21 indicate a greater amount of treatment acceptability. The original TEI-SF has shown good internal consistency (α = .85).

Treatment Integrity/Adherence/Fidelity

The Veterans Affairs follows government security and confidentiality procedures, therefore video and audio recording of sessions was not possible for this study. To determine treatment adherence, a checklist was administered at the end of each session to assess whether each treatment objective was covered in session. Veterans were required to circle "yes," "no," or "not sure" to indicate whether each treatment objective was covered during that session. Total scores and percentages were calculated for each treatment session, across the four treatment groups.

While treatment adherence options were limited, treatment checklists were administered at the end of each session. Results showed that according to veterans across groups: 93.75% of the proposed material was covered at session 1, 95.65% at session 2, 95.5% at session 3, 90% at session 4, 97% at session 5, 95% at session 6, 100% at session 7, and 97% at session 8. Overall, treatment adherence ratings were above 90% across all groups and all sessions.

CHAPTER IV

RESULTS

Data Analytic Strategy

First, the participant flow was prepared. Second, independent sample *t* test and chi-square analyses were conducted to determine equivalence between treatment completers and non-completers on pretreatment variables including demographics, military specific demographics, and primary outcome variables. Third, to assess response to treatment - change scores were calculated on the PCL-5 from pretreatment to posttreatment. Fourth, to assess change on primary outcomes and secondary outcomes over time, a series of univariate analyses of variance (ANOVAs) were conducted. Fifth, correlations were calculated between pretreatment primary and secondary variables to assess associations between these variables. Sixth, to examine whether pretreatment symptoms predicted change on PTSD symptoms—simple logistic regressions were performed. Seventh, bivariate correlations were conducted to examine the relationship between process of change measures (pretreatment to mid-treatment) and posttreatment PTSD symptom severity. The analyses for this study were performed utilizing SPPS Version 23.0 and MPlus Version 7.0. Visual graphs were prepared utilizing R statistical package.

Missing Data

The dropout rate amongst group participants (42%) was on par with the national average for PTSD treatments. Dropout rates for PTSD treatment—without a specific

trauma focused component—ranged between 0-48% (Imel et al., 2013) and between 12-39% (Steenkamp & Litz, 2013). A meta-analysis estimated the average dropout from individual treatment for PTSD to be 18%, with group therapy increasing the dropout rate by 12% (Imel et al., 2013). While other studies suggest that attrition rates are lower for trauma-focused groups compared to individual therapy (Barrera, Mott, Hofstein, & Teng, 2013).

Because of the large amount of dropout from pretreatment to posttreatment to follow-up, missing data were handled through multiple imputation in Mplus (Version 7.0; Muthén & Muthén, 2012). The Mplus statistical package can produce multiple imputations of missing data through Bayesian analysis -which results in multiple data sets for analysis (Muthén & Muthén, 2012). Each imputed data set has a unique set of replacement values for missing data. For this study, five imputed data sets were created with 10,000 iterations. Following imputation, the data was visually scanned for negative values, missingness, and values outside the range of the measure, none of which were detected. Total scores from each imputed data file were summed and averaged across the five models. The mean obtained was used in subsequent analyses. It is important to note that while multiple imputation is a viable statistical approach for missing data, precaution should be taken in interpreting the data, as there was a small sample size and nearly 40% of the study data was missing at posttreatment.

Overall missing data across each study variable was low (<5%). In the rare occurrence of missing data on an item of a study variable- those measures with less than 10% of the items missing, a mean score and total score was computed for that measure

using data points that were present.

Test of Normality and Outliers

Tests of normality were conducted on all study variables. Of the outliers detected, all were associated with one participant. This participant reported experiencing a significant amount of depression, during the course of treatment, and reported elevated scores compared to the rest of the sample. Due to the exploratory nature of this study this veteran's data was *included* in the analyses.

Participant Flow

Approximately 49 individuals were referred to the study. Initially 33 attended session one and completed the pretreatment assessment. At session two, 30 individuals remained in treatment. Nineteen individuals completed the posttreatment assessment. Of note, a majority of the sample completed more than half of the treatment with 24 individuals completing session 5. Table 3 displays the number of participants remaining in the study at each session. Finally, 12 individuals completed 1-month follow-up questionnaires. Figure 1 displays the flow of participants across the course of the 12-week study.

Table 3

Number of Participants Remaining in Treatment by Session

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7	Session 8
Participants	33	30	27	25	24	23	20	19

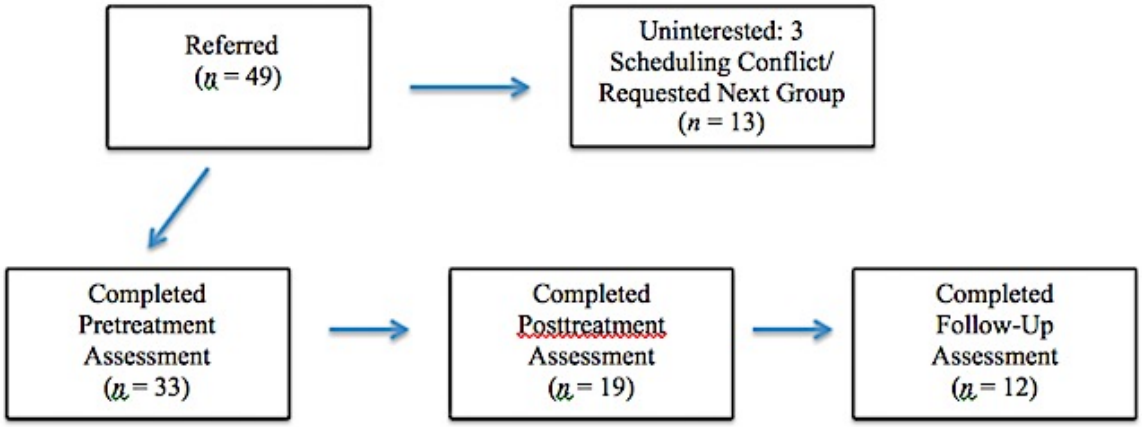

Figure 1. Participant flow.

Participant Characteristics

A summary of participant characteristics for the total sample is provided in Table 4. Of the 33 participants in this study a majority were male 87.9% (*n* = 29). The mean age of the sample was 49.6 (16.31) with ages ranging between 24 and 70 years old. A majority of participants identified as White 84.8% (*n* = 28). A majority of the sample was married 72.7% (*n* = 24). Furthermore, a majority of the sample was educated with some college 30.3% (*n* =10), an associate's degree 27.3% (*n* = 9) or a bachelor's degree, 21.2% (*n* = 7).

Military Characteristics

A summary of participant's military characteristics is presented in Table 5. Of the thirty-three participants enrolled in the study 51.5% were OEF/OIF veterans (*n* = 17) 36.4% were Vietnam veterans (*n* = 12), 6.1% were Desert Storm veterans (*n* = 2), and 6.1% served in more than one era of war (*n* = 2). Veterans varied in their military branch; 45.5% were in the Army (*n* = 15), 21.2% were in the Marines (*n* = 7), 9.1% were in the

Air Force (*n* = 3), 9.1% were in the Army Reserves (*n* = 3), 6.1 % were in the Navy (*n* = 2), 6.1% were in the Army National Guard (*n* = 2) and 3.0% were in the Air Force Reserves (*n* =1). The number of years in service also varied, with a majority of veterans serving between one and 5 years (42.4%; *n* = 14), 36.4% serving between 6 and 10 years (*n* = 12), 6.1% serving between 11 and 15 years (*n* = 2) and 15.2% serving 21 years or more in service (*n* = 5). Of the veterans enrolled in the study, a majority served one deployment 60.6% (*n* = 20), 8% served two deployments (*n* = 8), while 15.2% served three or more deployments (*n* = 5). All but three individuals (9.1%) were service connected, which indicated that they received some financial compensation for disability from the Veterans Affairs Administration.

PTSD Diagnostic Status and PTSD Treatment Summary

The PCL-5 serves a variety of purposes including monitoring symptom change over the course of treatment, screening individuals for PTSD, and making preliminary diagnoses of PTSD. To determine diagnostic status, the guidelines for the PCL-5 were followed. That is, an item rated a "2" or greater was considered an endorsed symptom. To meet criteria for a provisional PTSD diagnosis individuals must have endorsed: one cluster B item (items 1-5), one cluster C item (items 6-7), two cluster D items (items 8-14), and two cluster E items (15-20) on the PCL-5 self-report measure. While all of the veterans enrolled in the study had received a prior diagnosis of PTSD, 78.8% (*n* = 26) met criteria at session one, while the other 21.2% (*n* = 7) met criteria for subclinical PTSD. All veterans enrolled in the study had enrolled and completed an evidenced-based

treatment for PTSD, 60.6% (n = 20) completed CPT, 36.4% (n = 12) completed PET, and only one veteran completed EMDRT.

Completer Versus Dropout Differences

Summary of Demographic by Completer Status

To examine differences in demographic characteristics between treatment completers and noncompleters, independent sample t tests and chi-squares were conducted. Results are shown in Table 4. As can be seen, there appeared to be no statistical difference in age, gender, race and ethnicity, marital status, education, employment, or religion between completers and noncompleters. Therefore, to our knowledge, there is no evidence of treatment dropout based on these variables. Last, no adjustments to the data were made.

Summary of Military Characteristics by Completer Status

To examine differences in military demographic characteristics between treatment completers and non-completers, independent sample T-tests and chi-squares were conducted. The results are presented in Table 5. Again, there appeared to be no statistical difference in PTSD diagnostic status, era, number of deployments, number of years in service, or type of PTSD treatment previously received. From these analyses, there no evidence suggests that treatment dropout was related to these variables, therefore no adjustments to the data were made.

Table 4

Summary of Demographic Statistics by Completer Status

	Completed (n = 19)				Dropout (n = 14)				Total (n = 33)					
Characteristic	*n*	%	*M*	*SD*	*n*	%	*M*	*SD*	*n*	%	*M*	*SD*	χ^2 (*df*) or *t* (*df*)	*p*
Gender													.57(1)	.62
Male	16	84.2			13	92.9			29	87.9				
Female	3	15.8			1	7.1			4	12.1				
Age (years)			53.26	15.55			45.5	16.31			49.6	16.31	-1.4 (31)	.72
Education													4.7 (5)	.45
High School/GED	4	21.0			1	7.1			5	15.2				
Some College	4	21.0			6	42.9			10	30.3				
Associates	6	31.6			3	21.4			9	27.3				
Bachelors	3	15.8			4	28.6			7	21.2				
Some Graduate	1	5.3			0	0			1	3.0				
M.A./M.S.	1	5.3			0	0			1	3.0				
Marital Status													2.30 (3)	.46
Single	2	10.5			2	14.3			4	12.1				
Married	14	73.7			10	71.4			24	72.7				
Divorced	2	10.5			0	0			2	6.1				
Separated	1	5.3			2	14.3			3	9.1				

(*table continues*)

	Completed (n = 19)				Dropout (n = 14)				Total (n = 33)					
Characteristic	*n*	%	*M*	*SD*	*n*	%	*M*	*SD*	*n*	%	*M*	*SD*	χ^2 (*df*) or *t* (*df*)	*p*
Employment													1.68 (4)	.80
Unemployed	4	21.1			3	21.4			7	21.2				.
Part Time	1	5.3			1	7.1			2	6.1				
Full Time	4	21.1			5	35.7			9	27.3				
Disability	4	21.1			3	21.4			7	21.2				
Retired	6	31.6			2	14.3			8	24.2				
Race/ethnicity														
Black	1	5.3			0	0.0			1	3.0			1.76 (3)	.62
White	15	78.9			13	92.9			28	84.8				
Hispanic	2	10.5			1	7.1			3	9.1				
Pacific Islander	1	5.3			0	0.0			1	3.0				
Religion													5.9 (3)	.90
LDS	6	31.6			4	21.4			9	27.3				
Catholic	2	10.5			2	14.3			4	12.1				
Protestant/Christian	4	21.1			4	28.6			8	24.2				
Not Specified	7	36.8			5	35.7			12	36.4				

Table 5

Summary of Military Statistics by Completers versus Noncompleters

	Completed (n = 19)		Dropout (n = 14)		Total (n = 33)			
Characteristic	*n*	%	*n*	%	*n*	%	χ^2 (df) or *t (df)*	*p*
Era							2.70(4)	.61
Desert Storm	1	5.3	1	7.1	2	6.1		
Desert Storm & OEF/OIF	1	5.3	0	0.0	1	3.0		
OEF/OIF	8	42.1	9	64.3	17	51.5		
Vietnam	8	42.1	4	28.6	12	36.4		
Vietnam & OEF/OIF	1	5.3	0	0.0	1	3.0		
Deployments							.28(3)	.96
One	11	57.9	9	64.4	20	60.6		
Two	5	26.3	3	21.4	8	24.2		
Three	2	10.5	1	7.1	3	9.1		
Four	1	5.3	1	7.1	2	6.1		
Years in service							2.60(3)	.46
1-5	9	47.4	5	35.7	14	42.4		.
6-10	5	26.3	7	50.0	12	36.4		
11-15	1	5.3	1	7.1	2	6.0		
16-20	0	0.0	0	0.0	0	0.0		
$\geq$ 21	4	21.0	1	7.1	5	15.2		
PTSD Treatment							1.06(2)	.59
Cognitive processing therapy	12	63.2	8	57.1	20	60.6		
Prolonged exposure therapy	6	31.6	6	42.9	12	36.4		
Eye movement desensitization and reprocessing	1	5.3	0	0.0	1	3.0		

Note. OEF/OIF = Operation Enduring Freedom, Operation Iraqi Freedom.

Primary and Secondary Variables

The primary outcomes of interest for this study included: PTSD symptoms (measured by the PCL-5), quality of life (measured by the QOLS), and valued living (measured by the VQ). The secondary outcomes of interest for this study included depression (measured by the PHQ-9), shame (measured by the ISS), and moral injury

(measured by MIES). See Appendix C for visual representation of data Last, processes of change measures for this study included cognitive defusion (measured by the BAFT) and psychological flexibility (measured by the AAQ-II).

Summary of Outcome Variables by Completer Status

To examine differences in primary outcomes at baseline between treatment completers and noncompleters, a series of independent samples *t* tests were conducted on all primary, secondary, and process measures at pretreatment. Table 6 provides the means, standard deviation, and *p* values for pretreatment measures for completers, noncompleters and the total sample. Results showed that completers and noncompleters

Table 6

Summary of Outcomes by Completers Versus Noncompleters

	Completers (*n* = 19)		Dropout (*n* = 14)		Total (*n* = 33)				
Variable	Mean	*SD*	Mean	*SD*	Mean	*SD*	*t*	*df*	*p*
PCL-5	45.69	16.20	44.23	14.45	45.10	15.26	-2.68	31	.79
PTSD dx							-.025	31	.98
PHQ-9	14.84	5.92	14.29	7.40	14.61	6.50	-2.40	31	.81
WHO-5	9.32	4.95	9.93	3.50	9.60	4.34	.39	31	.70
ISS	49.05	20.84	54.64	23.50	51.43	21.82	.72	31	.48
QOLS	61.80	16.24	62.21	20.70	62.00	17.94	1.57	31	.10
AAQ-II	32.05	10.20	31.86	10.62	31.97	10.21	-.05	31	.96
VQ progress	15.79	5.63	15.21	5.90	15.67	5.74	-.13	31	90
VQ obstruction	16.90	5.42	18.00	5.49	17.36	5.40	0.58	31	.57
BAFT somatic concerns	19.10	7.85	20.8i6	6.6	19.84	7.28	0.68	31	.50
BAFT negative evaluation	26.70	9.55	31.14	9.13	28.58	9.50	1.35	31	.19
BAFT emotion regulation	24.60	7.65	27.30	6.50	25.73	7.20	1.07	31	.29
Moral injury transgressions	17.86	9.31	16.40	6.71	17.23	8.22	-5.04	31	.62
Moral injury betrayal	7.16	3.65	9.00	2.80	7.94	3.40	1.57	31	.13

did not significantly differ on primary and secondary variables of interest at pretreatment. As before, no adjustments were made to the data.

Statistical Approach on Main Analysis

To assess the effectiveness of an ACT intervention for veterans with PTSD/ subclinical PTSD, individual rates of positive response were calculated using three methods. Response rates were the percentage of veterans who could be classified as "responders" to treatment. Following guidelines presented by Loerinc et al. (2015) multiple modalities are best when determining clinically significant change (Loerinc et al., 2015). First, the degree of change from baseline was calculated by simply taking the difference between pre- and posttreatment PCL-5 scores. Following recommendations by the National Center for PTSD, to determine a clinical change on the PCL for the DSM-IV, a 5-point change was used as a minimum score to determine "response to treatment" and a 10-point change was used to determine if change was "clinically meaningful." While change scores have yet to be determined for the PCL-5, research suggests that they will be in the similar range to the PCL for DSM-IV (e.g., Blevins, Weathers, Davis, Witte, & Domino, 2015; Bovin et al. 2015; Wortmann et al., 2016).

Next, the reliable change index (RCI; Jacobson & Truax, 1991) was calculated for the PCL-5. The RCI is a more stringent method for determining response to treatment. The RCI aims to calculate the standard error of the difference between pretreatment and posttreatment scores, identifying the spread of the distribution of change scores if no real change had occurred. Thus, an RCI offers a measurement of change in standardized units, such that an RCI >1.96 would reflect statistically significant change posttreatment.

Third, we utilized a clinical cut-off score, to identify the veterans who decreased below the clinical range on the PCL-5. The National Center for PTSD suggests a cut-point of 33 until further psychometric evaluation has been conducted on the PCL-5 (Weathers et al., 2013).

To examine changes on the main outcomes measures a series of one-way repeated measures analysis of variance (ANOVAs) were conducted. One-way repeated measures ANOVAs (within-subject ANOVAs) were used to determine whether there was a statistically significant difference between pretreatment, posttreatment, and follow-up means on the main outcomes of interest.

Primary Outcome Variables

Research Question 1: (a) Is ACT an effective treatment for veterans with PTSD or subclinical PTSD?

Of the 19 individuals who completed treatment, seventeen completed the PCL-5, in its' entirety. Results showed 64.7% of the sample (n = 11) showed a response to treatment, utilizing the 5-point cut-off, while 35.3% did not (n = 6). Utilizing the 10-point cut-off to determine clinically meaningful change, results showed that 35.3% of the sample (n = 6) showed a clinically meaningful change, while 64.7% did not (n = 11). Lastly, results showed that 23.5% of the sample (n = 4) showed statistically significant change, utilizing the RCI > 1.96 cutoff. Because the purpose of this study was exploratory, along with the small sample size, the 5-point change score, indicating a significant response to treatment was used in the subsequent analyses.

Research Question 1b. Does ACT positively impact PTSD symptom severity, quality of life, valued living, depression, shame, and moral injury?

One-way repeated measures ANOVAs were implemented to determine if primary outcomes of interest progressed in the predicted direction from pretreatment to posttreatment to follow-up. Table 7 presents means and stand deviations for all primary and secondary outcome measures.

A one-way repeated measures ANOVA was conducted to compare the effect of an ACT intervention on PTSD symptoms (PCL-5) from pretreatment to posttreatment to follow-up. As predicted, results revealed a significant effect of time on PTSD symptoms, $F(2, 64) = 3.40$, $p = .04$, partial $\eta^2 = .096$. Post hoc test of multiple comparisons, using

Table 7

Outcome Means and Standard Deviations from Pretreatment, Posttreatment, and Follow-Up

	Pretreatment ($n = 33$)		Posttreatment ($n = 33$)		Follow-up ($n = 33$)	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*
Primary outcomes						
PTSD symptoms (PCL-5)	45.07	15.27	40.52	14.02	40.97	18.91
Quality of life (QOLS)	61.97	16.10	64.60	13.75	60.69	14.76
Secondary outcomes						
Depression (PHQ-9)	13.03	5.82	11.38	5.24	14.67	8.33
Shame (ISS)	51.42	21.82	52.79	22.23	54.10	23.28
Moral injury (MIES)						
Transgression	17.23	6.27	14.86	6.77	19.77	6.63
Betrayal	7.94	2.80	8.10	2.50	9.33	4.10
Well-Being (WHO-5)	9.60	4.34	13.07	4.60	8.74	5.01

Note. PCL-5 = Posttraumatic Stress; QOLS = Quality of Life Scale; PHQ-9 = Patient Health Questionnaire; ISS = Internalized Shame Scale; MIES = Moral Injury Events Scale; WHO-5 = World Health Organization Well-Being Index.

the Sidak corrections, indicated that PTSD symptoms significantly decreased from pretreatment (M = 45.07, SD = 15.27) to posttreatment (M = 40.52, SD = 14.02; p = .022), however the effect of time on PTSD symptoms did not maintain from pretreatment to follow-up (p = .15). A Cohen's d effect size was calculated comparing pretreatment to posttreatment PTSD symptom severity scores. We followed the formula for a Cohen's d effect size by subtracting the mean scores at posttreatment from the mean scores pretreatment divided by the standard deviation. Results showed a small to moderate effect size, Cohen's d = 0.31. Taken together, these results suggest that an ACT intervention was effective in reducing PTSD symptoms pre-to post- treatment; however, these gains did not maintain to follow-up.

A one-way within subjects ANOVA was conducted to compare the effect of an ACT intervention on quality of life (QOLS) from pretreatment to posttreatment to follow-up. Results revealed a significant effect of time on quality of life, $F(2, 64) = 4.01$, p = .023, partial η^2 = .11. However, post hoc test of multiple comparisons, using the Sidak corrections, indicated that quality of life did not significantly improve from pretreatment (M = 61.97.07, SD = 16.10) to posttreatment (M = 64.60, SD = 13.75) (p = .20), while the difference between quality of life from pretreatment to follow-up was significant (p = .005). Contrary to predictions, these results suggest that an ACT intervention did not have an overall positive effect on a measure of quality of life from pre- to posttreatment and follow-up.

Secondary Outcome Variables

To determine the effectiveness of ACT on secondary outcome variables of interest similar ANOVA procedures were conducted; one-way repeated measures ANOVAs were implemented to determine if general wellbeing (WHO-5), depression (PHQ-9), moral injury (MIES) and shame (ISS) significantly changed over the course of treatment and follow-up. Means and standard deviations were presented in Table 7.

For general wellbeing (WHO-5), results on a one-way ANOVA yielded significant effects by time, $F(1.64, 51.97) = 23.34$, $p < .001$, partial $\eta^2 = .42$. The Mauchly's test of sphericity indicated that the assumptions of sphericity had been violated, $X^2(2) = 10.20$, $p = .017$, therefore degrees of freedom were corrected by reporting the Greenhouse-Geisser estimates for the WHO-5. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that general well-being significantly increased from pretreatment ($M = 9.60$, $SD = 4.34$) to posttreatment ($M = 13.07$, $SD = 4.60$) ($p < .001$), however pretreatment scores did not significantly differ from follow-up scores ($p = .67$). Results showed a large effect size from pretreatment to posttreatment, Cohen's $d = 0.77$. General wellbeing decreased from posttreatment ($M = 13.07$, $SD = 4.60$) to follow-up ($M = 8.74$, $SD = 5.01$). As predicted, wellbeing significantly improved pre- to posttreatment, however gains were not maintained at follow-up.

For shame (ISS), results on a one-way repeated measures ANOVA yielded no significant effect by time, $F(1.60, 50) = .71$, $p = .46$, partial $\eta^2 = .022$. Of note, the Mauchly's test of sphericity indicated that the assumptions of sphericity had been violated, $X^2(2) = 8.16$, $p = .006$ therefore degrees of freedom were corrected by reporting

the Greenhouse-Geisser estimates for the ISS.

For depression (PHQ-9), results on a one-way repeated measures ANOVA yielded significant effects by time $F(2, 64) = .731$, $p = .003$, partial $\eta^{2} = .188$. The Mauchly's test indicated that the assumptions of sphericity had been violated, $X^{2}(2) = 10.27$, $p = .006$ therefore degrees of freedom were corrected by reporting the Greenhouse-Geisser estimates for the PHQ-9. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that depression significantly decreased from pretreatment ($M = 13.03$, $SD = 5.82$) to posttreatment ($M = 11.38$, $SD = 5.24$, $p = .024$), however pretreatment scores did not show a significant difference from follow-up scores ($p = .25$). Results showed a small to medium effect size from pre- to posttreatment, Cohen's $d = 0.30$. Inconsistent with predictions, depression appeared to (significantly) increase from posttreatment to follow-up ($p = .006$).

For moral injury events by *perceived transgressions* (MIES), a one-way ANOVA yielded significant differences by time, $F(2,64) = 20.40$, $p < .001$, partial $\eta^{2} = .40$. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that *perceived transgressions* of moral injury, significantly decreased from pretreatment ($M = 17.23$, $SD = 6.27$) to posttreatment ($M = 14.86$, $SD = 6.77$, $p = .033$). Contrary to predictions, scores significantly increased from pretreatment ($M = 17.23$, $SD = 6.27$) to follow-up ($M = 19.77$, $SD = 6.63$, $p = .006$). Taken together, the number of perceived moral injury events by transgressions significantly decreased pre-to posttreatment; however, contrary to predictions, the number of perceived moral injury events by *transgression* increased from pretreatment to follow-up.

For moral injury events by *perceived betrayals* (MIES), a one-way ANOVA yielded significant differences by time, $F(2,64) = 7.08$, $p = .002$, partial $\eta^2 = .18$. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that the number of reported moral injury events by *perceived betrayals*, did not significantly decrease from pretreatment treatment ($M = 7.94$, $SD = 2.76$) to posttreatment ($M = 8.10$, $SD = 2.50$, $p = .94$). Contrary to predictions, the number of reported moral injury events by *perceived betrayals* significantly increased from pretreatment ($M = 7.94$, $SD = 2.76$) to follow-up ($M = 9.33$, $SD = 4.10$, $p = .006$). Taken together, the number of *perceived betrayals* on the moral injury events scale did not significantly improve pre- to posttreatment and follow-up.

Process of Change Measures

With respect to process measures, participants completed measures of psychological flexibility and valued living at pretreatment, mid-point 1 (session three), mid-point 2 (session six), posttreatment and follow-up. One-way repeated measures ANOVAs were implemented to determine if process of change measures (AAQ-II, VQ, BAFT) progressed in the predicted direction from pretreatment to posttreatment to follow-up. Table 8 includes the means and stand deviations.

Results showed a nearly significant effect of time on psychological flexibility $F(2, 64) = 3.08$, $p = .053$, partial $\eta^2 = .088$. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that changes in psychological flexibility from pretreatment to posttreatment were nonsignificant ($p = .663$) and were nonsignificant from pretreatment

Table 8

Process Measures Means and Standard Deviations from Pretreatment, Posttreatment, and Follow-Up

	Pretreatment (n = 33)		Session 3 (n = 33)		Session 6 (n = 33)		Posttreatment (n = 33)		Follow- Up (n = 33)	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Psychological Flexibility (AAQ-II)	31.97	10.21	31.46	8.75	31.72	8.10	30.81	9.30	33.80	8.10
Defusion (BAFT)			-	-	-	-				
Negative evaluation	28.33	9.10	-	-	-	-	27.81	7.53	30.20	5.80
Somatic concerns	19.84	7.30	-	-	-	-	16.24	6.30	20.72	6.22
Emotion regulation	25.72	7.20	-	-	-	-	22.41	6.40	24.62	5.74
Valued living (VQ)										
Obstruction	17.36	5.40	17.50	6.22	18.03	4.82	14.42	6.20	16.10	6.10
Progress	15.70	5.74	17.33	5.43	18.21	5.50	16.91	2.85	19.90	4.00

Note. AAQ-II= Acceptance and Action Questionnaire, BAFT = Believability of Anxious Thoughts and Feelings, VQ= Valuing Questionnaire.

to follow-up (p = .46). Of note, results showed that psychological flexibility significantly decreased posttreatment to follow-up (p = .045).

On a one-way repeated measures ANOVA, results showed a trend towards a significant effect of time on *obstruction* to Valued Living, $F(2, 64) = 2.96$, p = .06, partial $\eta^{2 =}$ .085. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that *obstruction* in valued living significantly decreased pretreatment (M = 17.36, SD = 5.39) to posttreatment (M = 14.23, SD = 6.20, p = .018). However, results showed that *obstruction* to valued living did not significantly improve from pretreatment to follow-up (p = .70). As predicted, *obstruction* to Valued Living trended towards a significant decrease from pre- to posttreatment; however, *obstruction* to valued living did not

significantly change from pretreatment to follow-up.

Results showed a significant effect of time on *progress* in Valued Living $F(1.65, 52.80) = 9.05$, $p = .001$, partial $\eta^2 = .220$. The Mauchly's test of sphericity indicated that the assumptions of sphericity had been violated, $X^2 (2) = 7.40$, $p = .025$, therefore Greenhouse-Geisser estimates were reported for *progress* in Valued Living. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that *progress* in Valued Living did not significantly improve from pretreatment ($M = 15.70$, $SD = 5.74$) to posttreatment ($M = 16.91$, $SD = 2.85$, $p = .64$), however pretreatment scores ($M = 15.70$, $SD = 5.74$) significantly differed from follow-up scores ($M = 19.90$, $SD = 4.00$, $p = .002$). As predicted, progress in Valued Living significantly improved from pretreatment to follow-up.

Results showed a significant effect of time on *somatic concerns* on the BAFT, $F(2, 64) = 12.11$, $p < .001$, partial $\eta^2 = .275$. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that somatic concerns on the BAFT significantly decreased from pretreatment ($M = 19.84$, $SD = 7.30$) to posttreatment ($M = 16.24$, $SD = 6.30$, $p = .002$). However, results showed that somatic concerns on the BAFT did not significantly improve from pretreatment to follow-up ($p = .73$). As predicted, fusion with anxious thoughts and feelings related to *somatic concerns* decreased pre- to posttreatment, however improvements did not maintain at follow-up.

Results showed a significant effect of time on *emotion regulation* on the BAFT, $F(2, 64) = 6.25$, $p = .003$, partial $\eta^2 = .163$. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that *emotion regulation* on the BAFT significantly

decreased from pretreatment (M = 25.72, SD = 7.20) to posttreatment (M = 22.41, SD = 6.40, p = .017). However, results showed that *emotion regulation* on the BAFT did not significantly improve pretreatment to follow-up (p = .46). As predicted, fusion with anxious thoughts and feelings related to *emotion regulation* improved pretreatment to posttreatment, however improvements did not maintain at follow-up.

Results showed a significant effect of time on *negative evaluation* on the BAFT, $F(1.62, 52.54) = 4.40$, p = .024, partial η^2 = .120. The Mauchly's test of sphericity indicated that the assumptions of sphericity had been violated, X^2 (2) = 7.63 p = .022, thus Greenhouse-Geisser estimates were reported. Post hoc test of multiple comparisons, using the Sidak corrections, indicated that *negative evaluation* on the BAFT, did not significantly improve from pretreatment to posttreatment (p = .90), nor from pretreatment to follow-up (p = .22). However, results showed that *negative evaluation* on the BAFT significantly increased from posttreatment to follow-up (p = .005). Contrary to predictions, fusion with anxious thoughts and feelings related to negative evaluations did not improve over the course of treatment and appeared to worsen from posttreatment to follow-up.

Secondary Outcomes

Research Question 2a. Do pretreatment levels depression, shame, moral injury and well-being predict response to treatment?

Research Question 2b. Do pretreatment levels of psychological inflexibility and cognitive fusion predict response to treatment?

Prior to regression analyses, we examined the relationship between depression, moral injury, shame, wellbeing and the primary outcome variables of interest including PTSD diagnostic status, PTSD symptoms, valued living, and quality of life. Pearson R correlations were used to determine the association between variables. Table 9 presents correlations between pretreatment measures and primary outcome variables.

As shown in Table 9, veterans with a PTSD diagnosis showed a strong positive correlation with PTSD symptoms (PCL-5), $r = .66$, $p < .01$ and a strong positive correlation with shame (ISS), $r = .37$, $p < .05$. PTSD diagnostic status showed a negative relationship with quality of life (QOL) $r = -.45$ $p < .01$ and progress in valued living $r = -.36$, $p < .01$. As expected, PTSD symptoms at pretreatment (PCL-5) showed a strong negative correlation with quality of life (QOL), $r = -.71$, $p < .01$; progress in valued living (VQ-progress), $r = -.54$, $p < .01$ and overall well-being (WHO-5), $r = -.64$, $p < .01$. Results showed a strong positive correlation between PTSD symptoms (PCL-5) and obstruction in valued living (VQ-obstruction) $r = .71$, $p < .01$, shame (ISS), $r = .58$, $p < .01$ and depression (PHQ-9) $r = .72$ $p < .01$. Furthermore, findings show strong negative correlations between quality of life (QOLS) and obstruction to valued living (VQ-obstruction), $r = -.57$, $p < .01$, shame (ISS) $r = -.60$, $p < .01$, and depression (PHQ-9), $r = -.77$, $p < .01$. There were strong positive correlations between quality of life (QOL) and progress in valued living (VQ-progress), $r = .64$, $p < .01$ and overall well-being (WHO-5), $r = .722$, $p < .01$. As expected, results showed a strong negative correlation between obstruction in valued living (VQ-obstruction) and progress in valued living (VQ-progress), $r = -.36$, $p < .05$ and obstruction in valued living (VQ-obstruction) and overall

Table 9

Bivariate Correlations Among Predictor and Primary Outcome Variables Pretreatment

Variables	1	2	3	4	5	6	7	8	9	10
1.PCL-5 dx	-									
2.PCL-5	.66**	-								
3.QOLS	-.45**	-.71**	-							
4.VQ-obstruction	.17	.71**	-.57**	-						
5. VQ-progress	-.36*	-.54**	.64**	-.36*	-					
6. ISS	.37*	.58**	-.60**	.56**	-.66**	-				
7 PHQ-9	.44*	.72**	-.77**	.55**	-.72**	.62**	-			
8. MIES-betrayal	-.30	-.15	.06	.04	.18	-.26	-.29	-		
9. MIES-transgression	-.28	-.26	.18	-.12	.28	-.33	-.21	.25	-	
10. WHO-5	-.24	-.64**	.72**	-.67**	.42*	-.29	-.73**	.04	.07	-

Note. PCL-5 dx = PTSD diagnostic status; PCL-5 = PTSD checklist; QOLS = Quality of Life Scale; VQ-obstruction/progress = Valuing Questionnaire; ISS = Internalized Shame Scale; PHQ-9 = Patient-Health Questionnaire; MIES = Moral Injury Event Scale; WHO-5 = World Health Organization Well Being Index.

* $p < .05$.
** $p < .01$.

wellbeing (WHO-5), $r = -.67$, $p < .01$. Results showed that obstruction in valued living (VQ-obstruction) had a strong positive correlation with shame (ISS) $r = .56$, $p < .01$ and depression (PHQ-9), $r = .55$, $p < .01$. Additionally, progress in valued living (VQ-progress) showed a strong negative correlation with shame (ISS), $r = -.66$, $p < .01$ and depression (PHQ-9), $r = -.72$, $p < .01$ and a positive correlation with well-being (WHO-5), $r = .42$, $p < .05$. Shame (ISS) and depression (PHQ-9) showed a strong positive correlation $r = .622$, $p < .01$. Of note, moral injury showed no significant correlations with any pretreatment measures.

2a. Do pretreatment levels depression, shame, moral injury, well-being predict response to treatment?

Binomial logistic regression analyses were conducted in SPSS version 23.0, to

determine if pretreatment symptoms significantly predicted response to treatment, as measured by a 5-point change on the PCL-5. Specifically, we aimed to predict the probability that a veteran showed a response to treatment based on pretreatment symptom scores.

In order to determine covariates for the model, a series of regression analyses were conducted with blocks of demographic variables (e.g., age, educational, marital status, race/ethnicity, religion, PTSD dx) and military characteristics (e.g., years in service, branch, era, number of deployments, previous PTSD treatment). Results found branch of military service to be a significant predictor of PTSD change from pretreatment to posttreatment; however, once placed in the model with other variables branch of military service was nonsignificant and, therefore, excluded from the model. Furthermore, all other demographic variables were nonsignificant and were excluded from the model.

To assure that all appropriate assumptions were met for the logistic regression model several procedures were conducted. First, to assess for linearity between the continuous variables and the logit of the dependent variable, Box-Tidwell (1962) procedures were followed. Results showed that each of the predictor variables were linearly related to the logit of the dependent variable (PCL-5 change). Second, to assess for multicollinearity, Tolerance/VIF statistics were examined. VIF scores of ten or greater were used to indicate serious multicollinearity (Cohen, Cohen, West, & Aiken, 2013). Some mulitcollinearity was detected between the PHQ-9 and the MIES transgression (VIF = 3.71) and the PHQ-9 and MIES betrayal (VIF = 3.6). Third, to

assess for significant outliers, residuals were assessed. Results showed that there was one studentized residual on the depression variable (PHQ-9) = -3.04, which remained in the analyses.

Next, a series of simple logistic regressions were conducted to assess the whether pretreatment depression, shame, moral injury and well-being predicted the likelihood that a veteran showed a positive response to treatment. All results are presented in Table 10. Contrary to predictions, results showed that pretreatment levels of depression, shame, well-being, and moral injury due to *perceived betrayals* did not significantly predict a response to treatment as measured by a 5-point change in PTSD symptoms pre- to posttreatment. Results showed that pretreatment levels of moral injury by *perceived transgressions* was significant in predicting a response to treatment (5-point change on

Table 10

Logistic Regression Predicting Likelihood in PTSD Treatment Response Based on Pretreatment Symptoms

Variables	*B*	SE	Wald	*df*	*p*	Odds ratio	95% CI Lower	95% CI Lower
PHQ-9	.11	.078	2.08	1	.15	1.12	.96	1.30
ISS	.02	.018	1.11	1	.29	1.02	.98	1.06
WHO-5	-.11	.092	1.53	1	.22	.89	.75	1.07
MIES-B	-.11	.155	0.90	1	.34	.90	.72	1.12
MIES-T	-.11	.053	4.26	1	.04	.90	.81	.99
AAQ-II	.06	.039	2.11	1	.15	1.06	.98	1.14
BAFT er	.05	.090	0.35	1	.56	1.05	.88	1.26
BAFT sm	.12	0.11	1.16	1	.28	1.13	.91	1.4
BAFT ne	-.09	0.10	0.85	1	.36	.91	.75	1.11

Note. PHQ-9 = Patient-Health Questionnaire; ISS = Internalized Shame Scale; WHO-5 = World Health Organization Well Being Index, MIES = Moral Injury Event Scale; MIES-B = Moral Injury Events Scale Betrayals; MIES-T = Moral Injury Events Scale Transgressions; AAQ-II = Acceptance and Action Questionnaire, BAFT = Believability of Anxious Thoughts and Feelings, er = emotion regulation, sm = somatic concerns, ne = negative evaluation.

the PCL-5) from pre- to posttreatment. The logistic regression model was statistically significant X^2 (1) = 4.96, p = .026 and correctly classified 69.7% of the participants. In this model, moral injury measured by *perceived transgressions* explained 19.4% (Nagelkerke R square) of the variance. Furthermore, increasing the number of reported moral injuries by *perceived transgressions* was associated with a reduction in the likelihood of showing a statistically significant response to treatment. Specifically, a one-unit change in moral injury by *perceived transgressions* decreased the log odds by .88.

2b. Do pretreatment levels of psychological inflexibility and cognitive fusion predict response to treatment?

Additional logistic regressions were conducted to predict response to treatment based on pretreatment levels of psychological inflexibility (AAQ-II) and cognitive fusion (BAFT). Again tests of assumptions were conducted to assess for linearity, multicollinearity, and significant outliers. A bonferroni correction was made for all the independent variables and the interaction terms, which suggested that $p < .0065$ represented statistical significance (Tabachnick & Fidell, 2007). Tests of assumptions showed that all independent variables were found to be linearly related the logit of the dependent variable. Of note, moderate mulitcollinearity existed between the AAQ-II and the BAFT *somatic concerns* (VIF = 3.86) and the AAQ-II and BAFT negative effect (VIF = 5.43). As one might expect, multicollinearity existed between the BAFT subscales; specifically, the BAFT *somatic concerns* and BAFT *negative evaluation* (VIF = 4.23) and BAFT *emotion regulation* and BAFT *somatic concerns* (VIF = 3.89) and BAFT *somatic concerns* and BAFT *negative evaluation* (VIF = 5.22). Finally, test of

assumptions revealed one studentized residual on the BAFT variable -2.5, which remained in the analyses.

Results showed that pretreatment levels of psychological inflexibility (AAQ-II) did not significantly predict a response to treatment as measured by a 5-point change in PTSD symptoms pretreatment to posttreatment. Further, results from the logistic regression found that cognitive fusion at pretreatment did not significantly predict a response to treatment. Contrary to predictions, greater psychological inflexibility and higher cognitive fusion at pretreatment was not predictive of response to treatment.

Research Question 3: Do changes in psychological flexibility (AAQ-II) and Valued Living (VQ) predict PTSD symptom severity posttreatment?

In order to assess whether changes in treatment processes predicted changes in outcomes, above baseline functioning, bivariate correlation analyses were conducted. First, change scores were calculated (AAQ pretreatment - AAQ session 6) and (VQ pretreatment- VQ session 6). Next, a bivariate correlation was conducted to assess the relationship between changes in psychological flexibility (AAQ change) and PTSD posttreatment (PCL-5). Preliminary analyses showed the relationship to be monotonic, which was assessed through visual inspection of a scatterplot of the two variables. Results showed that there was a weak positive correlation between changes in psychological flexibility and PTSD symptom severity at posttreatment, r_s (31) = .284, p = 0.11. Contrary to predictions, change in psychological flexibility over the course of treatment was not significantly associated with PTSD posttreatment.

Another Spearman's rank-order correlation was conducted to assess the

relationship between changes in valued living and PTSD symptoms posttreatment. Again, preliminary analyses showed the relationship to be monotonic, which was assessed through visual inspection of a scatterplot of the two variables. Results showed that there was a weak negative correlation between changes in *progress* towards Valued Living and PTSD symptom severity at posttreatment, $r_s(31) = -.23$, $p = 0.19$. Contrary to predictions, a change in valued living over the course of treatment was not significantly associated with PTSD symptoms posttreatment. Results showed that there was a weak positive correlation between changes in *obstruction* to Valued Living subscales and PTSD symptom severity posttreatment, $r_s(31) = .11$, $p = 0.55$.

Research Question 4: How acceptable is ACT as an intervention for veterans diagnosed with PTSD?

To assess treatment acceptability scores on the TEI-SF were evaluated from both posttreatment and follow-up assessments. As predicted, results showed that a majority of veterans who completed treatment 97% ($n = 18$), found the ACT intervention to be highly acceptable (a score > 21). Scores range from 0 to 35 with higher scores indicating greater acceptability ($M = 28.26$, $SD = 3.20$) and follow-up ($M = 28.00$, $SD = 3.91$).

CHAPTER V

DISCUSSION

Primary Outcomes

The present study examined the effectiveness of an ACT intervention for veterans with PTSD and subclinical PTSD who had previously completed a gold standard treatment for PTSD (n = 33). An 8-week closed group design was used, which implemented a protocol focused on increasing valued living and decreasing experiential avoidance. The main outcomes of interest were changes in PTSD symptoms, valued living, and quality of life from pre- to posttreatment, and again at 1-month follow-up.

Results showed that 64.7% of veterans showed a favorable response to treatment as measured by a 5-point change in PTSD symptoms. Further analyses found that 35.3% of veterans showed a clinically meaningful change (10-point change on PCL-5) over the course of treatment and 25.3% of veterans showed a reliable change utilizing the reliable change index. Results suggest that a majority of the veterans—with PTSD or subthreshold PTSD- experienced a positive response to treatment. Perhaps, the lack of clinically meaningful change among some of the study sample can be associated with the chronic nature of their PTSD. Additionally, the lack of reliable change for many on the major outcome of interest (PCL-5) may be attributed to the stringent nature of the reliable change index (Benotsch et al., 2000; Loerinc et al., 2015).

Overall, findings from this study on primary outcomes of interest were mixed. Primary outcomes included PTSD symptoms, quality of life, and valued living. As

hypothesized, results showed that PTSD symptoms (PCL-5) significantly decreased from pre- to posttreatment, although no significant difference was found at the one-month follow-up assessment. These findings are consistent with previous literature suggesting that up to two-thirds of veterans completing the gold standard treatments for PTSD, retain their diagnosis posttreatment, mean scores remain at or above the clinical cutoff, and full remission is rare (Steenkamp et al., 2015).

The VQ consists of subscales measuring *progress* and *obstructions* towards valued living. In line with predictions, veterans showed a significant improvement in progress towards valued living from pre- to follow-up. Results showed that veterans showed a trend towards a significant reduction in *obstructions* to valued living from pre- to posttreatment. However, *obstructions* towards valued living did not improve pretreatment to follow-up. It is possible that weekly check-ins regarding behavioral commitments, highlighted a veteran's progress and barriers towards valued living. Perhaps, this weekly exercise enhanced a veteran's awareness of moving towards a valued life, while simultaneously increasing a veteran's sensitivity to barriers or obstructions that impede progress towards valued living.

The QOLS broadly measures life satisfaction at the time of assessment. Contrary to predictions, quality of life did not significantly increase from pre- to posttreatment. Furthermore, results showed a significant decrease in quality of life from pretreatment to follow-up. One possible explanation is that improvement in quality of life may require more than 8 to 12 weeks to observe in veterans with chronic PTSD/subthreshold PTSD. Another possibility is that veterans with PTSD may consider all life experiences

including military deployments and trauma exposure, when responding to questions on overall life satisfaction.

Results on secondary outcome variables of interest provided additional information on the effectiveness of an ACT group for veterans with PTSD/subthreshold PTSD. The secondary outcome variables of interest were measures of depression (PHQ-9), moral injury (MIES), shame (ISS), and general wellbeing (WHO-5). Consistent with predictions, veterans showed significant improvements from pre- to posttreatment on overall wellbeing and depression; however, gains did not maintain at follow-up. Research suggests that active participation in a group intervention may provide social support and eliminate avoidant behaviors (e.g., Sripada et al., 2016). Perhaps, weekly group attendance improved a veteran's social support network, decreased avoidant behaviors, and ultimately alleviated depressive symptoms. However, it is also possible that veterans experienced the opposite upon group termination. As a result, veterans may have returned to avoidant behavior patterns that once contributed to baseline depression and poor general wellbeing.

Contrary to predictions, results showed no significant difference in shame symptoms (ISS) from pre- to posttreatment and follow-up. One explanation is that the content and experiential exercises of the intervention did not accurately target the construct of shame. Research suggests that treatment of shame is most effective when the construct is targeted directly (J. B. Luoma, Kohlenberg, Hayes, Bunting, & Rye, 2008).

The moral injury event scale measured the number of moral injury events (MIEs) experienced by a veteran. The MIES consists of two subscales, one that measures moral

injurious events that are associated with *perceived betrayals* and one that measures moral injurious events that are associated with *perceived transgressions*. Consistent with our prediction, the number of *perceived transgressions* significantly decreased from pre- to posttreatment. However, results showed that perceived transgressions increased from pretreatment to follow-up. Interestingly the number of perceived betrayals did not significantly decrease over the course of treatment. One possible explanation is that the MIES assesses the number of events experienced rather than assessing the quality or content of the events. From a theoretical perspective, one might expect ACT to improve acceptance of MIEs, but not necessarily alter the number of reported MIEs.

Additionally, we examined process of change measures including the AAQ-II and the BAFT. Results showed that psychological flexibility did not significantly improve over the course of treatment, and decreased from posttreatment to follow-up. One explanation is that an eight-week intervention was insufficient at producing lasting change on the measure of psychological flexibility. Yet, another explanation is that the AAQ-II has had some difficulty detecting change in clinical outcome research, as this version of the measure uses broad language that may not be specific enough to capture psychological flexibility related to posttraumatic stress (e.g., J. Luoma, Drake, Kohlenberg, & Hayes, 2011).

The BAFT consists of three subscales, measuring cognitive fusion with *somatic concerns, emotion regulation*, and *negative evaluation*. Consistent with predictions, cognitive fusion related to *somatic concerns* and *emotion regulation* significantly decreased over the course of treatment, however gains were not maintained at follow-up.

Of note, cognitive fusion related to *negative evaluation* did not significantly improve and appeared to increase from posttreatment to follow-up. Perhaps, the treatment protocol included experiential exercises that emphasized an acceptance of internal experiences associated with somatic and emotional concerns more so than negative evaluation. However, this is unlikely given that two sessions were devoted to cognitive defusion exercises.

Taken together, these results suggest that an eight-week ACT group intervention was effective at reducing PTSD symptoms, increasing progress towards valued living, decreasing depression and increasing wellbeing. Specifically, this treatment produced small to moderate effect sizes, good clinical effectiveness pre- to posttreatment however, treatment gains at follow-up were poor.

Secondary Outcomes

In addition to the primary and secondary analyses of interest, we were interested in whether pretreatment levels of depression, shame, moral injury and wellbeing would predict response to treatment. Contrary to predictions, results showed that levels of depression, shame, and wellbeing at pretreatment did not significantly predict a response to treatment. These findings are inconsistent with a previous research study, which found moderate to severe depression at pretreatment to predict a greater reduction in symptoms posttreatment. However, the same study showed that individuals with higher symptom severity at baseline continued to experience significant symptoms posttreatment (Felleman, Stewart, Simpson, Heppner, & Kearney, 2016). An alternative explanation for

null findings could be the small sample size used in the logistic regression analyses. Some researchers suggest a minimum of 50 cases in order to conduct logistic regression, while others suggesting a bare minimum of 15 cases (Peng, Lee, & Ingersoll, 2002).

Interestingly, results showed that the number of moral injury event (MIEs) due to *perceived transgressions* was a significant predictor for response to treatment. Specifically, the greater number of reported MIEs by *transgression*- the less likely a veteran would show a response to treatment. Perhaps, the number of MIEs experienced by a veteran is a maintaining factor for chronic PTSD. These findings are consistent with a recent study showing that veterans with refractory PTSD are more likely to recall MIEs that are internal rather than external. Furthermore, veterans in the study often expressed guilt and shame associated with actions they performed or participated in during deployment (Currier, McCormick, et al., 2015). Of note, moral injury by *perceived betrayals* was not a significant predictor of response to treatment. It is possible that a sense of betrayal by a leader is not a maintaining factor for PTSD. However, malpractice or betrayal from leadership is a vastly under-researched topic in the literature (Currier, McCormick, et al., 2015)

Additional analyses examined whether pretreatment levels of psychological flexibility and cognitive fusion predicted a response to treatment. Contrary to predictions, neither pretreatment levels of psychological flexibility/experiential avoidance nor cognitive fusion predicted response to treatment. These findings are surprising considering the abundance of research that suggests greater experiential avoidance and cognitive fusion are related to posttraumatic stress symptoms (e.g., Benotsch et al., 2000;

Plumb et al., 2004; Tull et al., 2004).

Process of Change

To examine whether ACT theorized process of change measures were associated with posttreatment symptom severity. To do so, change scores were calculated between pretreatment psychological flexibility ratings (AAQ-II) and session six psychological flexibility ratings (AAQ-II). Change scores were also calculated between pretreatment ratings of valued living (VQ) and session six ratings of valued living (VQ). Results showed that changes in psychological flexibility over the course of treatment (pretreatment AAQ-II scores—session six AAQ-II scores) were not significantly associated with PTSD symptom severity at posttreatment. These findings are surprising, given that the AAQ-II is a measure of psychological flexibility, the purported mechanism of change in ACT (Hayes et al., 2006). Perhaps, a change score over the course of six weeks was an insufficient amount of time to shift the broader construct of psychological flexibility. Further, contrary to predictions, results showed that changes in *progress* towards valued living and *obstruction* towards valued living, were not significantly associated with PTSD symptom severity posttreatment. It is possible that progress towards valued living, occurred regardless of the presence of PTSD symptoms, which may be expected from an ACT treatment model. An alternative explanation is that the VQ functions better as an outcome measure, rather than a process measure.

Summary of Acceptability Outcomes

In addition to our primary outcomes, we were interested in whether or not ACT

would be an acceptable treatment for veterans with PTSD. As predicted, veterans who attended the group found it to be highly acceptable. It is important to note that a notable number of veterans did not fully complete the 8-week intervention. It is possible that drop out provides information regarding the acceptability of the treatment. Veterans may have found the group less acceptable or inconsistent with their expectations for treatment, ultimately resulting in dropout. Future studies may consider providing a more thorough explanation of the treatment prior to the initial session. It may also be important to explain to group participants that ACT utilizes experiential exercises and encourages active group participation, which may not be an appealing treatment approach for veterans with refractory PTSD.

Empirical Implications

Results from this study provide empirical support for ACT as a second-line intervention for PTSD. While data is limited, four case studies and one multiple baseline study found ACT to be an effective treatment for PTSD and comorbid disorders (Batten & Hayes, 2005; Burrows, 2013; Orsillo & Batten, 2005; Twohig, 2009a; Woidneck et al., 2013). Moreover, this is the first known study to examine the effectiveness of an ACT group for veterans who have completed a first line treatment for PTSD (CPT, PE, EMDR), yet continue to experience PTSD/subthreshold PTSD. Results found ACT to be an effective intervention for improving PTSD symptoms and increasing valued living in veterans with refractory PTSD. Despite these gains, we reported that a majority of veterans in our study remained above the clinical cutoff for meaningful change. These

findings are consistent with previous research suggesting that nearly one-third to one-half of veterans who receive exposure-based therapies do not respond to treatment at the level that is expected (Schottenbauer et al., 2008; Steenkamp et al., 2015). Overall, this study provides evidence for ACT as an intervention for PTSD, however, the long-term effectiveness appears limited or in need of further attention.

Despite the existing data for effective PTSD treatments, research shows that treatment gains are not always maintained at follow-up. For example, a recent study offered an extensive and critical review regarding the efficacy of first-line psychotherapies for veterans and military personal with PTSD. Results showed that CPT and PE outperformed treatment-as-usual and waitlist controls, however, only 49-70% of individuals showed a clinically meaningful change (10- to 12-point change on PTSD symptoms). Furthermore, results showed that PTSD scores at posttreatment remained at or above the clinical cutoff for PTSD and nearly two-thirds of the military personal/veterans retained their PTSD diagnosis posttreatment (Steenkamp et al., 2015). Therefore, our study results at follow-up are within the existing ranges presented in the literature and may be expected. Furthermore, findings from this study further illuminate the need for continued resources and therapeutic options for veterans following the completion of a trauma-focused therapy.

One such option is to provide veterans the opportunity to attend a non-trauma focused psychotherapy group. Evidence indicates that group psychotherapy provides social support, while providing an opportunity to practice exposure to social contexts (Ready et al., 2012; Sripada et al., 2016). Therefore, attending group therapy may directly

target experiential avoidance and provide corrective learning experiences for veterans with PTSD. From an ACT perspective, PTSD is often maintained by behavioral avoidance or experiential avoidance (Thompson & Waltz, 2010). Thus, offering a group that emphasizes acceptance may be more effective than a group than emphasizes fear reduction.

This study contributes to the ongoing debate on whether tolerance or fear reduction is a more effective model for the treatment of PTSD (Bluett, Zoellner & Feeny, 2013). Research suggests that promoting tolerance in the presence of fear or distress creates more robust learning (inhibitory learning; Craske et al., 2008). Moreover, the ACT treatment model aims to move beyond tolerance to acceptance to further increase inhibitory learning (Thompson et al., 2013). The ACT treatment model promotes exposure as a way to practice acceptance in the presence of distress- with the purpose of living a more meaningful life (Eifert & Forsyth, 2005). Overall, findings from this study suggest that a mindfulness and acceptance-based intervention increases ones' progress towards valued living. Additionally, anecdotal evidence regarding the success of weekly behavioral commitments, suggests that veterans were utilizing acceptance strategies in previously avoided contexts, in order to move towards personal values.

There is a growing body of research aiming to understand, define and treat moral injury. For example, a recent study interviewed fourteen male veterans/military personal in efforts to clarify the contextual factors that may lead to or be perceived as a moral injury event (MIE). Similar to our study sample- all fourteen participants had received outpatient treatment for PTSD, failed to improve, and were completing intensive

residential treatment for PTSD. Interestingly, the veterans and military personal reported psychological experiences or internal experiences as being a greater factor in determining moral injury compared to organizational, cultural, and environmental experiences (Currier, McCormick, et al., 2015). Our study compliments these findings, by providing quantitative data regarding the number of moral injury events and type of MIEs experienced by veterans with PTSD.

Recently, attention has been directed to understanding the interplay between posttraumatic stress and moral injury. The role of shame was examined in this study, as it appears to be a maintaining factor for both moral injury (A Nieuwsma et al., 2015) and PTSD (A Nieuwsma et al., 2015; Currier, Holland, & Malott, 2015; Currier, McCormick, et al., 2015; Gutierrez & Hagedorn, 2013). As shown in the results, shame did not improve over the course of treatment. These findings are inconsistent with a large clinical trial, which found ACT to be an effective intervention for shame (J. B. Luoma, Kohlenberg, Hayes, & Fletcher, 2012). Moreover, research has shown that interventions that target shame directly tend to be more effective (J. B. Luoma et al., 2008). One possible conclusion is that our intervention did not appropriately target the construct of shame. In conclusion, further research is needed to understand the construct of moral injury, the relationship to posttraumatic stress, and how underlying factors such as shame may inhibit long-term recovery.

Clinical Implications

This study offers promising implications for the treatment of PTSD among

veterans with chronic PTSD. First, this study provides some indication that an ACT protocol for PTSD can be effective with veterans in a group setting. Second, results showed significant improvements towards valued living, which provides early implications that a values-driven protocol is useful for veterans with PTSD. Third, data from this study contributes to the growing body of literature testing alternative and complimentary treatments for PTSD. Furthermore, this study supports previous research indicating that ACT is an effective treatment for depression and improves general wellbeing.

As previously mentioned, high dropout rates and poor response to treatment is not uncommon among PTSD treatments. Many veterans who complete a first-line treatment for PTSD will continue to experience symptoms and dysfunction posttreatment. Of surprise, many researchers do not report the need for continued care among treatment completers (Steenkamp et al., 2015). Veterans recruited for this study were quite obviously in need of treatment above and beyond the prescribed dosage of 10-12 sessions offered in a trauma-focused treatment protocol. Furthermore, ongoing referrals to the group, suggest that treatment providers acknowledge that completion of an EBT for PTSD may not be sufficient for some veterans. In sum, findings from this study would encourage the Veteran's Health Care Administration along with mental health providers to continue to provide and improve upon continued care options, such as group therapy, for veterans with refractory PTSD.

Extensive research has found group therapy to have strong efficacy, retention, and patient acceptability in the treatment of PTSD (e.g., Barrera et al., 2013; Sloan et al.,

2013). Consistent with existing literature, veterans in this study found the eight-week ACT group to be highly acceptable. It is likely that veterans who have completed a trauma-focused intervention continue to need guidance in clarifying their values after trauma as well as learning new strategies to manage residual symptoms. ACT is a natural fit for chronic PTSD. Taken together, an ACT group may be an excellent next-step treatment option for veterans who have completed a trauma-focused intervention.

Lastly, this study informs both researchers and clinicians about the pervasive and potent impact of moral injury events. Findings from this study suggest that a number of veterans with PTSD report moral injury events. Further, nonsignificant findings suggest that moral injury may be a difficult construct to shift. Of interest, a recent conceptual paper by Nieuwsma et al. (2015) suggested that ACT might be applicable in both conceptualizing and treating moral injury. In brief, the article suggests that "ACT works with those who have suffered moral injury by assisting them to explore and open up to the emotional and thought aspects of their injuries, seeing what values were violated, and reengaging in meaningful ways" (A Nieuwsma et al., 2015). Finally, this study provides some indication that clinicians should consider moral injury when treating PTSD. While, no evidence-based treatments exist for moral injury, there has been one preliminary attempt to develop an appropriate treatment. This study highlights the need for an intervention that targets moral injury and associated symptoms such as guilt and shame.

Mixed Findings

While results showed significant improvements on PTSD symptoms, depression

symptoms, and overall wellbeing from pretreatment to post treatment, these gains were not maintained at follow-up. This might suggest that while an ACT group for refractory PTSD may lead to positive treatment gains during active treatment, it does not result in robust changes following treatment termination. On the contrary, veteran's progress towards valued living appeared to improve over the course of treatment and maintain after treatment was terminated. Thus, an 8-week ACT intervention may be effective at motivating veterans to make behavioral changes that are aligned with their long-term goals. On the contrary, the length and depth of the intervention may have been insufficient at targeting the psychological difficulties faced by the veterans in the group.

As shown in the results, contrary to predictions, there were many measures that did not change over the course of treatment and appeared to worsen from pretreatment to follow-up. Specifically, a measure of quality of life improved pretreatment but decreased from pretreatment to follow-up, while a measure of shame did not significantly change over the course of treatment. Additionally, the primary process of change measure, psychological flexibility, did not significantly change over the course of treatment and cognitive defusion appeared to improve on somatic concerns and emotion regulation during treatment, but did not maintain at follow-up. A similar conclusion may be drawn, while an ACT group may be helpful in some arenas for veterans during treatment, an eight-week intervention may not be an appropriate match for the chronicity of the veterans' PTSD and associated symptoms.

The results raise several questions regarding the long-term effectiveness of an ACT group intervention for veterans with refractory PTSD. Findings from this study

suggest that veterans benefit in some capacity by attending an experiential, acceptance-based intervention following prolonged exposure therapy or cognitive processing therapy. However, the decline of treatment gains posttreatment suggests that additional, optional treatments should be made available for veterans with chronic PTSD including booster sessions, ongoing groups, and monthly support groups that emphasize behavior change and valued living. It is also important to consider that providing a theoretically distinct model for treating PTSD might lead to confusion for a veteran who has completed cognitive processing therapy. Specifically, a veteran may struggle to integrate the concepts of acceptance and defusion, as they may appear counterintuitive for a veteran who had previously relied on principles of cognitive restructuring for recovery. In sum, results from this study highlight the potential of secondary treatment options for veterans with refractory PTSD; however, the duration, frequency, forum, and method of these treatments remain an empirical question.

Limitations and Future Directions

While findings from this study are encouraging, it is not without limitations. First, the study lacked a control group, thus we were unable to compare the efficacy of this intervention to other treatment groups provided to veterans with PTSD. Because this study was exploratory no control group was selected, however a wait-list or control group could be implemented as a next step comparison condition. Second, retention was poor at both posttreatment and follow-up. However, dropout rates from this study were comparable to previous studies and the Veterans Health Administration acknowledges

that treatment retention and dropout remains an issue with veterans with PTSD (Seal et al., 2010). Third, imputed data was estimated using data from only twelve veterans who completed follow-up. It is hard to know if these twelve individuals accurately represented the progress of the entire sample. Taken together, future research should aim to recruit a large number of veterans given the prevalence of treatment dropout. It is also possible that providing an online follow-up versus paper-pencil would reduce participant burden and increase follow-up participation.

Fourth, the study included veterans who met criteria for either PTSD or subthreshold PTSD. This may be an issue when trying to generalize findings to other second-line treatments for PTSD. On the contrary, research has shown that a major limitation in trauma research is the emphasis on the diagnostic category of PTSD, which does not accurately account for individuals with marked impairment who do not meet diagnostic criteria (Bryant et al., 2015). Thus, our study sample may be a more accurate clinical representation of veterans with long-standing PTSD. Notably, the study sample included veterans from a variety of eras, branches, and rank. The heterogeneity of the sample may have adversely impacted treatment. For example, one's chronicity of PTSD, along with the age gap between some of the group members may have impacted a veteran's ability to engage and participate in treatment.

Furthermore, exploring ACT as a treatment for moral injury was one aim of this study. However, upon piloting a standalone moral injury group—study clinicians recognized the difficulty in directly targeting a construct that has multiple definitions and very few validated measures. Therefore, future researchers should first aim to define

moral injury and understand the boundaries of the construct before creating an intervention. Furthermore, the MIES, was effective at quantifying the number of moral injury events, but did not provide information regarding the psychological impact of MIEs. Fortunately, a new assessment on moral injury for military personal has recently been developed, Future researchers should utilize the moral injury-questionnaire military (MIQ-M) in hopes of providing insight into the psychological impact of moral injury within veterans (Currier, Holland, Drescher, & Foy, 2015).

Lastly, future research and clinical trials need to be implemented in order to further assess the effectiveness of ACT for PTSD. Larger clinical trials examining ACT for PTSD have been conducted, however, the data has yet to be published. The publication of previous research will help future researchers refine and adapt existing protocols and research methods. Additionally, stepped-models of care for veterans with PTSD should be explored. Specifically, researchers should examine the longitudinal effects of providing a second line treatment group following completion of a first line treatment for PTSD. It is possible that effective treatment for PTSD requires multiple steps in order to create long-term change.

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APPENDICES

Appendix A

Recruitment Letter

Recruitment Letter

Hi All,

We will be starting an **Acceptance and Commitment Therapy (ACT) group for PTSD & Moral Injury**. In the effort to provide more options for recovery/posttraumatic growth, this group will be restricted to those Veterans who are diagnosed with PTSD or subclinical PTSD resulting from combat or MST. Veterans must be group appropriate without an axis II diagnosis. This will be a closed group that will last between approximately 8 sessions and meets on Tuesdays from 2:00pm to 4:00 for 120 minutes starting on (date). Please also refer to the attached flyer. **All Vets need to be referred to either myself via phone, email, or CPRS.**

ACT is part of the third-wave behavioral therapy and can help veterans gain more psychological flexibility, increase willingness to experience their internal experiences (i.e., thoughts, emotions, sensations), explore values, and live more consistently with their values. ACT uses mindfulness and acceptance strategies to accomplish these goals, therefore, veterans will be led through mindfulness exercises and taught how to increase their willingness to experience unwanted events, emotions, and thoughts. This class is for Veterans who are searching for a more meaningful/purpose driven life and want to learn when and how to apply both aspects of change and acceptance.

When: **Tuesdays 2:00pm to 6:30pm**

Where: **Otter Creek, Bldg 16**

Start date: **XXX**

For more information and/or to refer a veteran please contact either: Brandon Yabko, Ph.D. (ext. 2870) or Ellen Bluett

Appendix B

Measures

Item No.	SESSION #_____ ID #: _____ INTERNALIZED SHAME SCALE
1	I felt like I am never quite good enough.
2	I felt somehow left out.
3	I thought that people looked down on me.
4	I scolded myself and put myself down.
5	I felt insecure about others' opinions of me.
6	Compared to other people, I felt like I somehow never measure up.
7	I saw myself as being very small and insignificant.
8	I felt intensely inadequate and full of self-doubt.
9	I felt as if I am somehow defective as a person, like there is something basically wrong with me.
10	I compared myself to others and felt I am just not as important.
11	I had an overpowering dread that my faults will be revealed in front of others.
12	I saw myself striving for perfection only to continually fall short.
13	I thought that others are able to see my defects.
14	I felt like I could beat myself over the head with a club when I made a mistake.
15	I wanted to shrink away when I made a mistake.
16	I replayed painful events over and over in my mind until I was overwhelmed.
17	At times I felt like I would break into a thousand pieces.
18	I felt as if I had lost control over my body functions and my feelings.
19	Sometimes I felt no bigger than a pea.
20	At times I felt so exposed that I wished the earth would open up and swallow me.
21	I had this painful gap within me that I was not able to fill.
22	I felt empty and unfulfilled.
23	My loneliness was more like emptiness.
24	I felt like there is something missing.

PCL-5

SESSION:_____ ID #: _____

Keeping this worst event in mind, read each of the problems below and then circle one of the numbers to the right to indicate how much you have been bothered by that problem <u>in the past month.</u>

	Not at all	A little bit	Moderate	Quite a bit	Extreme
Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
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
Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
Trouble remembering important parts of the stressful experience?	0	1	2	3	4
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
Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4

	Not at all	A little bit	Moderate	Quite a bit	Extreme
Loss of interest in activities you used to enjoy?	0	1	2	3	4
Feeling distant or cut off from other people?	0	1	2	3	4
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
Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
Being “superalert” or watchful or on guard?	0	1	2	3	4
Feeling jumpy or easily startled?	0	1	2	3	4
Having difficulty concentrating?	0	1	2	3	4
Trouble falling or staying asleep?	0	1	2	3	4

SESSION: _____ ID #: ____

WHO (Five) Well-Being Index (1998 version)

Please indicate for each of the five statements which is closest to how you have been feeling over the last two weeks. Notice that higher numbers mean better well-being.

	Over the last two weeks	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
1	**I have felt cheerful and in good spirits**	5	4	3	2	1	0
2	**I have felt calm and relaxed**	5	4	3	2	1	0
3	**I have felt active and vigorous**	5	4	3	2	1	0
4	**I woke up feeling fresh and rested**	5	4	3	2	1	0
5	**My daily life has been filled with things that interest me**	5	4	3	2	1	0

Example: If you have felt cheerful and in good spirits more than half of the time during the last two weeks, put a tick in the box with the number 3 in the upper right corner.

PHQ-9

SESSION:_____ ID #: _____

Over the last two weeks how often have you been bothered by any of the following problems? Circle one.

1. Little interest or pleasure in doing things

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

2. Feeling down, depressed or hopeless

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

3. Trouble falling or staying asleep or sleeping too much

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

4. Feeling tired or having little energy

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

5. Poor appetite or over eating

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

6. Feeling bad about yourself---or that you are a failure or have let your family down

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

7. Trouble concentrating on things such as reading a newspaper or watching television

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

8. Moving or speaking so slowly that other people have noticed? Or the opposite---being so fidgety or restless that you have been moving around a lot more than usual

0. Not at all	1. Several Days	2. More than half of the days	3. Nearly every day

9. Thoughts that you would be better off dead or hurting yourself in some way?

☐☐ 0. Not at all ☐☐ 1. Several Days ☐☐ 2. More than half of the days ☐☐ 3. Nearly every day

If you checked off *any* problems, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?

☐☐ 0. Not difficult at all ☐☐ 1. Somewhat difficult ☐☐ 2. Very difficult ☐☐ 3. Extremely difficulty

SESSION #:_____ ID #: _____

VQ

Please read each statement carefully and then circle the number which best describes how much the statement was for you DURING THE PAST WEEK, INCLUDING TODAY

1	2	3	4	5	6
Not at all true					Completely true

1. I spent a lot of time thinking about the past or future, rather than being engaged in activities that mattered to me
2. I was basically on "auto-pilot" most of the time
3. I worked toward my goals even if I didn't feel motivated to
4. I was proud about how I lived my life
5. I made progress in the areas of my life I care most about
6. Difficult thoughts, feelings, or memories got in the way of what I really wanted to do
7. I continued to get better at being the kind of person I want to be
8. When things didn't go according to plan, I gave up easily
9. I felt like I had purpose in life
10. It seemed like I was just "going through the motions" rather than focusing on what was important to me

SESSION:_____ ID #: _____

AAQ-II

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true

1.	My painful experiences and memories make it difficult for me to live a life that I would value.	1	2	3	4	5	6	7
2.	I'm afraid of my feelings.	1	2	3	4	5	6	7
3.	I worry about not being able to control my worries and feelings.	1	2	3	4	5	6	7
4.	My painful memories prevent me from having a fulfilling life.	1	2	3	4	5	6	7
5.	Emotions cause problems in my life.	1	2	3	4	5	6	7
6.	It seems like most people are handling their lives better than I am.	1	2	3	4	5	6	7
7.	Worries get in the way of my success.	1	2	3	4	5	6	7

Believability of Anxious Feelings and Thoughts Questionnaire (BAFT)

Imagine the following thoughts occurred to you right now. **How valid or believable would each be to you?** Please use the following scale. For each thought, please circle a number 1 through 7 depending on how believable that thought is to you.

Scale

1	2	3	4	5	6	7	
Not at All Believable							Completely Believable

1 2 3 4 5 6 7	1. _____I need to get a handle on my anxiety and fear for me to have the life I want.
1 2 3 4 5 6 7	2. _____Appearing nervous is not good and causes me to suffer.
1 2 3 4 5 6 7	3. _____I can't really do the things that I want to do when I have anxiety and fear.
1 2 3 4 5 6 7	4. _____I must stay in control of my emotions.
1 2 3 4 5 6 7	5. _____If I were like other people, I would be able to get a grip on my anxious thoughts and feelings.
1 2 3 4 5 6 7	6. _____My anxious thoughts and feelings are a problem.
1 2 3 4 5 6 7	7. _____I am sure to be embarrassed and make a fool of myself when other people notice how nervous and shaky I feel.
1 2 3 4 5 6 7	8. _____Unusual body sensations are scary and something I need to act on to reduce or get rid of before I can do anything else.
1 2 3 4 5 6 7	9. _____My anxious thoughts and feelings are not normal.
1 2 3 4 5 6 7	10. _____Scanning my body for signs and symptoms of anxiety is important to keep me safe.
1 2 3 4 5 6 7	11._____When I am very anxious or afraid there is a good chance that I might be dying.
1 2 3 4 5 6 7	12. _____I could lose control of myself when I feel anxious or afraid.

1 2 3 4 5 6 7 13._____ I must do something about my anxiety or fear when it shows up.

1 2 3 4 5 6 7 14. _____When unpleasant thoughts occur, I must push them out of my mind.

1 2 3 4 5 6 7 15. _____When I feel bad, I must fight the feeling in order to make it go away.

1 2 3 4 5 6 7 16. _____My happiness and success depends on how good I feel.

QUALITY OF LIFE SCALE (QOL)

Please read each item and circle the number that best describes how satisfied you are at this time. Please answer each item even if you do not currently participate in an activity or have a relationship. You can be satisfied or dissatisfied with not doing the activity or having the relationship.

		Delighted	Pleased	Mostly satisfied	Mixed	Mostly dissatisfied	Unhappy	Terrible
1.	Material comforts home, food, conveniences, financial security	7	6	5	4	3	2	1
2.	Health - being physically fit and vigorous	7	6	5	4	3	2	1
3.	Relationships with parents, siblings & other relatives- communicating, visiting, helping	7	6	5	4	3	2	1
4.	Having and rearing children	7	6	5	4	3	2	1
5.	Close relationships with spouse or significant other	7	6	5	4	3	2	1
6.	Close friends	7	6	5	4	3	2	1
7.	Helping and encouraging others, volunteering, giving advice	7	6	5	4	3	2	1
8.	Participating in organizations and public affairs	7	6	5	4	3	2	1
9.	Learning- attending school, improving understanding, getting additional knowledge	7	6	5	4	3	2	1
10.	Understanding yourself - knowing your assets and limitations - knowing what life is about	7	6	5	4	3	2	1
11.	Work - job or in home	7	6	5	4	3	2	1
12.	Expressing yourself creatively	7	6	5	4	3	2	1
13.	Socializing - meeting other people, doing things, parties, etc.	7	6	5	4	3	2	1
14.	Reading, listening to music, or observing entertainment	7	6	5	4	3	2	1
15.	Participating in active recreation	7	6	5	4	3	2	1
16.	Independence, doing for yourself	7	6	5	4	3	2	1

Demographics

Name:_____ **Last 4:**_____ **Today's date:**_____

SOCIAL HISTORY

Current marital status:
☐☐ Married ☐☐ Partnered ☐☐ Separated ☐☐ Divorced ☐☐ Never married ☐☐ Widow(er)ed

Number of previous marriages, if applicable:_____

Number of children:
____ Biological children ____ Step children ____ Adopted children

Housing:
In the past 2 months, have you been living in stable housing that you own, rent, or stay in as part of a household?
☐☐ No ☐☐ Yes

Are you worried that in the next 2 months you may NOT have stable housing that you own, rent, or stay in as part of a household?
☐☐ No ☐☐ Yes. Where have you lived for most of the past 2 months?

☐☐ Apartment/House/Room – no government subsidy
☐☐ Apartment/House/Room – with government subsidy
☐☐ With friend/family
☐☐ Motel/Hotel
☐☐ Short-term institution like hospital, rehab/drug treatment center
☐☐ Homeless shelter
☐☐ Anywhere outside, e.g. street, vehicle, abandoned building
☐☐ Other

Would you like to be referred to talk more about your housing situation?
☐☐ No ☐☐ Yes

EDUCATION

What is the highest level of education you completed?

Level completed: Year completed:

☐☐ Grade school
☐☐ GED
☐☐ High school diploma
☐☐ Professional certificate
☐☐ College without degree
☐☐ Bachelors degree
☐☐ Masters/Doctoral degree

What was your GPA in high school?

☐☐ 3-4 (As and Bs) ☐☐ 2-3 (Bs and Cs) ☐☐ 1-2 (Cs and Ds) ☐☐ 0-1 (Ds and Fs)

Please check if you received the following disciplinary actions in high school:

☐☐ Suspended ☐☐ Expelled
☐☐ Not applicable If you were suspended or expelled, what was the reason?_____

Have you ever been: (check all that apply)

☐☐ Diagnosed with ADHD or ADD ☐☐ Diagnosed with a Learning Disorder
☐☐ Sent to an alternative school ☐☐ Not applicable

MILITARY HISTORY

Branch of service:
☐☐ Air Force
☐☐ Air Force National Guard
☐☐ Air Force Reserve
☐☐ Army
☐☐ Army Reserve
☐☐ Army National Guard
☐☐ Marines
☐☐ Marine Reserve
☐☐ Navy
☐☐ Navy Reserve
☐☐ Coast Guard

Dates of service:

Basic Training location:_____
Date:_____

Advanced Training location:_____
Date:_____

MOS/Rating/AFSC:_____

Primary duty in military:_____

Duty stations and dates:

_____

_____

Combat tour(s):
☐☐ Operation Enduring Freedom
☐☐ Operation Iraqi Freedom
☐☐ Desert Storm
☐☐ Korean War
☐☐ Vietnam War
☐☐ World War II
☐☐ Other:_____

Dates of tours (Month/Year):

Combat unit(s), if applicable:_____

Final rank:____ **Highest rank**: _____

Disciplinary actions in the military:

☐☐ None ☐☐ Court martial

☐☐ Nonjudicial punishment (Article 15, NJP, Captain's/Admiral's mast, Office hours)

Type of discharge:

☐☐ Honorable ☐☐ General ☐☐ Other than honorable

☐☐ Dishonorable ☐☐ Bad Conduct ☐☐ Entry level separation

WORK HISTORY

Current job, if applicable:_____ **Length of time at job:**_____

Number of jobs held since active duty: _____ **Longest time at any one job**:_____

Type of jobs held:_____

Have you ever experienced these work problems?

☐☐ Fired or terminated from a job
☐☐ Written up at work
☐☐ Problems with supervisors or co-workers
☐☐ Not applicable

LEGAL HISTORY

Please check if the following apply to you:

	Pre-military	During military	Post-military
Arrested	☐☐	☐☐	☐☐
Spent time in jail	☐☐	☐☐	☐☐
Spent time in prison	☐☐	☐☐	☐☐
Been on probation	☐☐	☐☐	☐☐

Charged with crime	☐☐	☐☐	☐☐
Convicted of crime	☐☐	☐☐	☐☐
Other legal problems: _____	☐☐	☐☐	☐☐

Are you facing current legal charges or other legal concerns?

☐☐ No ☐☐ Yes. Please describe:_____

If you have experienced past legal issues, please describe:

Charges/Convictions Dates

_____

_____

_____

HEALTH

What health problems (hospitalization, significant illness/injury) did you have:

Prior to the military?

During the military?

After the military?

Please list current medication(s): **Reason(s) taken:**

On average, how many hours of actual sleep do you get per night?_____

Overall, how is the quality of your sleep?
☐☐ Very poor ☐☐ Poor ☐☐ Fair ☐☐ Good ☐☐ Very good ☐☐ Excellent

Do you have sleep apnea?
☐☐ No ☐☐ Don't know ☐☐ Yes. When did it start? _____

Are you currently applying for an increase in service connection?
☐☐ No ☐☐ Yes

Are you currently involved in an appeal of a service connection claim?
☐☐ No ☐☐ Yes

Do you excessively engage in or have trouble controlling any of the following behaviors? (check all that apply)

	Pre-military	During military	Post-military
Gambling	☐☐	☐☐	☐☐
Spending money	☐☐	☐☐	☐☐
Overworking	☐☐	☐☐	☐☐
Eating	☐☐	☐☐	☐☐
Sexual activity	☐☐	☐☐	☐☐
Pornography	☐☐	☐☐	☐☐
Driving recklessly	☐☐	☐☐	☐☐
Thrill-seeking	☐☐	☐☐	☐☐
Other dangerous activities	☐☐	☐☐	☐☐

SUBSTANCE HISTORY

Have you ever smoked or used tobacco in any form?
☐☐ No. SKIP next three questions. ☐☐ Yes

Are you currently using tobacco products?
☐☐ No ☐☐ Yes. Amount: _____. Are you interested in quitting? ☐☐ No ☐☐ Yes

Have you tried to quit smoking or using tobacco products <u>during the past year</u>?
☐☐ No ☐☐ Yes. If yes, did you stop smoking?
☐☐ Yes. Date:_____
☐☐ No

Have you quit smoking or using tobacco products <u>more than one year ago</u>?
☐☐ No ☐☐ Yes. Month:_____ Year:_____

<u>In the past year:</u>

How often did you have a drink containing alcohol?
☐☐ Never ☐☐ Monthly or less ☐☐ 2-4 times a month ☐☐ 2-3 times a week
☐☐ 4-5 times a week ☐☐ 6+ days a week

How many drinks containing alcohol did you have on a typical day when you were drinking?
☐☐ 1 or 2 ☐☐ 3 or 4 ☐☐ 5 or 6 ☐☐ 7 to 9
☐☐ 10 or more ☐☐ Not applicable

How often did you have six or more drinks on one occasion?

☐☐ Never ☐☐ Less than monthly ☐☐ Monthly ☐☐ Weekly
☐☐ Daily or almost daily

Have you enrolled in a substance abuse treatment program at the VA or in a local community?
☐☐ No ☐☐ Yes.
Date(s):_____. Type(s) of treatment:_____

Please check if you have used any of the following substances:

	Pre-military	During military	Post-military
Marijuana	☐☐	☐☐	☐☐
Synthetic cannabis (spice, K2, etc.)	☐☐	☐☐	☐☐
MDMA (ectasy, X, E, XTC)	☐☐	☐☐	☐☐
Cocaine	☐☐	☐☐	☐☐
Methamphetamine	☐☐	☐☐	☐☐
Heroin	☐☐	☐☐	☐☐
LSD/hallucinogens	☐☐	☐☐	☐☐
Medication, not as prescribed	☐☐	☐☐	☐☐
Other:_____	☐☐	☐☐	☐☐

MENTAL HEALTH

Please check any of the following mental health concerns you've experienced:

	Pre-military	During military	Post-military
Depression	☐☐	☐☐	☐☐
Anxiety	☐☐	☐☐	☐☐
Posttraumatic stress disorder (PTSD)	☐☐	☐☐	☐☐
Difficulty controlling anger	☐☐	☐☐	☐☐
Relationship problems	☐☐	☐☐	☐☐
Bipolar mood disorder	☐☐	☐☐	☐☐
Traumatic brain injury	☐☐	☐☐	☐☐
Self-harm	☐☐	☐☐	☐☐
Other:_____	☐☐	☐☐	☐☐

Have you ever had counseling or therapy? (check all that apply)

☐☐ No ☐☐ Yes, pre-military ☐☐ Yes, during military ☐☐ Yes, post-military Please describe reason(s) and date(s)_____

_____

_____

Have you ever taken medication for mental health?

☐☐ No ☐☐ Yes, pre-military ☐☐ Yes, during military ☐☐ Yes, post-military

Please describe reason(s) and Date(s)_____

_____

_____

Have you been hospitalized for mental health?

☐☐ No ☐☐ Yes, pre-military ☐☐ Yes, during military ☐☐ Yes, post-military Please describe reason(s) and date(s)_____

_____

_____

_____

Do members of your family have mental health problems?

☐☐ No ☐☐Yes. Please describe:_____

What, if any, issues do you foresee may make it more difficult for you to regularly participate in treatment?

☐☐ Time constraints (e.g. busy with other life demands)

☐☐ Low motivation

☐☐ Stigma of being treated for psychological issues

☐☐ Confidentiality concerns

☐☐ Forgetting appointments

☐☐ Cost of services/transportation to appointments

☐☐ Other_____

SAFETY

In the last two weeks, how often have you had thoughts you would be better off dead or hurting yourself in some way?

☐☐ Not at all ☐☐ Several days ☐☐ More than half the days ☐☐ Almost every day

Are you feeling hopeless about the present or future?

☐☐ No ☐☐ Yes

Have you had thoughts of taking your life?

☐☐ No ☐☐ Yes. When did you have these thoughts?

_____

Do you have a plan to take your life?

☐☐ No ☐☐ Yes

Have you ever had a suicide attempt?

☐☐ No ☐☐ Yes. Date(s) and method of attempt(s):

_____

Did you do any of these behaviors <u>during the last six months</u>? (check all that apply)

☐☐ Destroyed property

☐☐ Had a physical fight with someone

☐☐ Threatened someone with a weapon

☐☐ Threatened someone with physical violence (without a weapon)

☐☐ Used a weapon against someone

☐☐ Had thoughts of hurting someone

☐☐ Were verbally abusive

☐☐ Broke off contact with someone out of anger or fear of losing control

Moral Injury Event Scale

	Strongly Agree	Moderately Agree	Slightly Agree	Slightly Disagree	Moderately Disagree	Strongly Disagree
(1) I saw things that were morally wrong	**1**	2	3	4	5	6
(2) I am troubled by having witnessed others' immoral acts	**1**	2	3	4	5	6
(3) I acted in ways that violated my own moral code or values	**1**	2	3	4	5	6
(4) I am troubled by having acted in ways that violated my own morals or values	**1**	2	3	4	5	6
(5) I violated my own morals by failing to do something that I felt I should have done	**1**	2	3	4	5	6
(6) I am troubled because I violated my morals by failing to do something that I felt I should have done	**1**	2	3	4	5	6
(7) I feel betrayed by leaders who I once trusted	**1**	2	3	4	5	6
(8) I feel betrayed by fellow service members who I once trusted	**1**	2	3	4	5	6
(9) I feel betrayed by others outside the U.S. military who I once trusted	**1**	2	3	4	5	6
10. I trust my leaders and fellow service members to always live up to their core values	**1**	2	3	4	5	6
(11) I trust myself to always live up to my own moral code	**1**	2	3	4	5	6

SESSION:_____ **ID #:** _____

Please complete the items listed below by placing a checkmark on the line next to each question that best indicates how you feel about the treatment. Please read the items over carefully because a checkmark accidentally placed on one space rather that another may not represent the meaning you intended.

1. I find this treatment to be an acceptable way of dealing with my anxiety.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

2. I liked the procedures used in this treatment.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

3. I believe this treatment is likely to be effective.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

4. I experienced discomfort as a result of the treatment.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

5. I believe this treatment is likely to result in permanent improvement.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

6. I believe it would be acceptable to use this treatment with individuals who cannot choose treatment for themselves.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

7. Overall, I have a positive reaction to this treatment.

_____	_____	_____	_____	_____
strongly disagree	disagree	neutral	agree	strongly agree

SESSION 1

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was general idea of this therapy explained?

YES NO NOT SURE

Was the concept of dropping the shovel covered?

YES NO NOT SURE

Was the goal of therapy (VITALITY) discussed?

YES NO NOT SURE

Were the 3 parts of the triangle discussed (being present, willingness, doing what matters)?

YES NO NOT SURE

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise introduced?

YES NO NOT SURE

Were Values discussed?

YES NO NOT SURE

Was a shovel metaphor introduced?

YES NO NOT SURE

SESSION 3

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise introduced?

YES NO NOT SURE

Was difficulty in controlling emotions covered?

YES NO NOT SURE

Was an example of controlling thoughts or emotions provided?

YES NO NOT SURE

Did we discuss why people try to control emotions?

YES NO NOT SURE

SESSION 4

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise practiced?

YES NO NOT SURE

Was an area of values discussed?

YES NO NOT SURE

Was willingness discussed?

YES NO NOT SURE

Was an exercise for willingness (finger trap) introduced?

YES NO NOT SURE

SESSION 5

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise practiced?

YES NO NOT SURE

Was an area of values discussed?

YES NO NOT SURE

Was willingness reviewed?

YES NO NOT SURE

Was the concept of defusing from thoughts introduced?

YES NO NOT SURE

SESSION 6

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise practiced?

YES NO NOT SURE

Was an area of values discussed?

YES NO NOT SURE

Was defusion reviewed?

YES NO NOT SURE

Were exercises of defusion practiced?

YES NO NOT SURE

SESSION 7

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise practiced?

YES NO NOT SURE

Were committed actions reviewed?

YES NO NOT SURE

Was self- as- context discussed (chessboard)?

YES NO NOT SURE

SESSION 8

SESSION:_____ ID #: _____

Please Circle YES, NO, NOT SURE if the topic was explained today:

Was a mindfulness exercise practiced?

YES NO NOT SURE

Were committed actions reviewed?

YES NO NOT SURE

Was the Passengers on the Bus Exercise practiced?

YES NO NOT SURE

Was the bill of rights reviewed?

YES NO NOT SURE

Demographics

SESSION:_____ ID #: _____

Please answer the following questions:

1. What is your gender? 1=Female 2=Male

2. What is your marital status?
   1=Single 4=Separated
   2=Married 5=Remarried
   3=Divorced 6=Widowed
   7=other

3. What is your age? _____

4. What is your ethnicity/race?
   1=African American
   2=Asian American
   3=Caucasian
   4=Hispanic
   5=Native American
   6=other _____

5. What is your current employment status?
   1=Unemployed/not working
   2=Working part-time
   3=Working full-time (more than 30 hrs/wk)
   4=On disability
   5=Full-time student
   6=Retired

6. What was the last grade of school you completed? What is your highest educational degree?
   1=Ph.D., M.D. (doctoral)
   2=M.A./M.S. or equivalent
   3=Some graduate school
   4=B.A./B.S. or equivalent
   5=Associates Degree
   6=Some college
   7=High school diploma or equivalent
   8=Some high school

7. What is your current religious identification?

1=Catholic
2=Church of Jesus Christ of Latter Day Saints
3=Protestant (Christian) specify:_____
4=Jewish
5=Islam
6=Other: specify_____
7=None

11. Have you ever sought treatment or tried other procedures before? If yes, what did you try?

1= Medication What kind? _____
SRI: 1=No 2= Yes
2= Cognitive Processing Therapy
3= Prolonged Exposure Therapy
4= EMDR
5= Meditation
6= Other:_____

12. Are you taking any psychotropic medications or have you been on any in the past 6 months? If yes, please list with the date you started the most recent dosage.

Appendix C

Figures

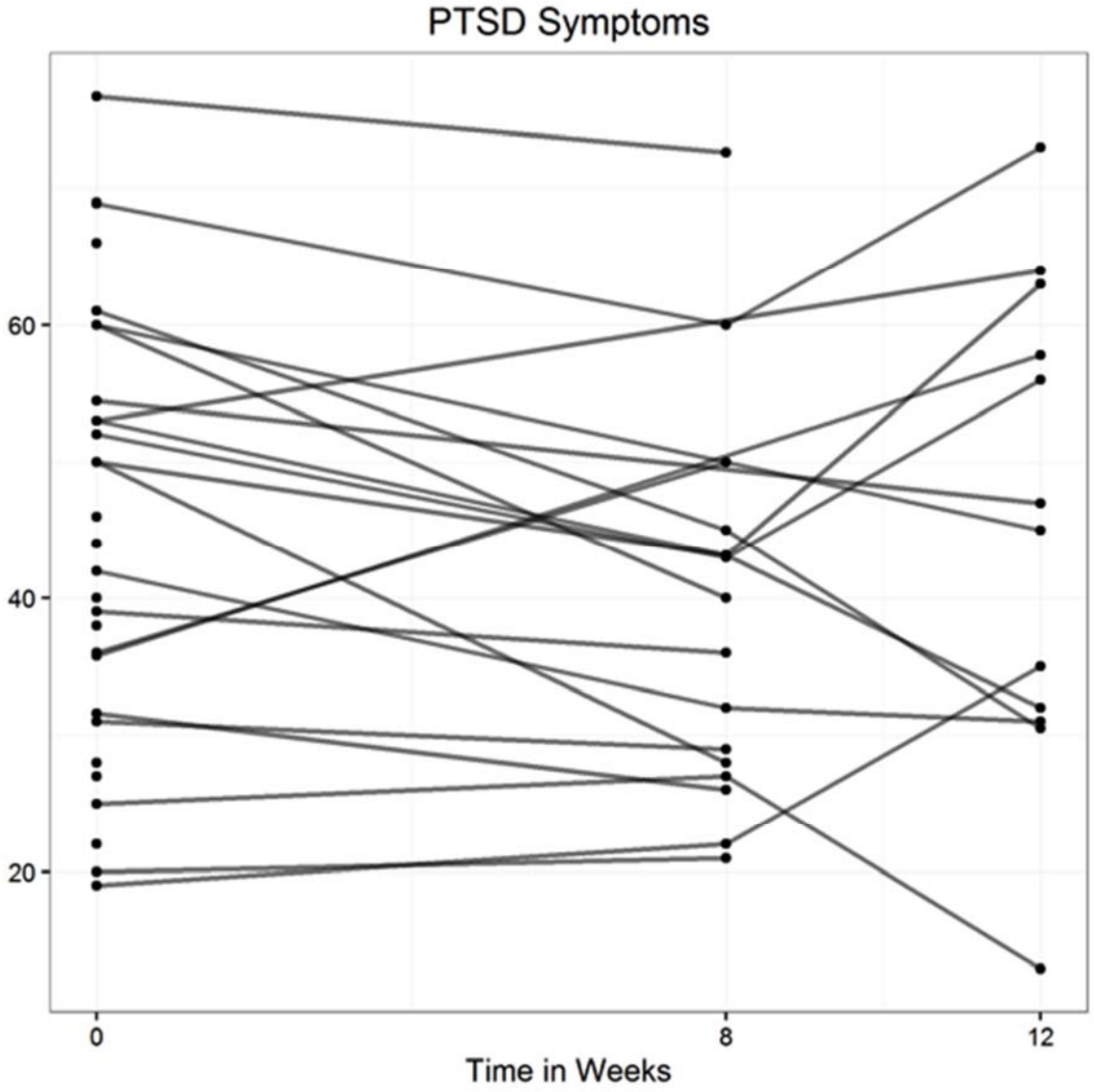

Figure C1. Posttraumatic stress symptom scores.

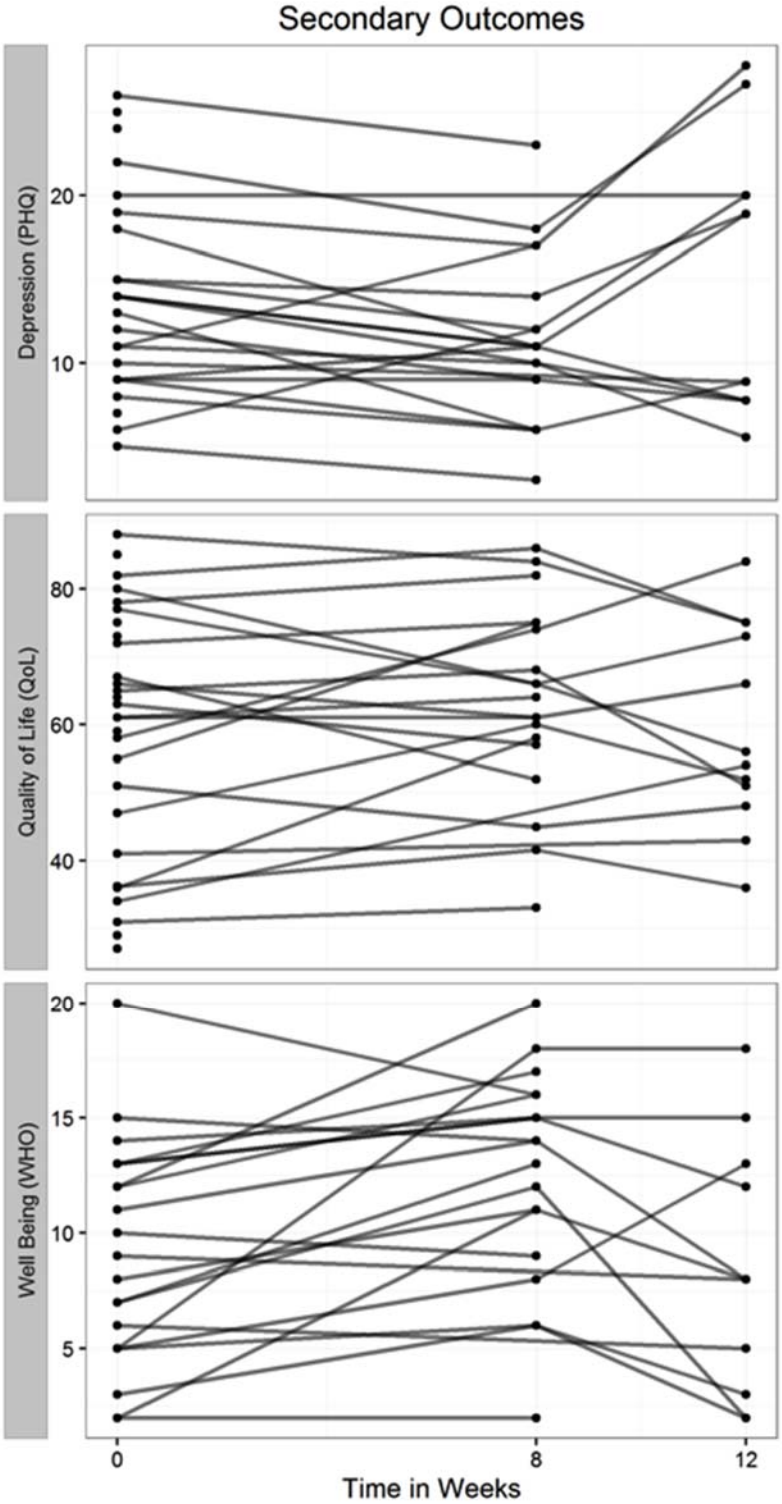

Figure C2. Well-being index and quality of life inventory.

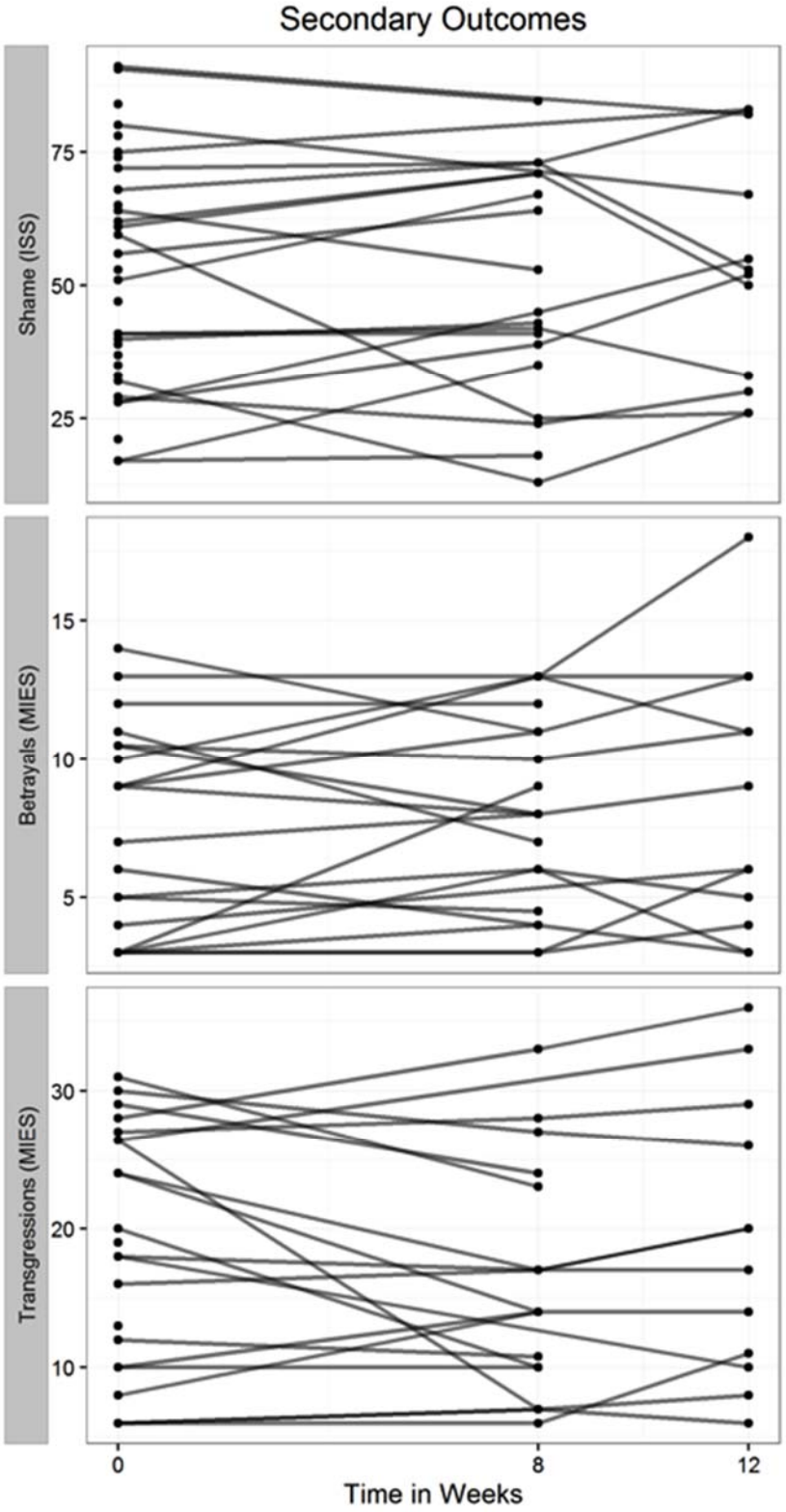

Figure C3. Internalized shame scale and moral injury event scale.

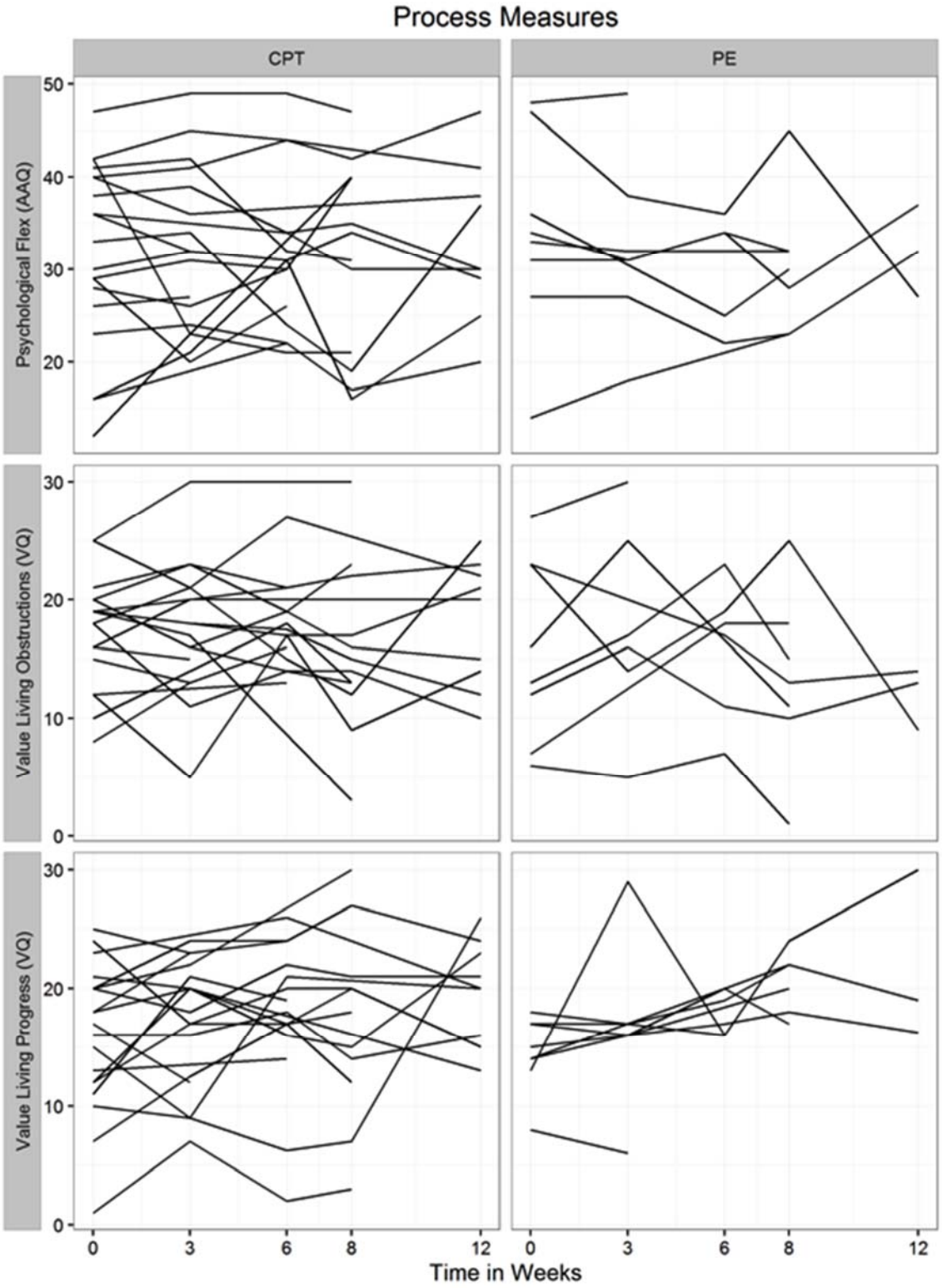

Figure C4. Acceptance and action questionnaire and values questionnaire.

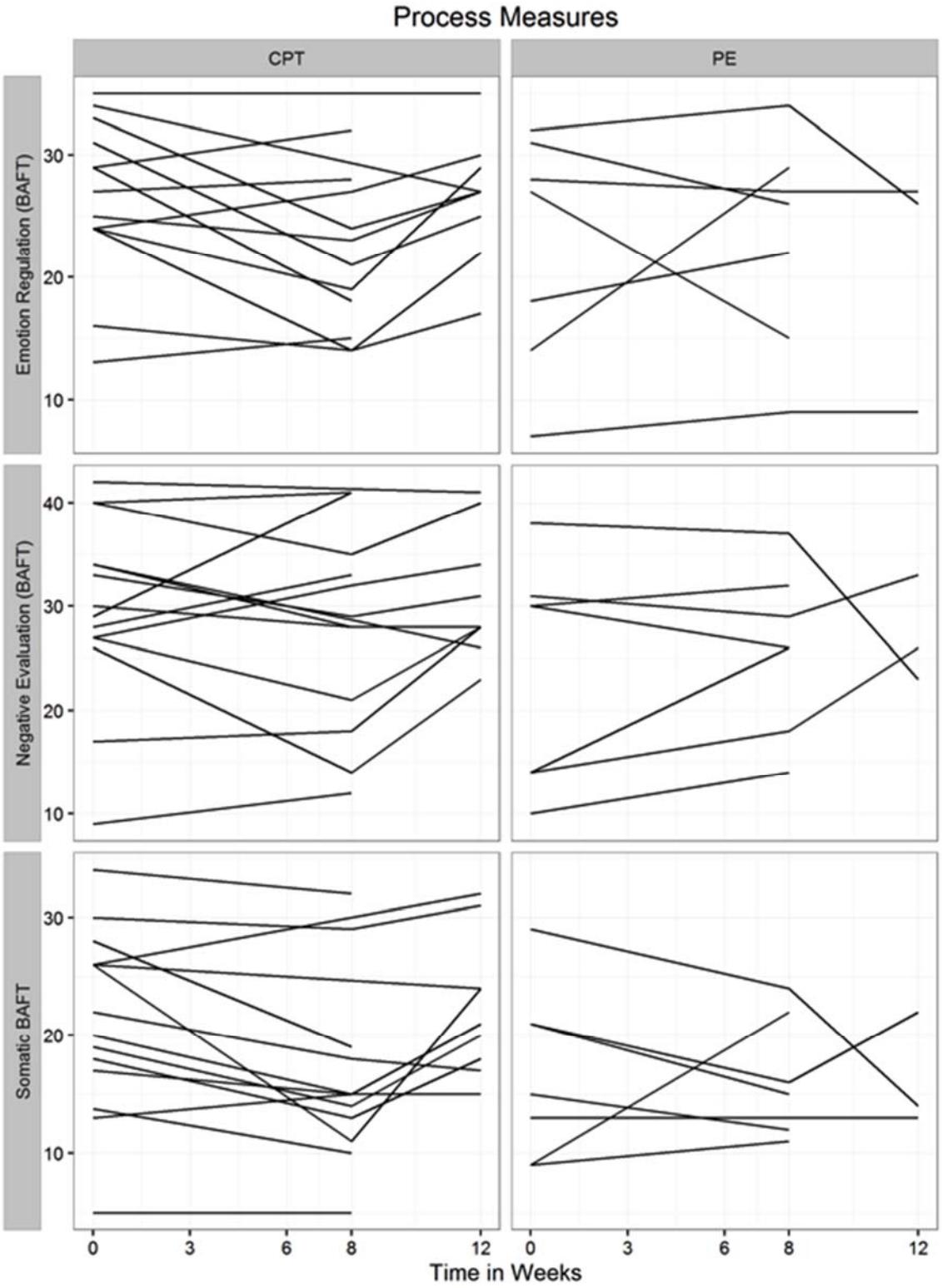

Figure C5. Believability of anxious feelings and thoughts.

CURRICULUM VITAE

ELLEN J. BLUETT, M.S.

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EDUCATION

Ph.D. (anticipated 8/16)	**Utah State University**, *Logan, UT* Combined Clinical/Counseling/School Psychology (APA accredited)
	Dissertation: Effectiveness of Acceptance and Commitment Therapy for Posttraumatic Stress Disorder *Chair:* Michael Twohig, Ph.D.
M.S. October 2013	**Utah State University**, *Logan, UT* Combined Clinical/Counseling/School Psychology (APA accredited)
	Thesis: Does the presentation of exposure exercises matter? Comparing fear reduction vs fear toleration *Chair:* Michael Twohig, Ph.D.
B.S. 2008	**University of Vermont**, *Burlington, VT* Bio-behavioral Psychology

RESEARCH EXPERIENCE

12/14 – 05/16	**Clinical Research Coordinator** **Salt Lake City Veterans Affairs** *Salt Lake City, UT* Develop and implement and effectiveness treatment trial for posttraumatic stress and posttraumatic growth. *Responsibilities:* Design, coordinate, and co-facilitate a weekly psychotherapy group for veterans using Acceptance and Commitment Therapy; patient recruitment; data collection; data management; weekly group psychotherapy; follow-up assessments; and case consultation.

Supervisors: Michael Twohig, Ph.D. & Brandon Yabko, Ph.D.

09/12 – 05/14 **Clinical Research Coordinator**
Avalon Hills Residential Treatment Center for Eating Disorders
Logan, UT
Manage ongoing data assessment and collection of individuals receiving treatment at Avalon Hills.
Responsibilities: Data management, including tracking residents' admissions and discharge data; data entry; organize IRB submissions; analyze data using SPSS. Published two peer-reviewed manuscripts.
Supervisors: Michael Twohig, Ph.D. & Whitney Matson. M.B.A.

09/11 – Present **Graduate Research Assistant**
Center for Clinical Research
Logan, UT
Design, administer, and analyze clinical research using Acceptance and Commitment Therapy for the treatment of anxiety disorders in adults.
Responsibilities: Administer psycho-diagnostic assessments; database management; provide psychotherapy; and recruitment. Specializing in specific populations including: OCD, PTSD, and Social Anxiety. Over the past five years, coordinate a large randomized controlled trial for the treatment of Obsessive-Compulsive Disorder.
Supervisor: Michael Twohig, Ph.D.

07/09 – 05/11 **Research Coordinator**
Center for Anxiety and Traumatic Stress
University of Washington, Seattle, WA
Research Coordinator for Optimizing Treatment for PTSD
(2 R01 MH066347-06)
Coordinate an NIMH-funded double randomized, treatment preference trial, investigating the (1) role of choice, (2) effects of combined psychotherapy and pharmacological treatment for PTSD, and (3) presence of co-occurring major depression with posttraumatic stress disorder in trauma survivors.
Responsibilities: Managed a large-scaled clinical trial; coordinated all aspects of participant recruitment and tracking; data management and analysis (SPSS); organized IRB submissions; SCID training; and completed intensive Prolonged Exposure Therapy training with Dr. Edna Foa.
Supervisor: Lori A. Zoellner, Ph.D.

07/09 – 05/11 **Research Coordinator**
Center for Anxiety and Traumatic Stress,
University of Washington, Seattle, WA
Research Coordinator for Helping Extinction Learning in PTSD
(1 R34 MH087375-01)
Coordinate an NIMH-funded study investigating the role of an experimental drug aimed at enhancing learning during exposure-based treatment for PTSD.
Responsibilities: Managed a large-scale clinical trial; organized IRB submissions; coordinated all aspects of participant recruitment and tracking; and managed database entry and analysis.
Supervisor: Lori A. Zoellner, Ph.D.

08/07 – 06/08 **Undergraduate Research Assistant**
Anxiety and Health Research Lab
University of Vermont, Burlington VT
Research Assistant for Anxiety Sensitivity and Unexpected Panic Attacks
An NIMH-funded study investigating anxiety sensitivity, non-clinical panic- attack history and panic vulnerability, using a CO_2 challenge procedure.
Research Assistant for Smoking Based Prevention Program for Panic
An NIMH-funded, multi-site randomized controlled trial investigating the role of reducing smoking behavior and increasing anxiety sensitivity as a means to decrease the risk for onset of panic disorder.
Responsibilities: Coordinated participant recruitment; completed data collection and entry; assisted in running participants through CO_2 inhalation task; and conducted clinical phone screens and scheduling.
Supervisor: Michael Zvolensky, Ph.D.

01/08 – 06/08 **Undergraduate Research Assistant**
Mark Bouton Research Laboratory, University of Vermont, Burlington, VT
Organized and ran a study on non-monotonic learning; ran experiment that investigated the presence of a non-monotonic, variable or changing, learning curve in rat behavior according to the context and presence of a particular conditioned stimulus.
Responsibilities: Prepared animals; assisted in running daily experiment; monitored experiment during sessions; collected and organized data; and scored and coded behavior in rats.
Supervisor: Mark Bouton, Ph.D.

CLINICAL EXPERIENCE

06/15 – 05/16 **Psychology Practicum Student**
Posttraumatic Stress Disorder Clinical Team
George E. Wahlen Department of Veterans Affairs Medical Center
Salt Lake City, UT
Design and implement an effectiveness treatment trial for veterans with PTSD. Conduct psychotherapy in a group setting for veterans who have completed an evidenced-based practice for PTSD and remain symptomatic.
Responsibilities: Co-lead weekly group therapy sessions for Posttraumatic Stress Disorder utilizing Acceptance and Commitment Therapy; patient recruitment; and data collection and management.
Supervisors: Brandon Yabko, Ph.D. & Jim Asbrand, Ph.D.

03/15 – 05/16 **Psychology Practicum Student**
VITAL Rotation
George E. Wahlen Department of Veterans Affairs Medical Center
Salt Lake City, UT
Conduct cognitive and academic assessment as part of a team supporting academic success of undergraduate student veterans of all eras. Primary assessment referral questions include learning disorder, ADHD, and memory complaints.
Responsibilities: Conduct psycho-diagnostic assessments; intellectual assessment; achievement assessment; ADHD assessment; integrated assessment report writing; develop recommendations for treatment and academic accommodations; and provide feedback and recommendations to student veterans and other primary referrals.
Supervisor: Aaron Ahern, Ph.D.

03/15 – 12/16 **Psychology Practicum Student**
Center for Persons with Disabilities
Logan, UT
Participate in diverse clinical experiences on an inter-disciplinary team. *Responsibilities:* Conduct psycho-diagnostic intake interviews of children, adolescents, and adults; provide comprehensive evaluations including assessment of learning disabilities, behavior problems, autism spectrum disorder, social security disability; integrated report writing, case management, feedback sessions; and case presentation and discussion in interdisciplinary team consultation with speech and language pathologists, physicians, and nurses.
Supervisor: Martin Toohill, Ph.D.

08/14 – 05/15 **Psychology Practicum Student**
Posttraumatic Stress Disorder Rotation
George E. Wahlen Department of Veterans Affairs Medical Center
Salt Lake City, UT
Conduct weekly psycho-diagnostic assessments, individual therapy, and treatment planning for trauma exposed veterans.
Responsibilities: Conduct psycho-diagnostic assessment including the PCL-5, PHQ-9, and Life Events Checklist for military-related PTSD with veterans from Vietnam, Persian Gulf, and OEF/OIF; crisis intervention; organizing the open clinic weekly; individual psychotherapy; and individual supervision.
Supervisor: Jinna Lee, Ph.D.

08/14 – 08/15 **Graduate Clinical Assistant**
Avalon Hills Residential Eating Disorder Facility
Logan, UT
Provide individual and group psychotherapy to adult and adolescent females in a residential treatment facility for eating disorders.
Responsibilities: Conduct ACT, DBT, Recovery Maintenance, Spirituality didactic groups; facilitate process and body-image groups; individual psychotherapy; organize and conduct experiential exercises; participate in weekly multi-disciplinary team meetings, attend daily rounds; and conduct neuropsychological assessments.
Supervisor: Tera Lensgrav-Benson, Ph.D.

08/13 – 05/2014 **Psychology Practicum Student**
Utah State Student Health Center
Primary Care Clinic
Logan, UT
Conduct psycho-diagnostic assessments and provide focused, brief-interventions in primary care setting.
Responsibilities: Conduct intakes, evaluations, one-time consults and treatment plans; provide time-limited individual therapy; consultation with physicians and nurses in a multi-disciplinary primary care setting; and group counseling in Acceptance and Commitment Therapy for healthy lifestyles.
Supervisor: Scott Deberard, Ph.D.

08/12 – 06/2013 **Integrative Psychology Practicum**
Utah State Psychology Community Clinic
Logan, UT
Provide individual therapy and assessments to children, adolescents, adults.

Responsibilities: Conduct intake interviews, evaluations, assessment and diagnosis with child, adolescent, and adult community population; provide ongoing individual psychotherapy supported by weekly supervision; group supervision; and didactic training.
Supervisors: Susan Crowley, Ph.D. & Gretchen Gimpel-Peacock, Ph.D.

08/11 – Present **Clinical Research Assistant & Therapist**
Center for Clinical Research
Logan, UT
Conduct individual therapy and assessments as part of a large randomized controlled trial for the treatment of Obsessive-Compulsive Disorder (OCD).
Responsibilities: Administer psycho-diagnostic assessments including the
Y-BOCS and MINI for OCD; provide individual psychotherapy including Acceptance and Commitment Therapy and Exposure and Response Prevention for OCD; weekly supervision; and case consultation across sites.
Supervisors: Michael Twohig, Ph.D. & Jonathan Abramowitz, Ph.D.

09/12 – 12/2013 **Clinical Research Coordinator**
Center for Clinical Research
Logan, UT
Design and implement a clinical research study assessing the mechanisms of change in exposure therapies for socially anxious college students.
Responsibilities: Develop treatment manual; provide brief exposure-based psychotherapy; provide referrals; and manage clinical research.
Supervisors: Michael Twohig, Ph.D.

PEER-REVIEWED PUBLICATIONS

1. **Bluett, E. J.,** Landy*, L. L., Twohig, M. P., & Arch, J. J. (2016). Does the Theoretical Perspective of Exposure Framing Matter? Acceptance, Fear Reduction/Cognitive Reappraisal, and Values-Framing of Exposure for Social Anxiety. *Journal of Cognitive Psychotherapy*, *30*(2), 77-93.
*denotes co-first authorship

2. Ong, C. W., Clyde, J. W., **Bluett, E. J.,** Levin, M. E., & Twohig, M. P. (2016). Dropout rates in exposure with response prevention for obsessive-compulsive disorder: What do the data really say? *Journal of Anxiety Disorders, 40*, 8-17.

3. Loerinc, A. G., Meuret, A. E., Twohig, M. P., Rosenfield, D., **Bluett, E. J**., & Craske, M. G. (2015). Response rates for CBT for anxiety disorders: Need for standardized criteria. *Clinical Psychology Review, 42,* 72-82.

4.Twohig, M. P., **Bluett, E. J**., Cullum, J. L., Mitchell, P. R., Powers, P. S., Lensegrav-Benson, T., & Quakenbush-Roberts, B. (2015). Effectiveness and clinical response rates of a residential eating disorders facility. *Eating Disorders: The Journal of Treatment and Prevention*,1-16.

5. Arch, J. J., Twohig, M. P., Deacon, B., Landy, L. N., & **Bluett, E. J.** (2015). The credibility of exposure therapy: Does the theoretical rationale matter? *Behaviour Research and Therapy*. *72*, 81-92.

6.Twohig, M. P., Abramowitz, J. A., **Bluett, E. J**., Fabricant, L., Jacoby, R. J., Morrison, K. L., Reuman, L., & Smith, B. (2015). Exposure therapy for OCD from an acceptance and commitment therapy (ACT) framework. *Journal of Obsessive Compulsive and Related Disorders, 6,* 167-173.

7. Twohig, M. P., **Bluett, E. J**., Torgesen, J. G., Lensegrav-Benson, T., & Quakenbush-Roberts, B. (2015). Who seeks residential treatment? A report of patient characteristics, pathology, and functioning in females at a residential treatment facility. *Eating Disorders: The Journal of Treatment & Prevention*, *23*(1),1-14.

8**. Bluett, E. J**., Homan, K. J., Morrison, K. L., Levin, M. E., & Twohig, M. P. (2014). Acceptance and commitment therapy for anxiety and OCD spectrum disorders: An empirical review. *Journal of Anxiety Disorders*, *28*(6), 612-624.

9**. Bluett, E. J**., Zoellner, L. A., & Feeny, N. C. (2014). Does change in distress matter? Mechanisms of change in prolonged exposure for PTSD. *Journal of Behavior Therapy and Experimental Psychiatry, 45*(1)*,* 97-104.

10. Twohig, M. P, Morrison, K. L., & **Bluett, E. J.** (2014). Acceptance and commitment therapy for obsessive compulsive disorder and obsessive compulsive spectrum disorders: A review. *Current Psychiatry Reviews, 10*(4), 296-307.

INVITED CHAPTERS

11. Twohig, M. P., **Bluett, E. J.,** Morrison, K. L., & Woidneck, M. R. (2014). Habit reversal.In S.G. Hofmann (Ed.). *Cognitive behavioral therapy: A complete reference guide*. (pp.203-222). Wiley-Blackwell: West Sussex UK.

12. Smith, B. M., **Bluett, E. J.,** Lee, E. B., & Twohig, M. P. (submitted). Acceptance and commitment therapy for OCD. In J. S. Abramowitz, D. McKay, & E. Storch (Eds.) *Handbook of Obsessive Compulsive Disorders Across the Lifespan.* Hoboken, NJ: Wiley.

MANUSCRIPTS IN SUBMISSION

13. Zoellner, Lori A., Telch, Michael J., Foa, Edna, B., Farach, F. J., McLean, C. P., Gallop, R., **Bluett, E. J.,** Cobb, A., Gonzalez-Lima, F. (2016). Enhancing extinction learning in PTSD with brief daily imaginal exposure and methylene blue. Manuscript submitted for publication.

14. Bluett, E. J., Lee, E. B., Simone, M., Lockhart, G., Lensegrav-Bensen, T., Quakenbush-Roberts, B. Twohig, M. P., (revise and resubmit). The role of body image psychological flexibility on the treatment of eating disorders in a residential facility. Eating Behavior.

PROFESSIONAL PRESENTATIONS

Ong, C. W., Clyde, J. W., **Bluett, E. J.,** Levin, M. E., & Twohig, M. P. (2016, October). Dropout rates in exposure with response prevention for obsessive-compulsive disorder: A meta-analytic review. Poster presented at the 50th annual convention of the Association for Behavioral and Cognitive Therapies, New York, NY.

Lee, E. B., **Bluett, E. J.,** Ong, C. W., Lockhart, G., Twohig, M. P., Lensegrav-Bensen, T., Quakenbush-Roberts, B. (June 2016). *Psychological Flexibility as a Predictor of Quality of Life and Eating Disorder Risk in a Residential Treatment Setting.* Presented at the 14th Annual Association for Contextual Behavioral Science World Conference, Seattle, WA.

Richards, S. M., Deberard, M. S., Potts, S., Wanzek, J., **Bluett, E. J.,** & Homan, K. J. (2015, April). *Lifestyle intervention in emerging young adulthood: A brief acceptance-based behavioral intervention for young adults*. Poster presented at the annual meeting of the Society of Behavioral Medicine, San Antonio, TX.

Bluett, E. J., Homan, K. J., Morrison, K. L., Levin, M. E., & Twohig, M. P. (2014, November). *Psychological flexibility and anxiety disorders: A meta-analysis*. Paper presented at the 48th Annual Convention meeting of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Bluett, E. J., Twohig, M. P., Matson, W., Lensegrav-Benson, T., & Quakenbush-Roberts. (2014, June). *Efficacy and clinical response rates of a residential eating disorders facility.* Paper presented at the annual World Conference of the Association for Contextual Behavioral Science (ACBS), Minneapolis, Minnesota.

Abramowitz, J. S., Berry, B. M., **Bluett, E. J.,** Fabricant, L., Jacoby, R. J., Morrison, K. L., & Twohig, M. P. (2013, November). *Predictors of OCD symptom dimensions: Obsessional beliefs and experiential avoidance*. Symposium presented at the 47th annual convention of the Association for Behavioral and Cognitive Therapies, Nashville, TN.

Arch, J., Deacon, B., Twohig, M. P., **Bluett, E**., Landy, L. (2013, November). *Impact of ACT vs CBT rationale for exposure therapy*. Paper presented at the 47th Annual Convention meeting of the Association for Behavioral and Cognitive Therapies, Nashville, TN.

Bluett, E. J., Landy, L. L., Twohig, M. P., Arch, J. A. (2013, November). *Does exposure framing matter? Comparing models of exposure in a brief intervention for social anxiety*. Paper presented at the 47th Annual Convention of the Association of Behavioral and Cognitive Therapies, Nashville, TN.

Bluett, E. J., Landy, L. L., Twohig, M. P., Arch, J. A. (2013, September). *Does exposure framing matter? Comparing models of exposure in a brief intervention for social anxiety*. Symposium presented for the 1st Annual Convention of the Association of Contextual and Behavior Science Regional Conference, Golden, CO.

Zoellner, L., **Bluett, E. J.,** & Feeny, N. C. (2013, July). *Is fear reduction necessary during imaginal exposure in prolonged exposure therapy for PTSD mechanisms?* Invited Address for the 56th Division of the American Psychological Association Annual Convention, Honolulu, HI.

Twohig, M., Abramowitz, J., Fabricant, L., Morrison, K., & **Bluett, E.** (2012, July). *Combining Acceptance and Commitment Therapy with Exposure and Response Prevention to enhance the treatment of OCD*. Poster presented at the annual conference of the International OCD Foundation, Chicago, IL.

Bluett, E. J., Zoellner, L., & Feeny, N. C. (2010, June). *Mechanisms underlying exposure therapy for chronic PTSD: Between-session habituation and distress tolerance*. Poster submitted for the 6th Annual Convention of the World Congress of Behavioral and Cognitive Therapies, Boston, MA.

Bluett, E. J., Zoellner, L. A., & Feeny, N. C. (2010, November). Homework adherence: A possible moderator for between-session habituation and treatment outcome in exposure therapy for chronic PTSD. Poster submitted for the 44th Annual Convention of the Association of Behavioral and Cognitive Therapies, San Francisco, CA.

Chen, J., Jun, J., **Bluett, E. J.,** & Zoellner, L. A. (2010, November). Emotional numbing takes its toll on recall in individuals with PTSD. Poster submitted for the 44th Annual Convention of the Association of Behavioral and Cognitive Therapies, San Francisco, CA.

PEER REVIEW

04/2015	Journal of Contextual Behavioral Science
12/2014	Journal of Obsessive Compulsive and Related Disorders
10/2014	Cognitive and Behavioral Practice
05/2014	Cognitive and Behavioral Practice
10/2011	Behaviour Research and Therapy

SUBMITTED GRANTS

Title: A Test of Acceptance and Commitment Therapy for Marijuana Dependence & PTSD
Date submitted: March 2012 (unfunded)
Dates: 10/12 - 09/16
Amount of Award: $1,166,880 (Direct Costs)
Funding Source: VA Clinical Science Research and Development (CSR&D)
Role: Assist with submission.

TEACHING EXPERIENCE

02/2015	Abnormal Psychology Guest Lecturer: Eating Disorders Utah State University
05/2012	Psychology 1010 General Psychology Guest Lecturer: Yoga and Psychology Utah State University
04/2012	Psychology 3050 Guest Lecturer: Randomized Controlled Trials Utah State University
Fall 2011 Spring 2012	Graduate Teaching Assistant PSY 1010: General Psychology, Utah State University, Planned, taught, and managed lab sections; held regular office hours; graded tests and written assignments; collaborated with professor and other teaching assistants; lectured in professors' absence; provided additional support for students as necessary. *Supervisors*: Scott Bates, Ph.D. & Jennifer Grewe, Ph.D.

PROFESSIONAL DEVELOPMENT TRAINING

May 2016 From Cancer to Health
Presenter: Barbara Andersen, Ph.D
Columbus, Ohio

June 2014 Relational Frame Theory in Clinical Practice
Presenters: M. Villatte, Ph.D.; Sonja Batten, Ph.D.
Minneapolis, MN

February 2014 Acceptance and Commitment Therapy Bootcamp
Presenters: Steven Hayes, Ph.D.; Kelly Wilson, Ph.D.; Kirk Stroshal, Ph.D.
Reno, NV

September 2013 Veterans Yoga Project
Presenter: Daniel Libby Ph.D.
Feathered Pipe Foundation, Helena, MT

February 2013 Cultural Competence Training
Presenter: Michael P Twohig, Ph.D., Melanie Domenech-Rodriguez, Ph.D.
Utah State University, Logan, UT

September 2012 Acceptance and Commitment Therapy Experiential Workshop
Presenter: Michael P Twohig, Ph.D.
Utah State University, Logan, UT

October 2013 "Mindfulness & DBT"
Presenter: Marsha Linehan, Ph.D.
FACES conferences, Seattle, WA

October 2013 "The Art & Science of Mindfulness: Integrating Mindfulness into Psychotherapy"
Presenter: Shauna Shapiro, Ph.D.
FACES conferences, Seattle, WA

October 2013 "Mindfulness & Self Compassion"
Presenter: Kristin Neff, Ph.D.
FACES conferences, Seattle, WA

July 2012 "The Compassionate Use of Exposure Strategies in ACT"
Presenter: John Forsyth, Ph.D.
Association for Contextual Behavioral Science World Conference, Baltimore, MD

October 2010 Prolonged Exposure for the Treatment of PTSD (3-day training)
Presenter: Edna D. Foa, Ph.D.
Case Western Reserve University, Cleveland, OH

HONORS AND AWARDS

2015 Dissertation Fellowship Award ($5,000), Utah State University, School of Graduate Studies

2013 Walter Borg Research Scholarship ($3,200), Utah State University, Department of Psychology

2011 – 2014 Krantz Research Award ($420), Utah State University, Department of Psychology

2011 – 2014 Graduate Student Senate Travel Award ($300), Utah State University

2004 – 2008 Presidential Scholarship University of Vermont

PROFESSIONAL ASSOCIATIONS

Association for Contextual Behavioral Science (ACBS), Student Member
Association for Behavioral and Cognitive Therapies (ABCT), Student Member
American Psychological Association (APA) – Division 12, Student Member
Society for Behavioral Medicine (SBM), Student Member