Effects of Writing Therapy across PTSD and Chronic Stress

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EFFECTS OF WRITING THERAPY ACROSS
PTSD AND CHRONIC STRESS

by

Jennifer E. Lewis

A Dissertation
Submitted to the
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Jennifer E. Lewis
EFFECTS OF WRITING THERAPY ACROSS PTSD AND CHRONIC STRESS

Jennifer E. Lewis, Ph.D.
Western Michigan University, 2003

Research supports the effectiveness of writing therapy in reducing physical health problems and increasing positive feelings (Pennebaker & Beall, 1986). More recently, research indicates that writing about traumatic experiences is as effective as EMDR in reducing symptoms of Post Traumatic Stress Disorder (Largo-Marsh & Spates, 1997). The current study assessed the treatment efficacy of writing therapy for individuals with varying degrees of stress related symptoms. Specifically, this study examined writing treatment for Post-Traumatic Stress Disorder and work-related chronic stress or "burnout."

The study utilized a pretest–posttest comparison group design. Repeated measurements on primary dependent variables were collected at pretest through 2-month follow-up.

Assessment instruments included the Maslach Burnout Inventory (MBI), the Clinician Administered PTSD Scale for DSM-IV (CAPS-DX), the State-Trait Anxiety Inventory (STAI- State), Subjective Units of Distress rating (SUDs), Beck Depression Inventory-II (BDI-II), Coping Resources Inventory (CRI), and Health Care Visits Questionnaire.
Subjects were assigned to participant groups based upon their scores on the Clinician Administered PTSD Scale (CAPS-DX) and the Maslach Burnout Inventory (MBI). Treatment consisted of four weekly sessions, each 30 minutes in duration. The structured writing treatment was targeted at the traumatic event or stressful work situation identified as most presently distressing. A total of 16 participants completed the study through 2-month follow-up with 8 participants in each group.

Results of this study indicated that participants in the Burnout condition showed significant decreases in symptom reports of depression as measured by the Beck Depression Inventory-II. These gains were maintained through 2-month follow-up. Participants in the PTSD group showed no significant improvement on any dependent measures. However, moderate to large effects sizes were found for these analyses, suggesting that an increased sample size may have resulted in the detection of significant improvements in symptom reports across all dependent measures for both conditions.

The main limitation of this study was the small sample size. The study suffered from both difficulties recruiting participants as well as attrition. Recommendations for future research in this area include monetary incentive for participation. This research is best viewed as a pilot study, the results of which warrant further investigation.
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CHAPTER I
INTRODUCTION

Research indicates that 60% of men and 51% of women in the general population reported at least one traumatic event at some point in their lives (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Although not everyone who experiences a traumatic event will develop Post-Traumatic Stress Disorder (PTSD), lifetime rates of the disorder vary across studies from 1% to 12.3% of the population (Breslau, Davis, Andreski, & Peterson, 1991; Kessler et al., 1995; Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). These numbers represent people who have (a) come into contact with mental health professionals, and who (b) meet full criteria for the disorder. Not represented are those who have experienced a traumatic incident but never seek help or who have any number of distressing symptoms, but do not meet full criteria for PTSD. One recent study found that rates for partial PTSD following a traumatic event in a random sample of people in a midsize Canadian city were 3.4% for women and 0.3% for men (Stein, Walker, Hazen, & Forde, 1997).

Although no epidemiological studies have reported on the health care costs associated with PTSD, evidence suggests the disorder is quite costly. Greenberg, Sisitsky, and Kessler (1999) used data from the National Comorbidity Study and estimated that the cost associated with anxiety disorders to be approximately $63.1 billion. The researchers reported that the greatest cost to society was that of direct
nonpsychiatric medical treatment costs which accounted for 54% of the total. This research indicated that direct psychiatric treatment cost accounted for an additional 31%, suggesting that undiagnosed or misdiagnosed patients contribute significantly to the burden on the economy. Of particular note, this study found that PTSD and panic disorder had the highest rates of service utilization of both direct psychiatric medical service utilization (hospitalizations, visits to family doctors, psychiatrists, psychologists, social workers, counselors, and other specialists) and indirect workplace outcomes (work cutback days) (Greenberg et al., 1999).

Based on the number of people affected and the cost to society, it is obvious that the sequelae of trauma remain an important area for continued research. Although many treatments for symptoms of PTSD are currently available, no single treatment has proven effective in reducing all symptom clusters related to the disorder. To date, exposure based therapies, those in which a person is asked to repeatedly recall the trauma in detail, have proven most effective in overall symptom reduction (Waller, Cullen, & Spates, 1997). Research on the effectiveness of writing about traumatic events showed reductions in physical health problems as well as increasing feelings of general well-being (Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Smyth, Stone, Hurewitz, & Kaell, 1999). More recently writing treatment has been shown to reduce symptoms of PTSD as well (Largo-Marsh & Spates, 1997). The current study is designed to assess the treatment efficacy of writing therapy for individuals with varying degrees of stress-related symptoms including clinical Post-Traumatic Stress Disorder as well as chronic stress or burnout.
CHAPTER II

REVIEW OF THE LITERATURE

Post-Traumatic Stress Disorder

Diagnostic Criteria

According to the DSM-IV (American Psychiatric Association [APA], 1994) the criteria for diagnosis of Post-Traumatic Stress Disorder are as follows:

A. The person has been exposed to a traumatic event in which both of the following were present:

   (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.

   (2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior.

B. The traumatic event is persistently re-experienced in one (or more) of the following ways:

   (1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
(2) recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.

(3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated).

Note: In young children, trauma-specific reenactment may occur.

(4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

(5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

(1) efforts to avoid thoughts, feelings, or conversations associated with the trauma.

(2) efforts to avoid activities, places or people that arouse recollections of the trauma.

(3) inability to recall an important aspect of the trauma.

(4) markedly diminished interest or participation in significant activities.

(5) feelings of detachment or estrangement from others.

(6) restricted range of affect (e.g., unable to have loving feelings).
(7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children or a normal life span).

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

(1) difficulty falling or staying asleep.

(2) irritability or outbursts of anger.

(3) difficulty concentrating.

(4) hypervigilance.

(5) exaggerated startle response.

E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than 3 months.

Chronic: if duration of symptoms is 3 months or more.

Specify if:

With delayed onset: if onset of symptoms is at least 6 months after the stressor.
Prevalence of Traumatic Events

A number of studies have documented the occurrence of traumatic events across the lifespan. In a national probability study of 4,008 adult females, participants were administered a modified version of the Diagnostic Interview Schedule (DIS) (Robbins & Smith, 1983) that included a detailed assessment of trauma. (Resnick et al., 1993). The study revealed that 68.9% of the sample reported having experienced one or more of the following events during their lifetime: rape, molestation or attempted sexual assault, physical assault, homicide of a close friend or relative, and non crime traumatic events (including natural disasters, serious accidents, serious injuries, life-threatening situations, events involving perceived life threat or threat of serious injury, and any other “extraordinarily stressful event”).

More recently, Kessler et al. (1995) interviewed nearly 6,000 people, aged 15 to 54, in the only nationally representative study of the general population in the United States. A modified version of the DIS was used in this study as well. Results indicated that 60% of men and 51% of women in the general population reported that they had experienced at least one traumatic event in their lives. Nearly 17% of men and 13% of women reported that they had experienced more than three such events in their lives.

Prevalence Rates for PTSD

Prevalence rates for PTSD in the general population indicate variation across studies from 1% to 12.3% (Solomon & Davidson, 1997). It has been suggested that
the differences in rates are due to differences in measurement and sampling strategies (Solomon & Davidson, 1997). Studies in which the Diagnostic Interview Schedule (DIS) (Robins & Smith, 1983) for *DSM-III-R* (APA, 1987) was used to assess PTSD revealed the lowest rates (Davidson, Hughes, Blazer, & George, 1991; Helzer, Robins, & McEvoy, 1987). Kulka, Schlenger, and Fairbank (1991) reported that the PTSD scale in the DIS for *DSM-III* is an insensitive measure relative to the Structured Clinical Interview for *DSM-III-R*. In an effort of correct some of the shortcomings of the early DIS, Robbins and colleagues revised the PTSD scale of this instrument. These changes, namely initially listing specific traumatic events, appear to improve recall of events which may lead to PTSD symptomatology. Using the revised version of the DIS, Breslau et al. (1991) found a lifetime PTSD rate of 9.2%.

In the study by Resnick, Kilpatrick, Dansky, Saunders, and Best (1993), a more sensitive measurement strategy was employed in which people could report on Criterion C and D PTSD symptoms without having to anchor specific symptoms to specific traumas. This study reported a rate of 12.3% for PTSD, which although relatively high, was explained by the fact that the study was conducted with a sample of all women. Kessler et al. (1995) reported that women are more likely to report experiencing PTSD than men (10.4% vs. 5%, respectively).

**Chronicity of PTSD**

The *DSM-IV* definition of "chronic" PTSD is symptom duration of 3 months or longer (APA, 1994). Kessler et al. (1995) reported that about 30% of participants
with PTSD improved within the first year, leaving 70% whom did not improve. Further, Kessler et al. reported that over a third of the PTSD sufferers still had symptoms after 10 years. This study also indicated that participants who sought professional treatment for PTSD reported a shorter average duration of symptoms (3 years) than those who did not (over 5 years). Breslau (2001) reported that individuals with chronic symptoms (duration of symptoms greater than 3 months), as compared to those with nonchronic PTSD (symptom duration less than 3 months) had a higher total number of PTSD symptoms. Those with chronic PTSD also showed higher rates of numbing and hyper-reactivity to stressor stimuli, anxiety or affective disorders, and other comorbid medical conditions. Specifically, the study indicated that factors related to chronic PTSD were family history of antisocial behavior and being female.

More recent studies have added that a history of alcohol abuse and history of childhood trauma were associated with longer time to remittance from an episode of chronic PTSD (Zlotnick, Warshaw, & Shea, 1999).

**PTSD and Comorbidity**

Conservative estimates suggest that those with PTSD are two to four times more likely to have another psychiatric diagnosis including depressive disorders, anxiety disorders, substance abuse and somatization than those without these comorbid disorders (Kessler et al., 1995). Davidson et al. (1991) found participants with PTSD to be 90 times more likely to report physical complaints than those without, suggesting an important correlation between PTSD and somatization. In
addition, Breslau et al. (1991) reported that 83% of participants with PTSD also met criteria for some other psychiatric disorder. Kessler et al. (1995) reported similar findings: 79% of women and 88% of men with PTSD reported a history of at least one other psychiatric disorder. A large study of Vietnam veterans diagnosed with PTSD found 98.9% had at least one other psychiatric diagnosis, the most prevalent comorbid conditions in this population being substance use disorders (73%), antisocial personality disorder (31%), and major depression (28%) (Kulka, Schlenger, & Fairbank, 1990).

An issue which continues to be the subject of debate is whether PTSD actually constitutes a distinct psychiatric disorder (Wolfe & Keane, 1990; Yehuda & McFarlane, 1995). If so, the question remains whether the current diagnostic criteria adequately describe or capture the characteristics of the disorder. Research has indicated that PTSD can be distinguished from other psychiatric disorders (Keane, Taylor, & Penk, 1997). However, factor analytic studies have demonstrated a two-dimensional structure (Buckley, Blanchard, & Hickling, 1998; Taylor, Kuch, Koch, Crockett, & Passey, 1998) in which more depressive-like symptoms are accompanied by symptoms unique to the diagnosis of PTSD. Other studies support the three-factor model of PTSD (Foa, Riggs, & Gershuny, 1995) currently used in DSM-IV (APA, 1994). One recent study found support for the three-factor model in which the cluster of avoidance/numbing symptoms was highly correlated with depressive symptoms and the re-experiencing/intrusion cluster was not highly correlated with the symptoms of depression. The cluster of hyperarousal symptoms fell between the two, but was
reported to be more closely correlated, yet distinct from depressive symptoms. These findings suggest that the symptom structure of PTSD is more complex than two-dimensional but is distinct from other psychiatric disorders (Gaffney, 2003).

Risk Factors for the Development of PTSD

Exposure to a traumatic event is not sufficient to result in PTSD. On average, about a quarter of those who experience one or more traumatic events will develop the disorder (Green, 1994). Although researchers have not identified causal factors in the development of the disorder, there are a number of factors that seem to put a person at higher risk for development of PTSD. These risk factors may be categorized as characteristics of the person exposed to trauma and characteristics of the trauma experienced.

Characteristics of the person exposed include gender, personality, psychiatric history, and family psychiatric history. Regarding gender, researchers have repeatedly found that despite experiencing traumatic events less often than men, women develop PTSD nearly twice as often as men (Breslau, Kessler, & Chilcoat, 1998; Kessler et al., 1995). It has been suggested that this is related to characteristics of the trauma which is discussed below.

Regarding factors of personality, Helzer et al. (1987) reported that PTSD could be predicted by a history of behavioral problems including stealing, lying, truancy, and vandalism before the age of 15 years. This report also indicated that the rate of PTSD increased with the number of behavioral problems. These behaviors are
often associated with the Antisocial Personality Disorder diagnosis. Another risk factor, which emerged was abuse in childhood which increased the risk of developing PTSD (Davidson et al., 1991). Several personality disorder diagnoses have been associated with early and severe childhood trauma including Borderline Personality Disorder (Cloitre, Scarvalone, & Difede, 1997) and Dissociative Identity Disorder (formerly Multiple Personality Disorder) (van der Kolk, Pelcovitz, & Roth, 1996).

Premorbid psychiatric disorders including affective and/or anxiety disorders were predictive of the development of PTSD in men and women as well (Bromet, Sonnega, & Kessler, 1998). Childhood mania has also been found to be a risk factor for trauma exposure and PTSD (Wozniak, Crawford, & Biederman, 1999).

Regarding family psychiatric history, Davidson et al. (1991) reported that persons diagnosed with PTSD were 2.8 times more likely to have a relative with a history of psychiatric illness. Similarly, Breslau et al. (1991) and Bromet et al. (1998) both found that a family history of anxiety and antisocial behavior increased the risk of developing PTSD.

Studies related to characteristics of the trauma which may increase the likelihood of developing PTSD include findings from the Epidemiologic Catchment Area Survey in St. Louis (Helzer et al., 1987). This study reported that combat survivors, particularly those who had been wounded, had the highest risk for developing PTSD. The most frequently reported traumatic events reported by those with PTSD were (1) life threat or close call, (2) seeing someone hurt or killed, (3) physical attack, (4) accident, and (5) combat (Davidson et al., 1991). Breslau et al.
(1991) found similar results except for rape which resulted in the highest rate of PTSD (80%) and only in women. Kessler et al. (1995) found that rape was the trauma most likely to result in PTSD in both men and women. In this sample, 65% of men and 46% of women who reported rape as their most distressing trauma developed PTSD. Norris (1992) found the highest rates of PTSD in survivors of sexual assault. This report also indicated motor vehicle accidents to have the most adverse combination of frequency and impact (Norris, 1992).

**Psychobiology of PTSD**

As research has indicated, not everyone who experiences a traumatic event, even the most likely to result in PTSD, will develop the disorder. The question remains: Why do some people recover from traumatic experiences while others do not? To some degree, advances in research regarding biologic changes related to PTSD have helped to explain.

Over 50 years ago, it was hypothesized that from a physiological standpoint, PTSD was characterized by a lowering of the threshold of stimulation accompanied by a psychological state of readiness to respond to perceived danger (Kardiner, 1941). A review of the current research on the psychobiology of PTSD indicates that there are changes in physiologic reactivity and stress hormone secretion associated with the development of the disorder (van der Kolk, 1997). There are several key components of the human stress response involved in the symptom expression associated with PTSD including corticotropin-releasing factor (CRF), the adrenergic
nervous system, and the hypothalamic-pituitary-adrenocortical (HPA) axis (Friedman, 2000). Under stressful conditions, the body releases CRF in order to activate the necessary bodily functions that make the “fight or flight” response possible. If the development of PTSD is related to an altered stress response, it follows that CRF function would be abnormal in people diagnosed with the disorder (Friedman, 2000). Research with a sample of Vietnam veterans did in fact show elevated CRF levels in those diagnosed with PTSD (Bremner, Licinio, & Darnell, 1997). Continued research with additional trauma populations is indicated.

Abnormal responses of the adrenergic system have also been demonstrated by hyper-responsiveness of the sympathetic nervous system, elevated 24-hour urinary catecholemine levels, and by abnormal sensitivity to the adrenergic $\alpha_2$ antagonist yohimbine (Friedman, 2000). Studies have indicated that patients diagnosed with PTSD show excessive startle responses, panic attacks, dissociative symptoms, and abnormalities in cerebral blood flow following yohimbine administration (Southwick, Paige, Morgan, Bremner, Krystal, & Charney, 1999). In addition, recent studies with Israeli patients seeking emergency room treatment following various traumatic events showed that patients with elevated pulse rate (excessive adrenergic response) were more likely to develop PTSD than those whose pulse rate was not elevated following the trauma (Shalev, Freedman, & Peri, 1998).

According to Yehuda (2000), the HPA axis dysregulation sets PTSD apart from other psychiatric disorders. In studies with PTSD patients, research showed lower cortisol levels, up-regulation of glucocorticoid receptors, and supersuppression
to dexamethasone indicating a unique HPA profile associated with this disorder (Yehuda, 2000; Yehuda, Southwick, & Krystal, 1993).

In addition, researchers are examining the role of an endogenous anxiolytic, neuropeptide Y (NPY) that is heavily concentrated in the brain stem, amygdala, hypothalamus, and cortex. Researchers speculate that this neuropeptide serves to attenuate the actions of CRF and other stress-released peptides (Friedman, 2000). Studies with animals have indicated that NPY buffers the impact of the stress response (Stout, Kilts, & Nemeroff, 1995). Recent studies with military personnel during survival training suggest that those individuals with the highest levels of NPY tolerated excessive amounts of stress better than those with lower levels (Morgan et al., 2000).

Serotonin reportedly mediates a behavioral inhibition system in the brain that helps to suppress behaviors motivated by emergencies or by previous reward (Depue & Spoont, 1986; Gray, 1982; Soubrie, 1986). Research on serotonin levels in animals has indicated that low serotonin is related to an inability to modulate arousal, exemplified by an exaggerated startle response and increased arousal to novel stimuli, handling, and pain (Gerson & Baldessarini, 1980). Decreased serotonin function has been correlated with hostility, impulsivity, and self-directed aggression in patients with borderline personality disorder and depression (Asberg, Traskman, & Thoren, 1976; Coccaro et al., 1989). These are diagnostic groups which frequently report severe childhood trauma (Herman, Perry, & van der Kolk, 1989). It is hypothesized that stress induced serotonin dysfunction may lead to impaired function of the
behavioral inhibition system. This in turn may be related to various behavioral problems seen in PTSD such as impulsivity, aggressive outbursts, and compulsive re-enactment of trauma-related behavior patterns (van der Kolk, 1997).

The results of studies utilizing neuroimaging to document functional and structural abnormalities of patients with PTSD (Bremner, Randall, & Scott, 1995; Gurvitz, Shenton, & Pitman, 1995; Rauch, van der Kolk, & Fisler, 1996) indicate decreased hippocampal volumes in patients with PTSD when compared to matched controls. Gurvitz et al. (1995) reported that the severity of PTSD was directly proportional to the degree of hippocampal shrinkage. It is hypothesized that this decrease is due to the long term effect of intrusive reliving of the trauma, most likely mediated by cortisol-induced hippocampal cell damage (Gray, 1982). This in turn, may prevent the proper evaluation and categorization of experience thus making patients with PTSD vulnerable to react to newly arousing stimuli as a threat, with aggression, or with withdrawal (van der Kolk, 1997). However, this theory has yet to be supported by research.

Rauch et al. (1996) and Shin et al. (1997), using positron emission tomography, reported a significant decrease in activation of the left inferior frontal area (Broca's area) thought to be responsible for translating personal experience into communicable language. Research indicates that derealization and depersonalization at the moment of the trauma is an important predictor for the long-term development of PTSD (Marmar, Weiss, & Schlenger, 1994; Shalev, Peri, & Caneti, 1996). Van der Kolk (1997) suggests that the failure of the left hemisphere functioning during states
of extreme arousal may play a role in the dissociative phenomena. Further, since an intact Broca’s area is necessary for the labeling of emotions, impairment could result in the experience of intense emotions without the ability to label them verbally. The hypothesis suggests that traumatized individuals subsequently have difficulty understanding and communicating their experiences (van der Kolk, 1997).

In another line of research, a correlation between PTSD and the use of medical services was found (Saxe, Chinman, & Berkowitz, 1994). Immunologic research was conducted on a group of women with self-reported sexual abuse and a group of control subjects (Wilson, 1996). Results indicated that the immune function was the same for both groups except for the CD45 lymphocytes, also known as the “memory cells” of the immune system. These cells “remember” previous challenges to the immune system and are ready to respond to like challenges. The sexually abused women had an increased ratio of these “memory cells” indicating that they had an increased propensity to remember and respond to immunologic challenges in the direction of trauma, similar to ratios found in patients with rheumatoid arthritis, systemic lupus erythematosus, and sarcoid.

As the literature on the psychobiology of PTSD grows, so does our ability to determine the most efficacious treatment for particular symptoms or symptom clusters with which our clients present. It is generally assumed that helping patients involves the processing of traumatic events through the use of words and symbols, proper categorization, and finally, integration (van der Kolk, 1997) in order to alter the conditioned physiologic and neurohormonal responses created by a traumatic event.
Further research is needed to determine to what degree the psychological processing of a traumatic event can repair the biological changes that result.

Assessment of PTSD

The Clinician Administered PTSD Scale (CAPS) was designed specifically to alleviate the limitations found in other structured clinical interviews currently available for assessing PTSD (Blake et al., 1990). The CAPS-DX (Blake, Weathers, Nagy, Kaloupek, Charney, & Keane, 1997) is an updated version of the original CAPS designed to align interview questions with diagnostic criteria from the most recent version of the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV; APA, 1994)*. Structured interviews for diagnosing PTSD currently in use include the Anxiety Disorders Interview Schedule Revised (ADIS-R; DiNardo & Barlow, 1988), the Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, Williams, & Spitzer, 1981), the PTSD Interview (PTSD-I; Watson, Yuba, Manifold, Kucala, & Anderson, 1991), the Structured Clinical Interview for DSM-IV (SCID-IV; Spitzer, Williams, Gibbons, & First, 1994), and the Structured Interview for PTSD (SI-PTSD; Davidson et al., 1990).

Unique features of the CAPS-DX include the use of explicit behavioral anchors or referents as the basis for clinician ratings. It also includes items that assess for symptoms related to Criteria A through F according to the *DSM-IV* defined construct of PTSD (APA, 1994). In addition, the interview assesses for the impact of symptoms on social and occupational functioning, improvement in symptoms since
the previous CAPS administration, overall response validity, overall PTSD severity, and five associated symptoms (guilt over acts, survivor guilt, gaps in awareness, depersonalization, and derealization). This instrument also utilizes the Life Events Checklist, used to determine exposure to 17 different traumatic events. This has been particularly helpful in assessing Criterion A (the presence of a traumatic event involving actual or threatened death with a response of intense fear, helplessness or horror).

For each item, the interview provides standardized questions, which may be used to elicit information about experiences or symptoms. For each symptom reported, the interviewer uses the client’s answer to assign a frequency rating as well as an intensity rating. In addition, the verbal ratings for intensity are tailored to each item. This feature is what distinguishes the CAPS from other instruments that require the interviewer to rate symptoms along a single dimension of severity and/or to determine the presence or absence of a symptom (Blake et al., 1990). The CAPS is also structured to establish that all symptoms endorsed occurred within the same one month (or one week with the CAPS-SX) time frame. Questions regarding current and lifetime symptoms are assessed independently to ensure that relevant time frames are clearly distinguished from one another (Blake et al., 1990).

Responses to the CAPS-DX may be used to determine if a person meets DSM-IV diagnostic criteria for PTSD as well as providing continuous rating calculations for evaluating frequency and intensity of symptoms. In addition to the scoring for intensity and frequency, there is an optional space for the interviewer to
indicate any doubts regarding the accuracy and/or veracity of the interviewee's responses (Blake et al., 1990). This information may be used to estimate the overall validity of the information reported in the interview. The CAPS also includes a summary sheet used for coding all symptom ratings. This detailed, one page sheet aides the interviewer in determining that all items were addressed, coded appropriately, and if diagnostic criteria were met. These features represent improvements in administration and diagnosis over many of the PTSD clinical interviews currently available. Since its original development, the CAPS has been updated several times (Weathers, Keane, & Davidson, 2001). The instrument continues to be widely used in both research and treatment settings (Schnurr, Friedman, & Bernardy, 2002).

Current Treatments

Psychological Interventions

At its introduction into the DSM-III nearly 20 years ago, PTSD was conceptualized as a complex phobia with widespread generalization producing symptoms similar to a generalized anxiety disorder (Diagnostic and Statistical Manual of Mental Disorders, 3rd edition; APA, 1980). At that time, psychological treatments that were being used with other anxiety disorders were applied to patients with PTSD. Lack of improvement in symptoms gave rise to the development of cognitive behavioral therapies specific to PTSD. The two most commonly employed treatments are exposure and anxiety management procedures.
Exposure based treatments such as imaginal flooding and systematic desensitization target feared situations, objects, memories, or images. These treatments require patients to confront a feared stimulus in one of two ways: imaginal exposure and in vivo exposure. In imaginal exposure, the patient is asked to recall from memory and then recount the traumatic event as vividly as possible. With in vivo exposure, the patient is asked to physically confront the feared place, activity, or situation in which the trauma took place.

Imaginal flooding or implosive therapy requires that the client repeatedly imagine the traumatic event until the event no longer evokes the high level of anxiety present at the beginning of treatment. Treatment is terminated when the avoidance and anxiety of the traumatic memories are reduced to levels that are manageable and/or comfortable for the client. Outcome research with imaginal flooding demonstrates efficacy with the procedure in war veterans (Fairbank, Gross, & Keane, 1983; Keane & Kaloupek, 1982). However, limitations with this research have been noted, including the use of case studies and very small groups, or treatment groups made up of only Vietnam veterans (Saigh & Bremner, 1999).

Systematic desensitization (SD) was one of the earliest exposure techniques used for post-traumatic reactions (Wolpe, 1958). The procedure consists of a combination of relaxation techniques and progressive exposure to a predetermined series of imagined traumatic events. The treatment has been used extensively with war-related PTSD and is useful in the treatment of various symptom constellations (Saigh & Bremner, 1999). Uncontrolled studies and case studies showed partial
reduction of trauma-related symptoms (Frank & Stewart, 1983, 1984). Again, this research was limited by the need for additional studies with larger samples, control groups and various PTSD populations (Saigh & Bremner, 1999).

Behavioral rehearsal involves placing the client back in the anxiety provoking situation to "practice" the necessary behavior and may be used in conjunction with relaxation techniques such as progressive muscle relaxation. This technique was successful in reducing startle responses in a case study of an auto accident victim (Fairbank, DeGood, & Jenkins, 1981) and is suggested specifically for persistent post-traumatic startle responses (Saigh & Bremner, 1999).

Anxiety management procedures utilize a set of skills such as relaxation, breathing training, social skills training, cognitive restructuring, positive self-talk, role-playing, and thought stopping.

Meichenbaum (1974) developed Stress Innoculation Training (SIT) as an integrated cognitive behavioral approach to therapy. Theoretically, the emphasis of SIT is on the development of a frame of reference of personal responsibility and activity in order to manage stressful events (Saigh & Bremner, 1999). In addition the technique attempts to decrease feelings of helplessness and passive victimization (Saigh & Bremner, 1999). Research indicated positive results with the use of SIT (Veronen & Kilpatrick, 1983) and it is one of the few behavioral treatments to be used in studies with large populations. Again, the need for control groups has been emphasized in the outcome research (Saigh & Bremner, 1999).
In the years since systematic desensitization was developed, Prolonged Exposure (PE) with or without relaxation has gradually taken its place. Two controlled studies, both for women victims of assault, have examined the efficacy of exposure treatments for PTSD in comparison to other cognitive behavioral treatments and to wait list controls. In a study conducted by Foa, Rothbaum, Riggs, and Murdock (1991), PE was compared to Stress Inoculation Training (SIT), supportive counseling (SC), and a wait-list control. SIT and PE showed improvement on all three PTSD symptom clusters following treatment. SC and wait-list conditions showed improvement in only the arousal cluster symptoms. At 3-month follow-up, 55% of the PE group, 50% of the SIT group, and 45% of the SC group no longer met diagnostic criteria for PTSD. In a second controlled study, Foa, Dancu, Hembree, Jaycox, Meadows, and Street (1999), the researchers compared PE alone, SIT alone, and the combination of PE and SIT to a wait-list control group. All active treatments showed improvement on PTSD symptoms, stated anxiety, and depression at posttest. By 12-month follow-up, 52% of the PE group, 42% of the SIT group, and 36% of the PE/SIT group had good “end state functioning” as defined by low scores on PTSD, depression, and anxiety measures.

One controlled study showed additional efficacy for exposure-based techniques in mixed forms of trauma as well (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998). Trauma victims with chronic PTSD were randomly assigned to either PE alone, Cognitive Reprocessing (CR) alone, PE/CR, or relaxation alone. At posttest, 53% of the PE group, 32% of the CR group, 32% of the PE/CR group, and
15% of the relaxation group achieved good end state functioning. These treatment gains were maintained at 6-month follow-up.

Another recently developed exposure-based treatment, Eye Movement Desensitization and Reprocessing (EMDR) (Shapiro, 1989, 1995) requires the client to perform rhythmic, saccadic eye movements while recalling details of the traumatic event. Several meta-analyses have indicated significant improvements in PTSD symptoms using this treatment (Van Etten & Taylor, 1998; Waller et al., 1997). Recent data comparing EMDR with and without eye movements have suggested that improvements are equivalent in both groups (Boudewyns & Hyer, 1996; Pitman, Orr, Altman, Longpre, Poire, & Macklin, 1996). In addition, research indicated that elimination of the cognitive component of the procedure did not reduce the effectiveness in producing positive outcomes, lending support to the hypothesis that EMDR is in essence, a form of imaginal exposure treatment (Cusack & Spates, 1999).

Cognitive Processing Therapy (CPT) (Resick & Schnicke, 1992) for victims of rape utilizes components of cognitive therapy and exposure. Participants received education about PTSD symptoms and information processing theory. Exposure and cognitive therapy techniques were then utilized in a structured, weekly group therapy format. The exposure component in this treatment involved writing a detailed account of the assault and reading it during therapy sessions. The CPT group improved on both PTSD and depression symptoms at posttest while the wait list control showed
no such improvement. At 6 months posttreatment the CPT group gains were maintained.

Although the aforementioned treatments offer promise for clients with PTSD, methodological limitations have been noted in the literature. These limitations include attrition in patient populations, subjects receiving additional treatments, and the use of only inpatient populations or individuals seeking treatment (Solomon, Gerrity, & Muff, 1992). In addition, there is increasing recognition of the need for a better understanding of which components in what combinations are most likely to yield treatment gains (Solomon et al., 1992).

**Pharmacological Interventions**

In addition to psychotherapeutic interventions, several types of medication have been used in attempts to treat PTSD. Medication may be used in treating patients with PTSD with one of two goals in mind (Davidson, 1997). One goal is to use the medication as a way to eliminate debilitating symptoms so the person may resume a normal life (Sargent & Slater, 1972). The other goal is to facilitate resolution of the traumatic experience by allowing the patient to confront and work through the trauma (Hogben & Cornfield, 1981).

Published research on pharmacological therapies for PTSD is limited but growing. However, results continue to be inconsistent making recommendations difficult. Compounding the issue is the high rate of comorbidity in people diagnosed with PTSD which requires that much care be taken in the selection of a
pharmacological treatment (Friedman, 1998). In addition, little was known about the psychobiology of PTSD until recently (van der Kolk, 1997) making it difficult to say which drugs would reduce which clusters of symptoms.

Among the pharmacological treatments the most widely used to treat symptoms of PTSD are tricyclic antidepressants, monoamine oxidase inhibitors such as phenelzine, and serotonergic agents such as fluoxetine, sertaline, and fluvoxamine. The anticonvulsants carbamazepine and valproic acid, and benzodiazepines such as alprazolam, clonazepam, and lorazepam have also been prescribed. Clonidine and propranolol have been prescribed to reduce symptoms as well. Yehuda, Marshall, and Giller (1998) reviewed the available studies and found only seven controlled clinical trials reported at that time (Braun, Greenberg, Dasberg, & Lerer, 1990; Davidson et al., 1990; Katz et al., 1995; Kosten, Frank, Dan, McDougle, & Giller, 1991; Reist et al., 1989; Shestatzky, Greenberg, & Lerer, 1988; van der Kolk et al., 1994). The remainder of the literature consisted of open trials, case reports and retrospective chart reviews (Yehuda et al., 1998). In addition to the lack of controlled, clinical trials, the combination of therapies to address the PTSD symptom complex and the common presence of comorbid illnesses complicated an accurate review of treatments (Sutherland & Davidson, 1994).

Tricyclic antidepressants have been the best-studied class of medications for PTSD, with three randomized clinical trials (Davidson et al., 1990; Kosten et al., 1991; Reist et al., 1989), three open trials, and several retrospective studies and case reports. One of the two more methodologically sound of the studies is Davidson et
al.'s (1990) randomized trial comparing amitriptyline (TCA) to a placebo in combat veterans. The study utilized a mixed population of hospitalized and outpatient veterans who had served in World War II, Korea, or Vietnam. Results indicated that amitriptyline was superior to placebo on measures of PTSD including avoidant symptoms as well as general measures of depression and anxiety. This study was important because although responses at 4 weeks were not significant, at 8 weeks they were. This study also showed the efficacy of drug over placebo regardless of how long participants had experienced symptoms and regardless of inpatient versus outpatient status.

Kosten et al. (1991) conducted the first randomized placebo-controlled study and found phenelzine (MAOI) to be superior to both placebo and imipramine (TCA) particularly with respect to intrusive and avoidant symptom clusters. Reports indicated that phenelzine (MAOI) resulted in a 68% global improvement, compared with a 45% improvement with imipramine (TCA) and a 28% improvement from the placebo group. Specifically, phenelzine (MAOI) was helpful with the core symptoms of intrusion and insomnia with a trend toward improvement in avoidance. This study had an adequate number of subjects ($n = 46$) and therapeutic drug levels were monitored for 8 weeks, enough time to determine specific effects of the medication on symptom improvement. In addition, participants were from a Readjustment Veteran Outreach Center, rather than a VA, most were employed and had no comorbid substance use or major Axis I diagnoses. These factors may be considered to add to, or detract from the significance of the results as comorbid Axis I diagnoses are so
prevalent in this population. Thus, considering the number of people suffering from PTSD who do have substance use disorders as well as comorbid Axis I disorders, these results may not be generalizable to the majority of PTSD sufferers. In addition, participants were involved in group therapy and 4 participants were also administered benzodiazepines.

Overall, phenelzine (MAOI) appears to be superior to imipramine (TCA) for PTSD, particularly for intrusive symptoms. The medication does not appear to be well suited to combat avoidant symptoms, however. With MAOIs in general, there is also the danger of a hypertensive crisis from ingestion of foods containing tyramine and from certain other medications. With phenelzine (MAOI) in particular, side effects which contribute to drop out rates include the intensification of sleep disorders, dizziness, erectile failure, delayed ejaculation and urination, constipation, dry mouth, blurred vision, drowsiness, behavioral inhibition, blackouts, perceptual changes, and hypomania (Davidson et al., 1990; Kosten et al., 1991).

As mentioned above, Kosten et al.'s (1991) randomized trial compared imipramine (TCA) to phenelzine (MAOI) and placebo, showing that imipramine was more effective than phenelzine in global symptoms improvement. Both of these studies considered comorbidity in evaluating treatment outcome but as mentioned above, the Kosten et al. (1991) group had little in the way of comorbid disorders. In addition, they both utilized standardized assessments for diagnosis and symptom ratings.
In general, the therapeutic effects of tricyclics have been modest, but clinically relevant, particularly for hyperarousal and intrusive symptoms (Yehuda et al., 1998). Because no single medication has been used, it has been harder to evaluate the efficacy of TCAs given that they vary in the mechanisms and spectrums of action across neurotransmitter systems (Yehuda et al., 1998). These medications appear to work best after at least 8 weeks in trauma survivors with no comorbid diagnoses and are effective for reducing the associated symptoms of mood and anxiety in subjects with PTSD (Yehuda et al., 1998).

More recently, a double blind, randomized, placebo controlled, multicenter study examined the effectiveness of the reversible selective MAO type A inhibitor and serotonin reuptake inhibitor, brofaromine (Baker et al., 1995). Due to its rapid reversibility of inhibition of MAO, it reduces the risk of a tyramine-induced hypertensive crisis making it a safer choice for those PTSD patients who may be prone to impulsivity and substance abuse. The study compared brofaramine (n = 56) to placebo (n = 58) in with a sample of combat veterans. Both groups showed significant reduction in symptoms as measured by the Clinician Administered PTSD Scale (CAPS) scores, but no significant differences were seen between groups.

Selective Serotonin Re-uptake Inhibitors (SSRIs) have been used to treat PTSD as well. One randomized, double blind, placebo-controlled trial (van der Kolk et al., 1994) examined the effect of fluoxetine in two groups of PTSD patients over a 5-week period. Participants were 31 war veterans and 33 civilian patients in a trauma clinic. In addition to PTSD, over half of the participants in this study also met criteria
for major depression. In the sample of completers (about 25% did not complete the study), fluoxetine was found superior to placebo for overall PTSD symptoms and dramatically improved depressive symptoms. In addition, improvement was noted in numbing and hyperarousal symptoms but not in avoidance and intrusive symptoms. The authors noted clear overall improvement in PTSD symptoms after a 5-week period of drug treatment with 50% of subjects no longer meeting PTSD criteria after 10 weeks (van der Kolk et al., 1994).

A 12-week, double blind, placebo-controlled trial of the SSRI, sertraline was conducted over 14 sites (Brady et al., 2000). This study included 187 patients who met criteria for DSM-III-R PTSD and scored a minimum of 50 on the Clinician Administered PTSD Scale (CAPS-2) at baseline. Results indicated that patients who received sertraline showed significantly greater improvement than placebo on three of four primary outcome measures including CAPS-2 score, Clinical Global Impression-Severity (CGI-S), and Clinical Global Impression- Improvement (CGI-I) scores. Sertraline showed significantly greater improvement than placebo on CAPS-2 PTSD symptom clusters of avoidance/numbing and increased arousal. No significant differences were found for re-experiencing/intrusion symptoms. Researchers reported that sertraline was well tolerated with insomnia being the only adverse effect reported significantly more often than in the placebo group.

A second, randomized, double-blind, placebo controlled study examined the effects of sertraline when compared to placebo (Davidson, Rothbaum, van der Kolk, Sikes, & Farfel, 2001). Outpatients with a DSM-III-R diagnosis of PTSD were
randomized to 12 weeks of either sertraline in flexible daily doses in the range of 50-200 mg \((n = 100)\) or placebo \((n = 108)\). Primary outcome measures included the Clinician Administered PTSD Scale (CAPS-2) total severity score, the patient-rated Impact of Events Scale (IES), and the Clinical Global Impression-Severity (CGI-S) and -Improvement (CGI-I) ratings. Acute treatment with sertraline resulted in a clinically significant mean reduction from baseline in the range of 45% to 50% on the two primary measures, the CAPS-2 and the IES. Researchers indicated that 70% of this improvement occurred within 4 weeks of treatment. In addition, sertraline was well tolerated by participants with 9% of the sertraline subjects, compared with 5% of the placebo-treated subjects who discontinued treatment during the 12-week study period due to adverse effects.

This study was limited in that entry criteria excluded patients with current history of alcohol or substance abuse. In addition, a moderate or high level of current symptom severity was required. These conditions may have compromised the generalizability of the results. In addition, the effect of clinical variables including gender, type of trauma, duration of illness, and presence of comorbid conditions was not considered when evaluating treatment response.

SSRIs have been noted as the first choice of pharmacology for all symptoms of PTSD by the Expert Consensus Guidelines (Foa, Davidson, & Frances, 1999) and the SSRI sertraline has recently been approved by The Food and Drug Administration (FDA) for the treatment of PTSD.
A controlled trial of a benzodiazepine in the treatment of PTSD found no improvement in symptoms specific to PTSD in a 5-week trial of alprazolam (Braun et al., 1990). Modest improvements were found in reports of anxiety symptoms and some improvement was noted in subjective well-being, but ratings on the PTSD scale of diagnostic criteria and IES were not affected. It should be noted that the short duration of the study and small number of subjects \((n = 10)\) may have affected the results. More recent trials with alprazolam and clonazepam have not shown any effect on PTSD symptoms (Anderson, Rothbaum, & Hodges, 2001; Ballenger, Davidson, & Lecrubier, 2000). In addition, the harmful drug interaction in patients with comorbid substance use/abuse disorders, and serious withdrawal symptoms make benzodiazepines less often the drug of choice for clinicians.

The antiadrenergic agents such as alpha-2 agonists or beta-blockers have not been systematically studied despite the established association between chronic PTSD and adrenergic dysregulation (Friedman, Charney & Deutch, 1995; Yehuda & McFarlane, 1997). In open trials, clonidine has been shown to reduce hyperarousal and re-experiencing symptoms as well as improved mood and concentration (Friedman & Southwick, 1995). However, patients who have a positive first response to the drug may develop tolerance followed by the return of PTSD symptoms. Two recent case reports indicated that clonidine could be replaced with another adrenergic alpha-2 agonist, guanfacine, with complete suppression of PTSD symptoms for the remainder of the course of treatment (Horrigan, 1996; Horrigan & Barnhill, 1996).
Although no controlled, clinical studies have been conducted, anticonvulsants have shown promise in two small, open-label studies (Fesler, 1991; Lipper, Hammett, & Davidson, 1986). Results indicated that nightmares, flashbacks, and intrusive recollections were reduced as well as reports of improvement in the quality and length of sleep.

Thus, a number of pharmacological treatments for PTSD are available. Those on which clinical trials have been run showed some promise for relieving patients of one or more symptoms, but have not been shown to improve functioning or disability (Davidson, 1997). It is also unknown to what extent civilian populations respond differently than veterans and to what extent the type and severity of trauma may contribute to differences in the response to treatment. Additional research is needed in this area to support these preliminary findings.

**Burnout**

**Definition**

Burnout was defined by Maslach (1982) as “a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that occurs among individuals who do ‘people work.’” According to Pines (1982), burnout is always caused by emotional stresses and occurs as a result of the intense involvement with emotionally demanding situations over long periods of time. The term “burnout” is regularly used in reference to professional workers including nurses, social workers, psychologists, and policemen. Core symptoms of burnout include feeling emotionally
empty or drained, development of a negative or cynical attitude toward the recipients of one's service, and a loss of feelings of personal accomplishment in one's job (Maslach, Jackson, & Leiter; 1996). As such, quality of work and ability to engage in effective relationships with clients are adversely affected by burnout (Shannon & Salebey, 1980).

Symptoms include depression, cynicism, boredom, loss of compassion, and discouragement (Freudenberger & Robbins, 1979). In addition, burnout has been linked to several indices of distress including poor physical health (Pines, 1982), marital problems (Jackson & Maslach, 1982; Jayaratne, Chess, & Kunkel, 1986), insomnia (Maslach & Jackson, 1979), and substance abuse (Jones, 1981; Pines, 1982). Several studies have also shown an association between burnout and various work avoidance behaviors including absenteeism and tardiness (Drake & Yadama, 1996), the intention to leave one's job (Drake & Yadama, 1996; Jones, 1981) and employee turnover (Pines, Aronson, & Kafry, 1981; Weinberg, Edwards, & Garove, 1983).

Assessment of Burnout

Although the construct of burnout has been studied extensively, only three burnout measures have been reported in the literature: the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981, 1996), the Tedium Measure (Pines et al., 1981), and the Meier Burnout Assessment (Meier, 1983). The Tedium Measure was designed to be a more general survey, not necessarily aimed at people in emotionally
demanding situations. It is particularly suited to assessing burnout in a corporate organization or system (Stout & Williams, 1983). The Meier Burnout Assessment was rationally derived with limited psychometric data available. Of the three measures mentioned in the literature, the Maslach Burnout Inventory has the widest usage.

The Maslach Burnout Inventory

The MBI was designed for use with people working in emotionally demanding situations. More specifically, it was designed to assess a person's feelings and attitudes regarding their work with people. Researchers continue to utilize this instrument in both research and clinical settings. Recent studies include confirmatory factor analysis and reliability studies in multiple languages (Abu-Hilal & el-Emadi, 2000; Yuen, Lau, Sheck, & Lam, 2002). In addition, the instrument continues to find wide usage in clinical research assessing burnout in various populations including nurses (Beckstead, 2002; Kalliath & Morris, 2002), dentists (te Brake, Gorter, Hoogstraten, & Eijkman, 2001; Gorter, Albrecht, Hoogstaten, & Eijkman, 1999) and teachers (Koustelios, 2001; Nagy & Nagy, 1992).

Three versions of the MBI are available: the Human Services Survey (MBI-HSS; Maslach & Jackson, 1996), which was designed for professionals in the human services; the Educators Survey (MBI-ES; Maslach & Jackson, 1996), designed for use with educators; and the General Survey (MBI-GS; Schaufeli, Leiter, Maslach, &
Jackson, 1996), designed for use with workers in occupations other than human services and education.

The MBI-Human Services Survey yields scores on three subscales: emotional exhaustion, depersonalization, and personal accomplishment. High scores on the emotional exhaustion subscale are indicative of emotional over extension or being worn out by one’s job. High scores on the depersonalization subscale are indicative of a lack of concern or feeling for one’s clients. Low scores on the personal accomplishment subscale reflect feelings of incompetence or ineffectiveness in one’s work. Separate scores are attained for each subscale to reflect the degree to which individuals experience the feelings assessed by the subscale.

The MBI-Educator’s Survey was developed to identify burnout levels in individuals working in educational or school settings. The instrument measures the same three burnout subscales as the MBI-HSS. The one modification made was to replace “recipient” to “student” on the questionnaire.

Both of the above mentioned surveys include a Demographic Data Sheet to identify the subjects’ age, sex, race, religion, marital status, education and employment related information.

The MBI-General Survey was developed to assess burnout in occupations without direct personal contact with service recipients or with only casual contact with people. This assessment has three subscales including Exhaustion (Ex), Cynicism (Cy), and Professional Efficacy (PE). Both the Exhaustion and Professional Efficacy subscales of the MBI-GS are similar to the Exhaustion and Personal Accomplishment
subscales of the MBI-HSS respectively. The Cynicism items on this survey reflect an indifferent attitude toward work, referring to the work itself rather than to personal relationships with people at work as in the Depersonalization subscale of the MBI-HSS. Similar to the MBI-HSS, a high degree of burnout is demonstrated by high scores on both Exhaustion and Cynicism subscales and low scores on Professional Efficacy. A Demographic Data Sheet was not developed for use with the MBI General Survey, but the authors suggested that the Educator’s Survey Demographic Data sheet may be used with this survey.

Recommendations for Intervention

Burnout is not recognized as a mental disorder by the Diagnostic and Statistical Manual, 4th edition (DSM-IV; APA; 1994). However, as evidenced by a description of the constellation of symptoms, it is a significantly distressing and debilitating condition for many people. Several recommendations for intervention have been made in an effort to reduce the effects of burnout including personal stress management, organizational socialization (Taormina & Law, 2000), and developing a “personal plan of action” (te Brake, Gorter, Hoogstraten, & Eijkman, 2001).

Writing Therapy

Theory

Since the inception of psychotherapy, theorists have suggested that emotional expression is essential to positive mental health outcomes and that emotional
inhibition has contributed to negative mental health outcomes (Breuer & Freud, 1966). More recently, researchers have reported a link between emotional expression and improved health outcomes (Esterling, Antoni, Kumar, & Schneiderman, 1990; Murray, Lamnin, & Carver, 1989; Spiegel, Bloom, Kraemer, & Gottheil, 1989). Conversely, emotional inhibition has been linked to detrimental effects including psychological distress and increased physical health problems (Jamner, Schwartz, & Leigh, 1988; Jensen, 1987; Larsen, 1990).

Pennebaker (1989) proposed an "inhibition model" which suggested that the effort exerted by constraining feelings, thoughts or behaviors is physiologically stressful. The stress produced by the inhibition, acts on the body, exacerbating any number of psychosomatic processes. Thus, disclosure of these feelings, thoughts, or behaviors would, theoretically, relieve the stress and improve physical health and mental well-being. Pennebaker (1993) found that participants who had not shared past traumatic experiences exhibited more health problems than those who disclosed. A study by Kagan, Reznick, and Snidman (1988) found that participants rated as inhibited or "shy" by others reported increased health problems when compared to those rated less inhibited. More recent research supports this model of inhibition including a study by Cole, Kemeny, Taylor, and Visscher (1996) who reported increased physical health problems among men who concealed their homosexual orientation.

According to Hembree and Foa (2000), there are three factors hypothesized to be critical to the successful processing of traumatic events. These are emotional
engagement with the trauma memory, organization of the trauma narrative, and the correction of dysfunctional cognitions that are common immediately after a traumatic event. Clinical observations reported by the researchers suggest that incomplete sentences, repetitions, and speech fillers characterize the trauma narratives of patients with chronic PTSD. In addition, it has been suggested that these narratives are often discontinuous with respect to time and reflect a good deal of confusion. It has been hypothesized that the natural process of healing from a traumatic event involves organizing and articulating the traumatic memory. This hypothesis is supported by research indicating that PTSD symptom severity three months following the traumatic event was predicted by the degree of trauma narrative articulation (as measured by reading level) (Amir, Stafford, & Freshman, 1998).

Empirical Literature

A series of studies by James Pennebaker has examined the effects of writing about traumatic events on physical health and well-being. In one of the earliest studies, Pennebaker and Beall (1986) conducted a preliminary investigation to determine if writing about traumatic events would influence long-term measures of health. The researchers also looked at short-term indicators of physiological arousal and reports of negative mood as well as particular aspects of the writing itself.

Participants were randomly assigned to groups and asked to write about their most traumatic experience from one of three perspectives: (1) only facts of the traumatic event, (2) only the emotions experienced due to the traumatic event, and (3)
both facts and emotions. Results indicated that participants who wrote only about the facts of the trauma were indistinguishable from controls that wrote about superficial topics. The group who focused only on emotions related to the trauma reported the study to be helpful, but showed no long-term health improvements. Only those participants who wrote about both the facts of the trauma and their emotional responses to it showed long-term health benefits. Thus, writing about an earlier traumatic event was associated with long-term decreases in health problems as well as short-term increases in physiological arousal.

Further investigation (Pennebaker et al., 1988) examined the effects of writing about a traumatic experience on immunological function and other measures of distress. It was predicted that individuals assigned to write about their most traumatic experience would demonstrate an increased production of white blood cells in response to stimulation (thus indicating increased immune system functioning) relative to control subjects who wrote about superficial topics. Participants were 36 women and 14 men, all healthy undergraduates, who were randomly assigned to one of two writing conditions. Three general classes of data were collected: evaluations of and responses to the written essays, long-term effects of the study, and individual differences affecting responses.

The first class of data included degree of personal content of essays (rated by independent judges), objective parameters of each essay (number of words, number of self-references, and number of emotion words), and subject ratings on level of personal disclosure and degree to which they had withheld this trauma from others. In
addition, participants were asked to complete a questionnaire assessing the degree to which they experienced each of eight symptoms (e.g., headache, pounding heart, tense muscles) and six negative mood states (e.g., frustrated, guilty, depressed).

Four types of data assessed the long-term effects of disclosure of traumatic experiences. One of the long-term effects included immune system functioning. As a measure of immune function, this study examined the lymphocyte, or white blood cell response to stimulation by substances called mitogens, which are foreign to the body. An in vitro measurement of the proliferation of lymphocytes in response to stimulation by these foreign bodies was conducted. Two types of mitogens were used in this study, phytohemmagglutinin (PHA) and concanavalin A (ConA), both of which stimulate the proliferation of T-lymphocytes thus indicating the ability of the immune system to fight infection.

In addition, the number of health center visits over two time periods was examined. These included the 5-month interval covering the beginning of the school year to the time of the study, and from the beginning of the study to the end of the study (roughly 6 weeks). Subjective ratings of distress were also collected. These included subjects' general attitude about the experiment and changes in health related behaviors since the beginning of the experiment. In addition, resting levels of systolic and diastolic blood pressure, heart rate, and skin conductance level were measured prior to each of the blood draws.

Prior to the first writing day, participants completed a battery of questionnaires, had autonomic measures taken and blood drawn. The next day,
participants began the writing portion of the study. Writing sessions were for 20 minutes each on 4 consecutive days and took place in individual, private rooms. Specific instructions were given to each group. Immediately before and after the writing session, participants were asked to complete questionnaires that assessed their mood and physical symptoms. After writing each day, participants were asked to evaluate their writing for that day. On the last day of writing, autonomic measures were again taken and blood was drawn for a second time. Brief questionnaires were then administered. Six weeks later, autonomic levels and blood samples were taken and post-experimental questionnaires were then completed. Participants were then extensively debriefed regarding the experiment.

The Health Center provided information regarding the number of visits made by each participant for the 5 months prior to and the 6 weeks during the study. At 3 months following the end of the study, subjects were mailed a final questionnaire to assess possible long-term effects of the experiment.

Results indicated that writing about traumatic events was associated with a positive effect on the ability of the immune system to fight infections (as measured by the blastogenic response of the T-lymphocytes to two mitogens), on health center use, and on subjective distress at follow-up. The essays of the subjects who were asked to write about a traumatic experience were significantly more personal, longer, and included more self-references and more emotion words than the control group as rated by objective measures. Regarding the self-reported physical symptoms and emotional state questionnaire, these same subjects reported higher levels of physical
symptoms and negative mood immediately following each writing session as compared to control subjects. However, by follow-up, the self-reported ratings of negative mood in the group writing about a traumatic experience had decreased, such that there was no significant difference between the two groups.

In relation to the physiological measures, the group writing about a traumatic experience demonstrated a higher overall mitogen response following baseline in comparison with the control group. Regarding health center visits, these same subjects evidenced a drop in visits relative to control subjects. However, the authors note that this increase in health center visits for the control subjects probably reflects normal seasonal illness rates for that time of year. Subjective reports regarding the study revealed that although the participants who were asked to write about a traumatic experience reported some negative feelings at the beginning of the study, they were significantly happier than control subjects at the 3-month follow-up. Health related behaviors such as smoking, consuming caffeine and alcohol and hours of strenuous exercise per week showed no change.

Regarding individual differences in the participants writing about a traumatic experience, the group was divided into high disclosers—those who self-reported writing about a trauma they had not talked about before—and low disclosers—those who wrote about a trauma they had shared with others in the past. High disclosers wrote significantly more words than low disclosers and rated their essays as more personal, although independent judges rated the two groups equally. In addition, high disclosers had a marginally higher response to PHA stimulation than low disclosers.
and improved mitogen response across all mitogen concentrations relative to the low
disclosers. No significant differences were found in autonomic levels for the two
groups.

The authors highlight the importance of these results as supporting an
inhibitory model of psychosomatics, pointing to the effectiveness of writing therapy as
a general preventive therapy, and promoting awareness of the potentially direct and
cost-effective improvements in health that psychotherapy might be expected to
provide. It is generally accepted that stress can increase the incidence of illness. This
study supports the idea that the stress associated with the failure to confront a
traumatic experience, specifically the inhibition of such material, is associated with
physical effort. Pennebaker et al. (1988) suggest that over time, this can cause or
become illness. This study demonstrated that individuals who confront upsetting
experiences in their lives show improvements in physical health relative to controls
and the greatest health improvements were seen in those who wrote about topics
which they had actively held back from others in the past.

Several limitations to the study may be noted. Participants in this study were
psychologically healthy college men and women, a fairly homogeneous sample, thus
bringing generalizability of the results into question. In addition, the majority of
participants were women ($n = 36$ women; $n = 14$ men) with no analyses mentioned
regarding differences in responses between genders. Whether there were no
differences, or whether the researchers did not examine that variable, is unclear from
the review of the study.
Greenberg and Stone (1992) sought to replicate the earlier findings of Pennebaker et al. (1988) that disclosing about a trauma results in improved physical health. In particular, they examined whether revealing previously undisclosed traumas would result in increased health benefits. Subjects were 36 women and 24 men college student volunteers with a mean age of 19.3 years. Subjects were randomly assigned to a previously disclosed trauma (PDT) group, a previously undisclosed trauma (PUT) group, or a control group. Before each writing session, participants in the PDT group were specifically instructed to write only about traumatic experience(s) they had discussed with another person. Participants in the PUT group were specifically instructed to write only about traumatic experience(s) they had not discussed with any other person. Participants assigned to the control group were told to write only descriptions of specified activities, social events or plans they had, leaving out any mention of their feelings or thoughts related to these topics.

Because the study was a replication, all of the measures used in the Pennebaker et al. (1988) study were also used in this study with the exception of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Greenberg and Stone (1992) also changed the time frame for reporting of physical symptoms from the previous year to the previous month.

Results of this study failed to replicate the overall finding of Pennebaker and Beall (1986) and Pennebaker et al. (1988) that writing about emotions related to past traumatic experiences is associated with subsequent health benefits. No significant differences were found between any of the groups on measures of overall visits to
health care professionals for illness, nor on self-reported physical symptoms.

Greenberg and Stone (1992) suggest that differences may, in part, be due to the differences in pre-existing health status of the participants in this study and that of participants in previous studies. Subjects in this study had twice as many illness visits, on average, at pretest than Pennebaker et al.'s (1988) participants suggesting that although writing therapy may be useful in reducing future health problems, it is not sufficient to cure preexisting or chronic health problems. However, in the current study, self-reported doctor visits, in addition to objectively documented health center visits were tracked and may therefore be subject to memory biases. In addition, despite random assignment of subjects, significant differences were found between trauma and control subjects on physical symptoms at pretest. Previous studies (Pennebaker & Beall, 1986; Pennebaker et al., 1988; Pennebaker, Colder, & Sharp, 1990) did not report pretest assessment of between group differences so it is not known whether they suffered pretest differences as well.

Significant differences between disclosed trauma and undisclosed trauma subjects were found on measures of immediate mood and physical symptoms, such that disclosed-trauma subjects reported greater immediate increases in negative mood and physical symptoms and greater immediate decreases in positive mood when compared to undisclosed trauma subjects. These results were not attributed to a difference in the severity of trauma revealed, as no significant differences on self-reported trauma severity were revealed. The researchers suggested this difference might be due to participants remembering the disapproving or negative responses
from others when the traumatic material was originally disclosed. However no
information was attained to verify this hypothesis.

On measures of longer term health and mood, disclosed trauma and
undisclosed trauma subjects did not significantly differ. It should be noted that this
finding may have been due to the continuous nature of the "disclosure" variable.
Participants may have selectively disclosed portions of traumatic material to
confidants and thus a partially disclosed trauma may have been appropriate for either
group. This suggests that the experimental manipulation of prior disclosure may be
less clear-cut than had been assumed.

Finally, no significant differences were found between severe and nonsevere
trauma subjects on immediate mood and symptom measures, but on measures of
physical symptoms in the 2 months following the study, severe trauma subjects
reported greater decreases. A significant negative association was found between
trauma severity and posttest illness visits, suggesting that trauma severity moderated
the longer-term health effects of essay writing in the study.

The study was limited such that the severe and nonsevere trauma groups were
not operationally established. That is, no clear criteria were given to participants
regarding what constitutes a severe trauma versus a nonsevere trauma. This is true of
the disclosure variable as well as subjects were not explicitly instructed on what
constitutes a disclosed trauma versus an undisclosed trauma.

In addition to studies that focus on particular physical health and general well-
being measures, Pennebaker (1993) examined the content of the essays of the
experimental groups in three of his past studies (Pennebaker, 1991; Pennebaker et al., 1988, 1990). The rationale behind the analysis was that perhaps there was something about the way the subjects used words, rather than the words themselves. A composite outcome measure was computed by adding the primary dependent measures together after converting them to z scores. The top third and bottom third of this group were chosen as those showing the most and least improvement, respectively. It should be noted that the bottom third of the participants did not get worse; they simply showed no improvement. Essays were run through the Linguistic Inquiry and Word Counts (LIWC) program (Francis & Pennebaker, 1992) to tabulate the number of negative and positive emotion words, cognitive dimensions of insight and causation, and several general text dimensions such as number of words and percentage of unique words. General word usage (average across 3–4 days) and changes in word usage (Day 1 compared to Day 3 or 4) were also examined.

Results indicated that participants whose health improved used significantly more negative emotion words and fewer positive emotion words than those who showed no improvement. Subjects in the improved conditions showed evolution in their writing from fewer to more cognitive words over time. In addition, subjects in the improved condition showed a significant drop in unique words over time compared to the subjects showing no improvement. This measure has been suggested as a crude indicator of psychological coherence, hence those subjects who showed improvement seem to become more focused in their writing.
Independent judges were also used to comment on characteristics such as negative and positive emotion words, self-reflection and the degree to which the essays were organized. Judges ratings of these measures were in the same direction as the LIWC analysis. In addition, subjects who showed health improvements over time were rated as having written more cohesive, organized essays over time and those who showed no improvement were rated as having a gradual deterioration of their essays over time.

In order to address the link between word usage and autonomic activity, a Computerized Autonomic Retrieval of Morphemes and Even Neologisms (CARMEN) machine was developed. Study participants could now type their thoughts on the computer keyboard and the apparatus would link each word to concurrent autonomic levels. Results indicated that language was more closely linked to skin conductance level (SCL) than to heart rate. In addition, the expression of negative emotion was most often associated with increased SCL and positive emotions with decreased SCL. The author concluded that both catharsis and insight might be at work when disclosing traumatic experiences, but in different ways. In addition, the construction of a story through the process of writing seems to be more beneficial than having a constructed story when one begins. Pennebaker (1993) goes on to suggest that in the short run, this disclosure may be psychologically painful and physiologically arousing, but in the long run results in improved physical and psychological health benefits.
Spera, Buhrfeind, and Pennebaker (1994) hypothesized that recently unemployed professionals who disclosed the experience of job loss through writing would show less stress and increased motivation to obtain new employment. In addition, it was hypothesized that they would show greater success in achieving re-employment than those who wrote about job-related but nontraumatic topics and those who did not write at all. Participants were 62 men and 1 woman with a mean age of 54 years. On average, participants had been with their former employer, a large computer and electronics firm, for 20 years and had been in engineering or other professional positions. Participants were randomly assigned to one of three groups: the experimental writing group (EW), the control-writing group (CW), or the nonwriting control group (NWC). The nonwriting control group could not participate in the writing portion of the study due to scheduling conflicts, but agreed to complete questionnaires before and after the study.

At the beginning of the study, participants were asked to complete a health questionnaire and the Transition-Search Behavior Questionnaire, which assessed job search activities, motivation and anxiety levels during the career transition period as well as specific behaviors such as alcohol consumption. At this time, age, weight, blood pressure and heart rate were also recorded. One week following the initial meeting, the writing portion of the study began. Participants in the two writing groups, EW and CW, were asked to write for 20 minutes on 5 consecutive days. The EW group was told to write about their deepest thoughts and feelings surrounding the layoff and how their personal and professional lives had been affected. The CW group
was told to write about their activities related to seeking new employment, but to refrain from revealing opinions or feelings about their situation.

At the end of each writing session, participants were asked to complete a questionnaire assessing to what extent they experienced various physical symptoms and negative moods. In addition, they were asked to disclose how personal the writing was and how much emotion they revealed. On the final day of writing, all participants were asked to complete a final writing questionnaire which asked about their feelings toward the study. In addition, participants were asked to complete the Transition-Search Behavior Questionnaire again. Participants were then asked to return in 12 days to have their blood pressure, heart rate and weight recorded and to complete the Transition-Search Behavior Questionnaire for a final time. This was repeated on the last week of each month for three months. In addition, subjects kept interview logs that they turned in to their outplacement consultants. The outplacement center kept records of the number of phone calls received and the number of job-related letters generated by participants.

Results indicated that subjects in the experimental condition (EW) rated their essays as significantly more personal and revealing of emotion than those in the control group (CW). In addition, participants who wrote about the trauma of losing their jobs (EW) were significantly more likely to find reemployment in the months following the study than control subjects (CW). Three months after the 5-day writing period, 5 participants in the EW condition secured employment. At this same time, no participants in the CW condition had secured employment and 2 subjects in the NWC
condition secured employment. After 8 months, only 5 of the 21 participants in the CW condition had secured full-time employment. Three of 22 participants in the NWC condition had secured employment and 10 of 19 participants in the EW condition had secured full-time employment. Interestingly, the higher reemployment rates were not significantly related to an increase in phone calls, making more contacts or sending out more letters. In addition, there were no significant differences between groups on physiological measures of stress. It was suggested that the socially supportive atmosphere of the outplacement center, at which the unemployed workers had been meeting served to decrease stress levels in the unemployed, thus minimizing differences on this variable. In addition, participants in all groups had been out of work for 6 months or more, allowing them some time to adjust to their unemployed status.

The authors emphasized the importance of addressing the psychological issues of job loss in order to achieve reemployment. They emphasized the need for a period of "psychological processing" before engaging in active employment seeking activities. Participants expressed the need for the Writing in Transition Project to be offered much sooner than it had been.

This study had several limitations. First, with only one female participant, the results cannot generalize to women who have lost their jobs and are seeking employment. Future studies should focus on an equal distribution of male and female participants. In addition, the group was a highly educated and professional group. Participants had a college education and worked in a very technical environment.
Future studies need to be conducted with participants with less education, and/or a wider range of occupations.

In addition, the presence of coping skills and support systems in the lives of the participants were not directly assessed. Research indicates that the presence of a social support system can improve negative responses to a traumatic event (Solomon, Mikulincer, & Avitzur, 1988). It is possible that the participants in the experimental writing condition (EW) had more social support and greater coping skill than those in the other groups. Future studies should assess to what extent participants have access to social support and the degree of coping skills they possess.

A 1995 study by Petrie, Booth, Pennebaker, Davison, and Thomas examined whether expressing emotions through writing about stressful or emotional topics would influence the immunological response to a hepatitis B vaccination program. Forty medical students in their third year of training volunteered for the study. They were 19 women and 21 men with an average age of 21.5 years from Auckland University in New Zealand. None of the participants showed any immunity for the hepatitis B virus. Participants were randomly assigned to write about either emotional or control topics. Participants wrote in a small, darkened basement room on a personal computer for 4 consecutive days.

Participants in the control group were asked to write about different aspects of the use of their time each day and were asked to write in purely descriptive terms with a minimum use of emotion. The experimental group was asked to write about
the most traumatic and upsetting experiences of their whole life and to write about the same topics each day.

Blood for immunological assays was collected on the day after the completion of the 4 writing days, the day before the group was to receive their first hepatitis B vaccination. Blood was again collected immediately before the 1- and 4-month booster vaccinations and at a 6-month follow-up.

The CARMEN software program that measures autonomic activity while participants are typing text measured skin conductance. In addition, participants were asked to complete a six-item physical symptom rating and a six-item mood rating before and after each writing session. Upon completion of each writing session, participants were asked to rate how personal, meaningful and revealing they were of their emotions during the writing, and how much they had held back from sharing this trauma with others.

The Linguistic Inquiry and Word Count (LIWC; Francis & Pennebaker, 1992) text analysis program was used to objectively measure essay content. Essays were classified according to emotional expression (e.g., negative or positive) cognitive strategies (e.g., insight, causation, acceptance), content domains (e.g., friends, school, sex) and language composition (e.g., pronouns, self-reference, past tense).

Results indicated that the experimental group expressed significantly higher amounts of negative emotions such as depression, anxiety and anger. This group used significantly more insight words and rated their essays as significantly more personal and more meaningful and rated them as covering topics they had before not shared
with others. Skin conductance levels (SCL) for the experimental group decreased significantly over the 4-day period. Conversely, the control participants' SCL declined initially and then increased by the end of the treatment. Pretest measures showed no differences between groups on the self-reported mood and physical symptom measures. However, at the end of each writing session, participants in the experimental condition reported significantly more sadness and guilt after writing. In addition, these same participants reported significantly higher scores for “pounding heart” after each writing session, but no significant differences were noted for other physical symptoms.

Congruent with the study hypotheses, participants in the experimental group showed increasingly higher levels of hepatitis B antibodies over time compared with control subjects. The researchers suggested that changes in immune function prompted by emotional disclosure may have potentially important health consequences for the development of protection against infectious diseases. Although the current study was conducted using healthy adults, its significance may be applicable in more marginal situations in which individuals have compromised systems or with vaccinations that are less effective.

Other researchers have begun to point to cognitive changes brought about by writing as a possible explanation for the physical and psychological health improvements. Murray and his colleagues (Donnelly & Murray, 1991; Murray et al., 1989) conducted a series of studies comparing writing therapy to psychotherapy and examined the critical role of such cognitive changes. Cognitive change was measured
by judges who evaluated transcripts on the degree to which participants exhibited a better understanding of the problem as well as an awareness of alternative explanations for the traumatic experiences. Participants were randomly assigned to one of three groups: those who wrote about a traumatic experience (WT), those who talked to a therapist about a trauma (TT), and those who talked to the therapist about superficial topics (TS). Participants who either wrote about a trauma, or talked to the therapist about a trauma (WT and TT), expressed greater emotion and evidenced greater cognitive changes across the 4 days of the study. The WT and TT groups also self-reported cognitive change. These findings are congruent with those of Pennebaker (1989) who reported that participants assigned to the experimental group in his studies consistently report that having written about the trauma allows them to think about it differently.

Pennebaker and Francis (1996) underscore the difficulty in defining and measuring long-term cognitive change as a mediator of health improvement. Particularly problematic is the determination of what dimensions of mental activity best predict long-term improvement. Another cognitive factor related to the writing procedure involves the accessibility of the trauma and what Pennebaker and Francis (1996) call “chronic construct accessibility” reasoning that writing about an event should make it more broadly accessible, thus individuals should be able to identify and recall more dimensions of the trauma. This translates into a kind of automatic accessibility, which is associated with less effortful, conscious processing of the trauma one has written about. A third cognitive factor related to writing about a
trauma is the way it is represented in memory and how that changes by the act of talking or writing about the incident.

The linguistic coding of the trauma by the process of talking or writing about it implies some degree of coherence, self-reflection and the use of multiple perspectives (Clark, 1993). Pennebaker and Francis (1996) reason that, from a linguistic perspective, the use of certain categories of words should reflect these cognitive dynamics. For example, individuals who analyze the cause and meaning of an event are more likely to use causal words and phrases such as because, reason, cause, etc. People who are trying to work through or understand an event are more likely to use words associated with insight such as realize, understand, and reconsider.

Research has also hinted that merely labeling an emotion may actually help reduce its intensity (Berkowitz & Troccoli, 1990; Keltner, Locke, & Audrain, 1993; Schwarz, 1990). In this way, feelings about a trauma that are still new and not yet clearly formed, may be transformed into labeled emotions by the very act of writing or talking about them (Pennebaker & Francis, 1996). Following this line of reasoning, simply analyzing the use of emotion words such as angry, happy, sad should indicate the degree of labeling that has taken place.

Pennebaker and Francis (1996) attempted to identify the degree to which certain cognitive processes could account for health and behavior changes associated with writing about emotional events. The researchers recruited students in their first semester of college and asked them to write about either their deepest thoughts and
feelings about coming to college, or about superficial topics for 20 minutes a day for 3 consecutive days. The week before and the week after the writing, two cognitive tasks were administered to tap schematic judgments and construct accessibility relevant to coming to college.

The essays were analyzed in two ways. The Linguistic Inquiry and Word Count (LIWC; Francis & Pennebaker, 1992) program was used to evaluate the degree to which individual’s essays contained specific types of emotional and cognitive words. In addition, judges were asked to rate each essay along similar dimensions to assess the validity of the LIWC program. Long-term measures of physician visits, grade point average, and psychological adjustment were also collected. The linguistic ratings of the LIWC and independent judges were then used together to predict long-term changes in health, grades, and adjustment.

Subjects were 44 female and 28 male college freshman or transfers in their first semester of college. Participants were assigned to either an experimental writing (EW) or control writing (CW) group. EW participants were asked to write about their deepest thoughts and feelings about coming to college. The CW group was asked to write about any object or event of their choosing, as objectively and dispassionately as possible. Participants were asked to write for 20 minutes. After the last writing session, students were administered several self-report measures to assess their mood and beliefs concerning their essays and the experiment. Participants were asked to rate the degree to which their essays were personal and emotional, and to rate the overall value of the experiment for them.
Six weeks later, on the last day of classes, participants were asked to complete a final questionnaire assessing how well they had adjusted to college. Two open-ended questions were asked regarding what the participant thought the study was about and to explain any negative or positive effects it may have had on them. On the final day of classes, students were debriefed on the study.

The LIWC analyses, unlike that of the judges, indicated that word usage within and across essays was related to long-term health changes. The more the EW group increased their use of insight-related and causal words, the more their health improved. The researchers concluded that the use of words such as these indicate that the students were attempting to understand and find causal meanings for their college-related experiences. Trends in the data also indicated that all students were attempting to construct coherent narratives. Unexpectedly, the CW participants who used greater numbers of causal and insight-related words showed declines in measures of health. Pennebaker and Francis (1996) suggest that the process of trying to find meaning where there is none may be maladaptive.

Results of the analyses of the expression of emotion in language by participants were unexpected as well. The use of negative emotion words was unrelated to long-term health changes. For the EW participants, the more positive emotion words used, the more their physical health improved. This result is in contradiction to earlier findings (Pennebaker, 1993), which showed health improvements in subjects who used more negative emotion words and fewer positive emotion words than subjects who did not improve. Among the CW group, the more
positive emotion words and the fewer negative emotion words used, the more doctor
visits they made following the study. Pennebaker and Francis (1996) compare this to
the repressive coping style in which people work to put on a positive impression,
which leads to poorer health (Jamner et al., 1988). They remark on the importance of
examining a variety of personality indicators in future research to compare with
language use.

The language dimensions were correlated with health changes, but were not
correlated with grade improvements, although the writing technique itself was in
general, associated with greater academic performance. The researchers suggest that
other dimensions of writing that are not associated with cognitive or emotional
language directly may be correlated with grades. Pennebaker and Francis (1996)
suggest that future research explore whether people who write about traumas then
ruminate about them less, allows them to focus on schoolwork more effectively.
Further, it may be that, in the short run, writing about the trauma is associated with
more immediate health improvements, but in the long run, may lead to subsequent
cognitive processing which ultimately influences other areas of people’s lives (Wegner
& Erber, 1993).

The researchers also emphasize the importance of the writing paradigm itself.
It is the participants who chose the topics and directions they agree to disclose.
Perhaps the chosen topics are the driving force influencing health change rather than
language itself. They suggest that the analysis of language may reflect important
cognitive and emotional processes rather than influencing the underlying processes and suggest further analysis into natural speech and written language.

Other studies have attempted to examine various components of the writing therapy paradigm, such as the mode of expression. Murray and Segal (1994) conducted a study to test the hypothesis that the differential effects of psychotherapy and written expression on residual negative mood were due to the vocal expression inherent in psychotherapy. Sixty female and 60 male college students were recruited and randomly assigned to one of four groups. Participants either spoke into a tape recorder with no one present, or wrote for the same time period. Topics were either one of the most traumatic experiences of their lives, or trivial topics. The procedure occurred over 4 consecutive days, and required that each participant write or talk into the tape recorder for 20 minutes per session.

Results of the study indicated that both writing and talking about a trauma had therapeutic effects, and equally so. Dependent measures included a mood scale to assess changes in mood from beginning to end of each session (and from session to session), pre- and postsession questionnaires to assess recency, painfulness, and how often the trauma is thought of, and measures on content ratings of all written material. The two procedures were equally effective in producing change in self-report measures including an immediate elevation of negative mood and a slight residual of negative feelings about oneself. The researchers suggested that this upsurge in negative mood could potentially result in producing a high drop-out rate, thus limiting the practical use of the procedure.
Brewin and Lennard (1999) hypothesized that a randomly assigned group of college students writing long hand about a stressful event would report greater arousal of negative affect, greater disclosure, and greater perceived benefit than the group assigned to write about a stressful event on the typewriter. Participants demonstrated the ability to type before being assigned to groups. In addition to the two trauma writing groups, typing trauma (TT) and writing trauma (WT), there were two control groups: typing control (TC), in which participants were asked to type a description of the days events; and the writing control group (WC), in which participants were asked to write long-hand about the day’s events.

Results indicated that participants writing long-hand about a traumatic event (WT) as compared to typing about a traumatic event (TT) did in fact self-report greater negative affect as measured by the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988), greater disclosure, and greater perceived benefit.

Brewin and Lennard (1999) suggest that the act of typing may provide an additional load on working memory, such that, even for moderately experienced typists, it may reduce the capacity for self-focus and emotional involvement. They suggest that this may lead to lower subjective distress. Alternatively, it is suggested that people are more familiar with sharing personal, emotionally laden material using hand-written expression, and that typing is associated with more impersonal, school or work-related information.

The study was limited by the student sample and may not generalize to other populations. In addition, the study looked at a psychologically healthy group of
people. A study such as this would be useful using more clinically relevant populations. In future studies, examination of these same variables with subjects for whom typing is no distraction, i.e., professional typists, could test the hypothesis the authors suggest regarding the additional loading on cognitive resources.

**Research Synthesis of Writing Therapy Studies**

A meta-analytic review of the written emotional expression literature was conducted to evaluate the overall significance and effect size of the brief writing task (Smyth, 1998). This effect size was examined across three outcome measures: psychological well being, physical health, and more general functioning. In addition, this review sought to determine the moderating factors through which the effect of the writing task could be attenuated or enhanced. The specific factors examined included participant characteristics, dose, essay content instructions, outcome type, and publication status. All studies contained a variant on Pennebaker and Beall’s (1986) original writing task. Only randomized experiments were included and following the predetermined criterion, 13 studies were examined.

Results of the meta-analysis indicated that written emotional expression produced significant health benefits in health participants with an effect size of $d = .47$ which represented a 23% improvement of the experimental group over the control group. According to Smyth (1998), this effect size is similar to or larger than those produced by other psychological, behavioral, or educational treatments (Barnes, 1986; Lipsey & Wilson, 1993; Meyer & Mark, 1995). Smyth (1998) adds that,
although it is not possible to compare effect sizes between studies when outcome
measures are not the same, this effect is similar to that found in other quantitative
analyses of psychological interventions.

Six moderating variables across three outcome types were found to explain
significant within-group variance in effect size. Overall effect sizes were moderated by
two variables. A higher percentage of males in a study were related to higher mean
effect sizes, as was longer periods over which writing sessions were spaced.

Psychological well-being effect sizes were moderated by three variables, each
increasing mean effect size: the use of student participants, instructions to write about
current traumas (as opposed to past traumas), and unpublished studies. In addition,
physiological functioning effect sizes were higher in studies that instructed
participants to write about past or current traumas (as opposed to past trauma only).

Student participants were found to have significantly higher effects for
psychological well-being outcomes than non-students. Smyth (1998) suggests that as
non-student participants were on average older than student participants (48.5 years
vs. 18.8 years, respectively), it is possible that more rigid views of the self made it
more difficult for the writing to produce change. However, that age was unrelated to
well-being outcomes lessens the plausibility of this explanation.

Results also indicated that writing may be more effective for males than
females. It was suggested that although traditional sex roles make it less likely for
men to disclose a trauma or express emotion than women (Ptacek, Smith, & Zanas,
1992), they may experience greater benefit from lower prewriting levels of emotional expression.

The amount of time over which the writing intervention was spaced was positively related to the overall effect size, implying that lengthening the time course of the writing task should increase its effect. Similarly, prolonged exposure strategies are thought to provide greater opportunity for improvement (Foa & Riggs, 1993).

Effect sizes were higher for unpublished studies, contrary to the expectation of publication bias which assumes that published studies will have higher effect sizes (Smith, Glass, & Miller, 1980). However, it should be noted that effect sizes were higher for unpublished studies within only one specific outcome type (psychological well-being).

The instructional set regarding the trauma participants were to write about was unrelated to overall effect size, but participants writing about only current traumas had well-being outcomes superior to those of participants instructed to write about any trauma (past or current). Smyth (1998) suggested that addressing ongoing traumas linked more intimately to daily life may produce greater well-being change than addressing past traumas that may be less relevant to daily experience.

Finally, short-term distress was increased by the writing task and was unrelated to all long-term outcomes examined. Thus, although all studies reported mean increases in distress, experiencing relatively more short-term distress does not appear to lead to greater benefit. This result supports the view that the trauma-related fear network must be fully activated for improvements to be made (Foa & Kozak,
1986; Foa, Riggs, Massie, & Yarczower, 1993). However, although short-term distress may be necessary for cognitive change, the amount of short-term distress was not related to improvement.

**Writing Therapy and PTSD**

At the National Center for PTSD in West Haven, Connecticut, researchers at the V.A. Medical Center have examined the utility of writing therapy in the treatment of PTSD since the early 1990s (Feldman, Johnson, & Ollayos, 1994). The use of writing therapy is threefold: (1) writing allows for the preservation of memories and acts as a defense against anxiety related to death; (2) writing provides an opportunity for the client to express and overcome shame and to integrate what are often very fragmented experiences; and (3) writing is a way to bear witness to the horrific experience of the client, thus bridging the gap between private image and public language (Feldman et al., 1994).

The V.A. program utilizes writing therapy as part of a larger treatment program, the goal of which is to place veterans experiences into a developmental perspective, provide intensive training on management of symptoms and negative affect, and improving family and community relationships. The program includes intensive individual, group and family therapy, and creative arts therapies such as music, drama, poetry, and art therapy.

The program offers a staged approach to treatment in which the writing therapy generally follows the same sequence. Veterans are required to write, and are
given structured guidelines in a group setting. They are then required to read their writing in front of both staff and other veterans, often evoking emotion and vulnerability. Feedback is given to the veteran by the group in the form of verbal reassurance and physical comfort. Group members are encouraged to reflect upon common experiences and discuss differences as well. Finally, the written work is shared with significant others in the veterans life. In this way, the veteran may partake in a “corrective experience” of revealing their innermost feelings, and being accepted.

The writing develops over time and moves through several stages. In the beginning, veterans are resistant to sharing their experiences noted by the defensive stage. The next stage is characterized by very broad, general writings about experiences from war. This is called the conventional stage. In the conflictual stage, the veteran allows his or her internal experience to come forward. The writing at this stage is often fragmented or confused and is accompanied by affective arousal which may be so intense that the veteran reverts back to the conventional stage. In the authentic stage, veterans begin to own their experiences, and express them in powerful, clear, emotionally laden writing.

The writing therapy includes several types of writing. Descriptive writing engages the veteran by asking them to write an autobiography and each of their five most traumatic memories. Reflective writing requires the veteran to record daily thoughts in a journal in an attempt to keep the person focused on his or her own internal process (Fox, 1982; Progoff, 1981). In the creative writing stage, veterans are encouraged to write poetry to access and symbolize their internal experience. Poetry
readings are encouraged and toward the end of the program, the poems are copied and displayed for others to share. In the latter stages of treatment, expository writing is utilized to communicate with the world about their opinions in one of three forms: the Book of Remembrance, letters to the living, or the ceremony for the dead.

The Book of Remembrance is derived from the literary and archival work of Holocaust survivors and stands as a permanent testimony of the veteran’s experience. The letters to the living afford the veteran the opportunity to reconnect with people in their lives with whom they have lost touch. This is most often family members, but includes old friends as well. The ceremony for the dead is a tribute to the veteran’s buddies who were killed in combat. The process allows the veteran to complete the mourning of losses that were avoided during the trauma.

The researchers suggest that it is the externalization of feeling into a concrete form and the emotional distancing by circumventing personal demands that make the writing therapy so powerful. In addition, they suggest that the shift in awareness between the creator and the observer, and the use of consensual language to communicate to others allows writing therapy to be such a powerful tool in the treatment of PTSD (Felman et al., 1994).

More recently, Gidron, Peri, Connolly, and Shalev (1996) examined whether PTSD patients could disclose their trauma in writing within a brief time and what the effects of such disclosure might be on their self-reported mental and physical health. Fourteen trauma survivors seen at a trauma clinic in Jerusalem, Israel were visited in their homes for the study. Participants were randomly assigned to either the disclosure
condition \((N = 8)\) or the casual writing control condition \((N = 6)\). Participants in the disclosure condition were asked to write for 20 minutes on 3 consecutive days about their most traumatic experiences. In addition, in a brief, predetermined format, participants were asked to elaborate orally on the most traumatic event about which they wrote. The control group was asked to report on their daily agenda without reference to affect, and to describe one daily activity orally.

Upon completion of their writing assignment on the third day, participants were asked to complete the Positive and Negative Affect Schedules. Five weeks later they were asked to complete all measures except the Mississippi Scale one more time.

The groups were not significantly different on any of the demographic variables. However, the amount of time that had passed since the trauma for the disclosure patients was significantly longer than for the control group. Content analysis (Pennebaker et al., 1988) of the writing samples indicated that disclosure participants wrote significantly more self-reference words (e.g., \(I, me\)), emotional words (e.g., afraid, anxious), physical words (e.g., painful, headache), and total number of words. In addition, the disclosure group reported higher state-negative affect at Day 3 than did the control group.

At 5 weeks, the disclosure patients reported relatively larger increases in the number of health care visits. The percentage of written emotional words was positively correlated with the avoidance and intrusive symptom measures of the Impact of Events Scale and the percentage of written physical words was positively correlated with the number of health care visits at follow-up.
These findings do not support the findings of previous studies with mentally healthy subjects (Pennebaker et al., 1988, 1989) in which participants who disclosed their trauma improved on measures of subjective distress. The researchers suggested several possible explanations for their findings. The PTSD patients in their disclosure sample may have failed to use coping resources to benefit from the trauma elicitation/exposure (Pitman et al., 1991) and may have a neuropsychological difficulty in extinction of their trauma-related responses (Charney, Dutch, Krystal, Southwick, & Davis, 1993).

It was also suggested that the short writing sessions might not have had a sufficient effect on PTSD patients. In essence, these patients may require longer writing sessions in order to exhaust their conditioned aversive responses (Stern & Marks, 1973) and may require a longer period of time after disclosure to reevaluate the probability of threat (Foa et al., 1991) and resolve the trauma.

This study was limited by a small sample size and a lack of objective health outcomes. Overall results of the study suggest that written disclosure with coping skills training may be recommended for PTSD patients due to the negative consequences of trauma disclosure for PTSD patients in this sample.

Largo-Marsh and Spates (1997) compared EMDR to a structured writing therapy intervention. Twenty-four male and female participants were recruited and met criteria A (experience of a traumatic event) and at least one of the remaining criteria including re-experiencing of the event, persistent avoidance of thoughts or activities, or hyperarousal. Subjects were randomly assigned to one of the two
treatment conditions, participating in up to three 1-hour sessions of either EMDR or structured writing directed at PTSD symptoms associated with a referenced traumatic event. The Computerized Diagnostic Interview Schedule (CDIS; Robins et al., 1981) was used to determine the presence of PTSD symptoms. At the time of intake, 18 of the 24 participants met full *DSM-IV* criteria for PTSD (APA, 1994) for at least one traumatic event. In addition, participants completed the SCL-90-R and the Impact of Events Scale to monitor symptom change over the course of the study. Each was administered during the initial screening, posttest and follow-up.

The State-Trait Anxiety Inventory (Form Y) (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) was used to assess participants’ subjective experience of anxiety at pretest, posttest, and follow-up, along with several measures specific to the EMDR treatment protocol (SUDs; Wolpe, 1990; VoC; Shapiro, 1991).

The two treatments were similar in several ways. Both began with an explanation of and rationale for the treatment. The therapist remained with the participant in both treatments, asking the subjects to periodically provide ratings of subjective distress (SUDs) or VoC ratings. The therapist would direct the subject to focus on the cognitive, emotional, and sensory aspects of the traumatic event as well. The procedures for the two treatments were different, with different criteria for termination for each. For the EMDR subjects, treatment was terminated when the VoC score was self-reported as 6 or 7 (out of a possible 7) at two consecutive assessments. Termination for the writing therapy sessions was independent of the
VoC scores, as participants in the writing therapy sessions were not asked to provide VoC ratings, and consisted of only two consecutively low (0, 1, or 2) SUDs ratings.

Results of the study indicated that subjects evidenced an overall reduction in symptoms at follow-up. Consistent with the findings of Pennebaker (1993), many subjects evidenced greater arousal levels at the conclusion of the writing sessions, as indicated by the STAI scores taken at the beginning and end of the first treatment session for the writing subjects. Both EMDR and the writing procedure were effective in significantly reducing posttraumatic symptoms and were statistically indistinguishable from one another in this regard. However, process measures within sessions, namely SUDs and VoC scores suggested patterns of improvement within sessions, with a more pronounced reduction occurring between pre- and posttest in the EMDR group, sometimes followed by a slight increase in symptoms reported at follow-up. In contrast, the writing therapy subjects reported a more gradual and continual amelioration of symptoms, with characteristically more noticeable reductions between posttest and follow-up assessments. For both groups, treatment gains were largely maintained at follow-up, which was taken about 1 month after posttest.

A variant of Pennebaker's writing paradigm was developed by Gidron et al. (2001). The researchers developed the Memory Structuring Intervention (MSI) in which therapists approached the trauma survivors with an a priori set of time periods. The therapist listened to and clarified details of the trauma given by the participant according to these time periods. The therapist then repeated the trauma narrative in
an organized, labeled, and logical manner, and added insightful comments where appropriate. The participant was asked to repeat this newly constructed version of the trauma back to the therapist. The participant was then asked to practice the re-telling of the constructed version of the trauma to friends and/or family members in an effort to enhance the attempted memory shift. The participant then rehearsed the retelling one additional time with the therapist.

Using this model for the intervention, the researchers compared MSI to a supportive-listening control group in a single-blind randomized-controlled design. Subjects were 17 men and women survivors of a motor vehicle accident who presented to the ER no more than 24 hours after the accident. Participants exhibited no brain damage, were released from the ER within 24 hours of admission, thus exhibiting only minor injuries. In addition, participants had a heart rate greater than or equal to 95 beats per minute (a predictor of PTSD; Shalev et al., 1998).

Participants were interviewed by phone and a total of 17 participants took part (n = 9 supportive listening; n = 8 MSI). Following the intervention, participants were contacted 3 to 4 months later for follow-up evaluation of symptoms.

At follow-up, MSI participants reported significantly less frequent total PTSD symptoms, including intrusion and arousal than the supportive listening group. No significant differences were found in relation to avoidance symptoms. Although preliminary, these results present promising possibilities for the prevention of PTSD.

The study was limited in several ways. Participants experienced a specific type of trauma (motor vehicle accident). Follow-up studies utilizing larger populations
with varying traumas would help to confirm results as well as provide data regarding generalizability of the results. In addition, no baseline levels of PTSD symptoms were taken which makes it impossible to say that symptoms were actually reduced by the intervention. Finally, it was noted that the MSI participants received more attention (time on the telephone) from therapists than controls, which may have influenced results.

Brown and Heimberg (2001) also examined the effect of disclosing traumatic memories to others. This study included 85 women college students who reported being victim of either an attempted or completed rape. The researchers utilized a 2 × 2 design and compared writing about only factual information versus writing about factual information and emotional response, as well as reading to oneself versus reading to another woman. Pretest measures and 1-month posttest measures were taken to assess symptoms of dysphoria, social anxiety, and PTSD.

Results of the study indicated that rape victims who read their narratives to another female did not experience greater improvement after 1 month than those who read alone. In addition, rape victims who wrote about the facts and the emotional response to the trauma did not show greater improvement in symptoms than those who wrote about the facts only.

This study also examined the content of the written material to see whether the degree of disclosure was associated with symptom reduction. Improvement was predicted by two indices of degree of disclosure; the number of words (degree of detail) and the number of self-references (degree of personalization). The number of
words in the narrative was associated with the likelihood of sharing the trauma with another person during the 1-month follow-up period. A curvilinear relationship was shown between the number of self-references and symptom reduction. Thereby, a moderate number of self-references was associated with a decrease in symptoms and a high or low level associated with increased social anxiety.

The study was limited in that there was no true control condition such as writing about a trivial event. In addition, participants sat face-to-face affording no confidentiality or anonymity between participants, which may have increased anxiety levels. Finally, participants also wrote on only one occasion, and without corrective feedback. It was suggested that because of the severity of the trauma of rape, this may not be a sufficient intervention for significant symptom improvement.

Problem Statement

Thus, a number of studies have suggested that writing about traumatic experiences may have significant mental and physical health benefits (Feldman et al., 1994; Largo-Marsh & Spates, 1997; Pennebaker & Francis, 1996; Pennebaker et al., 1988; Petri et al., 1995). The current study was designed to assess the treatment efficacy of writing therapy for individuals with varying degrees of stress related symptoms. Specifically, the study examined to what extent writing therapy was useful in reducing the symptoms of clinically significant levels of Post-Traumatic Stress Disorder as measured by the CAPS-DX. In addition, this study examined the extent
to which writing therapy was effective in reducing symptoms of burnout as measured by the Maslach Burnout Inventory.
CHAPTER III

METHOD

Participants

Participants were recruited from the Kalamazoo, Michigan community through newspaper advertisements and public postings (Appendix A). In addition, classrooms on the Western Michigan University (WMU) campus were canvassed. Participants were also recruited from the Cincinnati Metropolitan area via postings at Xavier University in Cincinnati, Ohio (Appendix B), fliers posted at the Cincinnati V.A. Medical Center (VAMC; Appendix C), and referrals from V.A. clinicians. Brochures describing the study were also distributed throughout these areas (Appendix D). Fifty-four participants volunteered to participate.

Potential participants were males and females 18 years and older who, by their own report, either had experienced a traumatic event or were involved in a distressing work situation. Participants were included in the study if they either met diagnostic criteria for PTSD as measured by the Clinician Administered PTSD Scale or scored "high" on both emotional exhaustion and depersonalization on the Maslach Burnout Inventory.

In addition, participants were assessed for comorbid psychiatric diagnoses to exclude individuals with concurrent DSM-IV borderline and obsessive-compulsive personality disorder characteristics, or reported symptoms of psychosis. These
symptoms were assessed using a questionnaire developed by Cusack (Cusack & Spates, 1999) and modified for this particular study. Participants were also excluded if they reported suicidal ideation. During recruitment at the Cincinnati VAMC and Xavier University, potential participants were also assessed for Major Depressive Disorder. Those who met criteria for the disorder were subsequently referred for medication evaluation prior to being accepted into the study. Lastly, participants who were currently receiving psychotherapy or had not been stable on antidepressant medication for at least 8 weeks were excluded. Ineligible volunteers were referred for alternative treatment.

Setting

Assessment and treatment sessions were conducted in private therapy rooms at the WMU Psychology Clinic, in private therapy rooms at the Cincinnati V.A. Medical Center, or in private therapy rooms on the campus of Xavier University. All assessment and therapy sessions were directed by trained research assistants and were supervised by a licensed clinical psychologist.

Assessors and Therapists

All assessors and therapists were trained in the study procedures. Specifically, instructions were followed for each session including specific instructions that the research assistant read to the participants. All assistants received copies of the assessment instruments as well as a study manual. Training sessions included verbal
explanation of the study procedures and assessment instruments. In addition, research assistants observed and then participated in "mock" sessions. Each assistant then observed actual assessment and treatment sessions prior to completing these on their own. Following training in the assessment and treatment sessions, the research assistants were supervised and observed by the investigator. All assistants attended regular team meetings to provide further clarification and training and to answer questions throughout the course of the study.

Sixteen research assistants completed the assessment, treatment, and follow-up sessions. Thirteen of these assistants were undergraduate students majoring in psychology from Western Michigan University. Two of these undergraduate students served as Study Coordinators and assisted in scoring and recording data. One assistant was a graduate student in the doctoral program in clinical psychology at Western Michigan University. Three research assistants were undergraduate psychology majors from Xavier University in Cincinnati, Ohio. Research assistants conducted a majority of the screening and treatment sessions. In addition, assistants who conducted an assessment session for a given participant did not conduct treatment sessions for the same participant.

Measures

Two questionnaires developed by the researcher were used in this study. The first was used for screening purposes at the beginning of the study. The second asked about health center visits before, during, and after the study. In addition, several
standardized clinical assessment instruments were used in this investigation. These included the Life Events Checklist, Clinician Administered PTSD Scale—Current and Lifetime Diagnosis Version (CAPS-DX; Blake et al., 1990, 1997), Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981) and accompanying demographic questionnaire, Shipley Institute of Living Scale (Shipley, 1953), State-Trait Anxiety Inventory (State Version; STAI-S; Spielberger et al., 1983), Beck Depression Inventory—II (BDI-II; Beck, Steer, & Brown, 1996), Coping Resources Inventory (CRI; Hammer & Marting, 1987), and Physical Health Questionnaire (PHQ; Bellville, personal communication, 2002).

For participants recruited at the Cincinnati VAMC, an additional questionnaire regarding DSM-IV diagnostic criteria for depression was included as recommended by the University of Cincinnati Human Subjects Institutional Review Board. Participants who endorsed symptoms indicative of a diagnosis of Major Depressive Disorder were referred to their primary care physician for medication evaluation and medication stabilization prior to entering the study.

**Personality Questionnaire**

A personality assessment based upon DSM-IV criteria for borderline and obsessive-compulsive personality disorders was revised for use in this study (Cusack & Spates, 1999). Questions assessing for psychotic thinking were added to the original assessment and questions were reorganized. Subjects were read a list of 18 statements and asked to indicate “How often do you find yourself . . .” reacting to
each situation. Scale scores of “0” (Not at all), “1” (Sometimes), or “2” (Frequently) were used. Scores for each of the personality or thought disorders (Obsessive Compulsive Personality Disorder, Borderline Personality Disorder, and Psychoticism) were added together and then divided by the total number of questions for that category (averaged). If the average score for any of the three categories was greater than 1, indicating the presence of personality disorder characteristics, the participant was excluded from the study.

**Clinician-Administered PTSD Scale for DSM-IV (CAPS-DX)**

The CAPS-DX is a 30-item clinical interview developed to measure typical signs and symptoms of PTSD. The instrument provides a method to evaluate the frequency and intensity of individual symptoms within the past month, as well as assessing the impact of these symptoms on social and occupational functioning.

The majority of currently published psychometric data utilizes the original CAPS instrument. However, two articles, submitted for publication, provide information on the most comprehensive investigations of the psychometric properties of the CAPS (Weathers et al., 1999). The CAPS-1 has adequate psychometric properties and specific care was taken in the development of the CAPS-DX to ensure backward compatibility to the original version (Weathers et al., 1999). Test–retest reliability for the CAPS-1 ranged from .77 to .96 for the three symptom clusters and .90 to .98 for all 17 items. Internal consistency (alpha coefficients) for the severity scores (frequency and intensity) for each of three symptom clusters ranged from .85
to .87 and internal consistency for all 17 items was .94. Convergent validity for the total severity score of the instrument was $r = .91$ for the Mississippi Scale for Combat-related PTSD (Keane, Caddell, & Taylor, 1988) and $r = .77$ for the PK scale of the MMPI (Keane, Malloy, & Fairbank, 1984).

The Maslach Burnout Inventory (MBI)

The MBI (MBI; Maslach & Jackson, 1981) was used to assess feelings and attitudes about one's job. Three versions of the inventory are available. These include the Human Services Survey (MBI-HSS; Maslach & Jackson, 1996), which was designed for professionals in the human services; the Educators Survey (MBI-ES; Maslach & Jackson, 1996) designed for use with educators; and the General Survey (MBI-GS; Schaufeli et al., 1996) designed for use with workers in occupations other than human services and education. However, no participants reported employment in an educational field, so this measure was not utilized.

The MBI-Human Services Survey yields scores on three subscales: emotional exhaustion, depersonalization, and personal accomplishment. High scores on the emotional exhaustion subscale are indicative of emotional overextension or being worn out by one's job. High scores on the depersonalization subscale are indicative of a lack of concern or feeling for one's clients. Low scores on the personal accomplishment subscore reflect feelings of incompetence or ineffectiveness in one's work. Separate scores are attained for each subscale to reflect the degree to which an
individual experiences these feelings related to his or her job. The MBI thus yields a total of three subscales for each form used.

The MBI-HSS has adequate psychometric properties and is widely used in burnout research. On the basis of the normative sample, internal consistency (Cronbach’s alpha) ranged from 0.89 to 0.74 across the six subscales. Test-retest reliability coefficients at 2- to 4-week intervals were as follows: .82 (frequency) and .53 (intensity) for Emotional Exhaustion, .60 (frequency) and .69 (intensity) for Depersonalization, and .80 (frequency) and .68 (intensity) for Personal Accomplishment. The authors attribute the lower reliability of the intensity subscales to the changeable nature of feeling states. All coefficients were significant beyond the .001 level.

Convergent validity coefficients ranged from 0.61 between the Maslach Burnout Inventory and the Meier Burnout assessment, to 0.65 between the Maslach Burnout Inventory and the burnout self-rating. However, measures of burnout were also highly correlated with depression, thereby weakening support for burnout’s discriminant validity.

The MBI Human Services Demographic Data Sheet was used to identify the subjects’ age, sex, race, religion, marital status, education and employment-related information. The entire questionnaire took about 10 minutes to complete.

The MBI-General Survey was developed to assess burnout in occupations without direct personal contact with service recipients or with only casual contact with people. This assessment has three subscales including Exhaustion (Ex), Cynicism
(Cy), and Professional Efficacy (PE). Both the Exhaustion and Professional Efficacy subscales of the MBI-GS are similar to the Exhaustion and Personal Accomplishment subscales of the MBI-HSS, respectively. The Cynicism items on this survey reflect an indifferent attitude toward work, referring to the work itself rather than to personal relationships with people at work as in the Depersonalization subscale of the MBI-HSS. Similar to the MBI-HSS, a high degree of burnout is demonstrated by high scores on both Exhaustion and Cynicism subscales and low scores on Professional Efficacy.

A series of principal component analyses demonstrated that Exhaustion was associated with mental and physical strain, work overload, and role conflict at work. Professional Efficacy was related to satisfaction, organizational commitment, job involvement, and access to resources. Cynicism was primarily related to the same constructs as Exhaustion but with negative secondary loadings on the attitudinal constructs associated with Professional Efficacy. Reliability studies showed stability coefficients of .65 (Exhaustion), .60 (Cynicism), and .67 (Professional Efficacy) at a 1-year interval (Leiter & Durup, 1996).

A Demographic Data Sheet was not provided with the MBI General Survey so one was developed by the researcher. This Demographic Data Sheet identified the subjects' age, sex, race, religion, marital status, education and employment-related information. The entire questionnaire took about 10 minutes to complete.
Shipley Institute of Living Scale

The Shipley Institute of Living Scale was used as an assessment of general intellectual functioning in participants. The scale consisted of two, time-limited, self-administered subtests: a 40-item test of vocabulary and a 20-item test of abstract thinking. Participants were allowed 10 minutes to complete each subtest. The vocabulary portion is a multiple-choice format in which participants were asked to choose which of four words most closely defines the targeted word. The abstraction portion asked that participants fill in blanks with letters or numbers to logically complete the presented sequence.

Psychometric properties of the instrument are adequate with test–retest reliability coefficients ranging from 0.60 to 0.82 for Total score and an internal consistency of 0.92 for the Total score. Correlations between the Shipley and the WAIS (Wechsler Adult Intelligence Scale; Wechsler, 1955) IQ range from .73 to .90 with a median correlation of 0.79. A correlation of 0.74 was reported between the Shipley Total score and the WAIS-R (Wechsler Adult Intelligence Scale–Revised; Wechsler, 1981) IQ score.

State-Trait Anxiety Inventory (State)

The state portion of the State-Trait Anxiety Inventory, Form Y (STAI; Spielberger et al., 1983) was used to assess the degree of anxiety experienced by the participants. The inventory consists of 20 items designed to measure state experiences of anxiety. State anxiety refers to the affective response to a particular situation, in
contrast to Trait anxiety, which is considered to be a more stable, long-standing quality of affect of the person.

Item responses for the State inventory include endorsement scores of 1—Not at all, 2—Somewhat, 3—Moderately So, and 4—Very Much So. Scores are then summed and may range from 20 to 80. Psychometric properties of the inventory are adequate. The test–retest reliabilities for the State-Anxiety section of the test are unexpectedly low, since the instrument measures a temporary condition. Alpha coefficients for the internal consistency of the Trait and State-Anxiety scales range from .83 to .92. Spielberger et al. (1983) correlated the instrument with the IPAT Anxiety Scale and achieved a validity coefficient of .75, and with the Taylor Manifest Anxiety Scale, for a validity coefficient of .80.

Beck Depression Inventory-II

The Beck Depression Inventory-II (BDI-II; Beck et al., 1996) was administered in order to measure the degree of syndromal depression (e.g., the number of statements of depressed mood each participant endorsed such as sadness, negative self-concept, sleep, and appetite disturbance). The inventory consists of 21 items, each with four numbered statements which may be scored from 0 (denoting a normal mood) through 3 (denoting a depressed mood). The scores for these 21 items are summed to give a total score between 0 and 63. A score of 0–8 indicates a normal mood, 9–13 minimal depressive symptoms, 14–19 mild depressive symptoms, 20–28
moderate depressive symptoms, and 29–63 indicating severe levels of depressive symptoms.

The psychometric properties of the instrument are adequate, with a test–retest correlation of .93 after 1 week. Convergent validity of the BDI-II with the Hamilton Psychiatric Rating Scale for Depression (HRSD; Hamilton, 1960) was $r = .71$. Discriminant validity was demonstrated by correlation with the Hamilton Rating Scale for Anxiety (HARS; Hamilton, 1959) of $r = .47$.

**Depression Screen**

The Depression Screener was added prior to data collection at the Cincinnati VAMC and Xavier University as required by the University of Cincinnati Human Subjects Review Board. The screening instrument was derived from the DSM-IV diagnostic criteria for Major Depressive Disorder and questions regarding depressive symptoms were taken directly from the DSM-IV (APA, 1994).

**The Coping Resources Inventory (CRI)**

The CRI (Hammer & Marting, 1987) is a 60-item inventory that measures coping resources or “those resources inherent in individuals that enable them to handle stressors more effectively, to experience fewer or less intense symptoms upon exposure to a stressor, or to recover faster from exposure” (Hammer & Marting, 1987). The CRI distinguishes five domains of coping resources: cognitive, social, emotional, spiritual/philosophical, and physical. The inventory can be completed in
about 10 minutes. Internal consistency reliability using Cronbach’s alpha is .91 for the Total Resources score and range from .71 to .84 for the subscales. Test–retest reliability at 6 weeks was .73 for the total score. Convergent validity coefficients ranged from .61 for the Spiritual/Philosophical scale to .80 for the Physical scale. These constructs were measured against simple self-ratings of coping resources.

**Physical Health Questionnaire**

Participants were also asked to complete a 12-item self-report paper and pencil instrument designed to assess overall physical health. This instrument provided information on the health status of subjects and was used to evaluate the relationship between physical health and traumatic stress. The instrument was developed by Bellville (personal communication, 2002) for use with research on PTSD and takes about 10 minutes to complete.

**Health Care Visits Questionnaire**

A 1-item questionnaire was developed by the researcher to ascertain the number of visits to health care professionals due to illness. Visits were assessed for 2 months before the study, during the study and at 1- and 2-month follow-up sessions. Illness was defined as any presenting complaint that could be attributed to an acute infection or other internal cause related to injury. Regular check-ups, health prevention (e.g., flu shots) or maintenance (allergy shots), or other routine tests (PAP
smears) were not counted as illness visits. More than one visit to the physician for the same complaint in an 8-day period was coded as a single visit.

**SUDs Rating Sheet**

A rating sheet was developed by Cusack (Cusack & Spates, 1999) and revised for this study. The researcher asked the participants to rate their “Subjective Units of Distress” (Wolpe, 1990) on a scale from 1 to 10 with “1” indicating no distress and “10” indicating the most distress the participant has ever experienced. Distress was rated with respect to their present level of discomfort about the traumatic event or stressful work environment about which they were writing. The researcher then recorded that rating on the sheet. SUDs ratings were taken at the pretest session, at each of the treatment sessions and at posttest.

**Research Procedure**

Individuals expressing interest in the study contacted the student researcher by phone. After a brief description of the study was provided, the potential participant was queried regarding traumatic experiences, posttraumatic symptoms, and job-related stress. If the individual seemed appropriate for the study, an intake appointment was scheduled.

Informed consent for participation was obtained at the intake session (Appendices E, F, G). At this time, participants were informed that they could seek alternative treatment for their symptoms at any time in conjunction with or as
replacement for the treatment in the study. If the participant chose to seek alternative
treatment, he/she was informed that the data from the study would not be used in the
study results. In addition, participants were made aware that they could contact the
student researcher at any time during the study if problems or questions arose.

A version of the Maslach Burnout Inventory (MBI) was administered based
upon the participant’s occupation as well as the accompanying demographic
questionnaire. Subjects were also administered the Life Events Checklist to assess for
traumatic experiences. The Personality Questionnaire was then administered to
determine if a participant should be excluded on the basis of Obsessive Compulsive or
Borderline Personality Disorder characteristics or evidence of psychosis (Appendix
H). Subjects were notified as soon as possible regarding their inclusion status in the
research study, in most cases at the conclusion of the first screening session. Those
who were excluded were given the reason for exclusion and a referral to a local
practitioner if deemed necessary. A list of mental health resources (Appendices I, J)
was made available to all persons coming in for the intake session regardless of
qualification for the study.

Upon successful completion of the intake, participants were scheduled for the
90-minute assessment session. At the beginning of the assessment session, the
assessor interacted with subjects to establish rapport; clarified what the participant
could expect during the session; and ensured the subject’s comfort, safety, and
willingness to continue participation.
At pretest, subjects were administered the Shipley Institute of Living Scale. This scale took approximately 20 minutes to administer. The Shipley was given first to avoid the interference in cognitive abilities due to increased distress at being reminded of the trauma, that might have resulted from administration of the CAPS-DX.

Participants were then assessed for PTSD using the CAPS-DX clinical interview. This interview took approximately 45 minutes. Participants who endorsed no traumatic events on the Life Events Checklist, or reported few or no distressing responses to a trauma, were not interviewed using the CAPS-DX. These participants were considered part of the “Chronic Stress Group” if the scores on the MBI were sufficient. Participants who did not meet criteria for a diagnosis of PTSD were informed that they did not qualify for the study and were given the Mental Health Referral sheet.

Following the CAPS-DX, participants were asked to rate their current level of comfort with respect to the traumatic event (SUDs level) (Appendix K). Participants then completed the STAI- State, BDI-II, Depression Screener (Appendix L), Physical Health Questionnaire (Appendix M), Health Care Visits Questionnaire (Appendix N), and the Coping Resources Inventory. These self-report measures took about 45 minutes to complete. Subjects were then advised of and scheduled for the treatment sessions. Participants who met criteria for PTSD were placed in the PTSD group regardless of their score on the MBI. Participants who did not meet criteria for PTSD, but did meet criteria for Burnout, were placed in the Burnout Group.
Participants were phoned prior to treatment sessions to remind them of the date and time of their appointment that week (Appendix O). Treatment consisted of four weekly sessions, each 30 minutes in duration. The rationale for and importance of attending each session each week for all 4 weeks was emphasized at that time. Participants were shown to a private therapy room with observational capacities. If observational capacities were not available, the researcher was available outside the room for assistance if needed. Participants were given paper and a writing utensil. Standardized instructions on writing about their trauma or difficult work situation were read to the participant (see Appendix P). The structured writing treatment was targeted at the traumatic event or difficult work situation that the participant identified as most presently distressing. Participants were asked to visualize the event and were then asked to write about it. They were asked to include a narrative of the trauma or difficult situation that occurred as well as their thoughts, emotions, and physical sensations associated with the event.

At the end of each writing therapy session, the therapist read over the material for an informal assessment of the level of distress the participant was experiencing. In addition, participants were administered the BDI-II and STAI-S. These assessments were scored before the participant left the treatment session to assess for suicidality or excessive anxiety due to the writing treatment so that appropriate measures could be taken if necessary.

Upon completion of the BDI-II and STAI-S, participants were asked to remain in the therapy room to relax for several minutes before leaving. After a period
of relaxation, participants were asked to rate their level of comfort with respect to the traumatic event or difficult work situation about which they wrote (SUDs level). If the participant reported a SUDs level of 8 or less, they were permitted to leave the treatment situation without further intervention. However, if a participant had reported a score of 9 or 10 on the SUDs, additional measures would have been taken to calm the patient before allowing them to leave the treatment session. No participants reported levels of SUDs higher than 8 during the study, thus no additional treatment or services were necessary for any participants.

One week after the final treatment session, participants were administered the CAPS-DX, MBI, STAI-S, BDI-II, CRI, and questionnaire regarding health care visits. They were also asked to rate their level of comfort with respect to the traumatic event or stressful work situation (SUDs level). At that time a 1-month follow-up appointment was scheduled. Participants were given four Beck Depression Inventory-IIs (BDI-II) along with stamped envelopes addressed to the student investigator. This was so that depressive symptoms and suicidal ideation could be monitored between sessions. Participants were phoned weekly to remind them to mail their BDI-IIs in to the researcher. One month after the posttest assessment, the CAPS-DX, MBI, STAI-S, BDI-II, CRI, questionnaire regarding health care visits, and rating of their level of comfort with respect to the traumatic event or difficult work situation (SUDs level) were again administered. At the completion of the 1 month follow-up session, a 2-month follow-up session was scheduled and an additional four BDI-IIs and stamped, pre-addressed envelopes were given to the
participant. Again, participants were phoned weekly in order to remind them to mail the BDI-IIs in to the researcher. At the second follow-up session, the CAPS-DX, MBI, STAI-State, BDI-II, CRI, and health care visits questionnaire were then administered for a final time. At the completion of the final follow-up session, participants were debriefed on the study (Appendix Q). In addition, if the participant desired further treatment, he/she was directed to the list of mental health facilities given at the beginning of the study.

If at any time during the study a participant displayed signs of personal distress of sufficient magnitude to warrant interruption of the interview or treatment, the session would have been terminated with minimal effort to calm the participant. However, no participants required additional procedures during any of the treatment sessions.

Research data for each participant were kept in personal folders in a locked filing system at either the WMU Psychology Clinic or the Cincinnati V.A. Medical Center. Maintaining these file systems and participant folders was the responsibility of the student investigator. A master list of participant information (Appendix R) was used to ensure the confidentiality of the research data. Only coded research numbers assigned to each participant linked participant information to the research file. All participant data files will be kept at either the WMU Psychology Clinic or the Cincinnati V.A. Medical Center for 3 years following completion of the study. At that time, hard copies of the data will be destroyed.
CHAPTER IV

RESULTS

Hypotheses

For this investigation, it was hypothesized that writing therapy would reduce symptoms of PTSD and Burnout in individuals endorsing significant levels of related distress. Principal measures included outcome ratings on the Clinician Administered Post-traumatic Stress Scale (CAPS-DX) and the Maslach Burnout Inventory (MBI). Participants were randomly assigned to groups based upon meeting inclusion criteria which included threshold scores on the CAPS-DX structured interview and the MBI questionnaire.

It was also hypothesized that reported symptoms of depression, as measured by the Beck Depression Inventory-II (BDI-II) would decrease significantly across assessment sessions for each group.

Reports of anxiety, as measured by the State-Trait Anxiety Inventory (State Form) STAIS-S and Subjective Units of Distress (SUDs) were expected to first increase, at the start of treatment, and then to decrease across later treatment, posttest, and follow-up assessments. This measure was intended to reflect the process of change across sessions.
Finally, it was hypothesized that as reported symptoms of burnout and PTSD decreased, there would be an increase in reported coping skills. It was also hypothesized that as symptom levels decreased, health center visits would decrease.

Plan for Data Analyses

In order to test these hypotheses, the study examined symptom reports within and between groups across assessment phases (pretest, posttest, and 1- and 2-month follow-up). Within group analyses examined the change in reported levels of symptoms associated with either PTSD, as measured by the CAPS-DX, or Burnout as measured by the Maslach Burnout Inventory. Between group analyses examined the degree of change in reported levels of anxiety, as measured by both the STAI-S and SUDs ratings, and depressive symptoms, as measured by the BDI-II to determine whether change occurred in these symptom reports. Significant differences in the degree of reported change between these groups was also examined.

In order to control for drop out and missing data, a carry forward analysis was then conducted within each group. This analysis consisted of carrying forward the last data point for each of the subjects who had missing data or did not complete one or more assessment sessions after pretesting.

The second hypothesis was examined using a two-way repeated measures ANOVA to determine if BDI-II scores differed significantly within groups across assessment phases as well as between groups. In addition, these scores were examined for change across treatment sessions. Again controlling for drop out, carry
forward analyses were then conducted across assessment phases and then across treatment sessions.

In order to test the third hypothesis, two-way repeated measures ANOVAs were used to determine if there were significant decreases in symptom reports on the STAI-S and SUDs ratings within treatment sessions, across assessment times, and across groups. Carry forward analyses were then completed to address loss of data due to participant drop out or missing data.

For the final hypothesis, the planned correlational analyses on the use of coping skills as measured by the Coping Resources Inventory and the number of Health Center Visits could not be conducted due to the lack of significant improvement in symptoms. Independent sample *t* tests were then conducted to determine if differences between groups existed on these measures.

**Preliminary Analyses**

Twenty-five participants began treatment. Of those, 1 participant dropped out following the second treatment session (PTSD group), 1 dropped out following the third treatment session (PTSD group), and 2 dropped out following the fourth treatment session (PTSD group).

Twenty-one participants completed posttest (PTSD *n* = 12; Burnout, *n* = 9). Two participants dropped out following posttest (PTSD group) and 3 following the 1-month follow-up session (2 in the PTSD group and 1 participant in the Burnout group). Eight participants completed the study through 2-month follow-up in the
PTSD group representing a drop out rate of 50.00% from pretest. Eight participants completed the study through 2-month follow-up in the Burnout group representing a drop out rate of 11.11%. Table 1 depicts the dropout for each group for each session.

Table 1

<table>
<thead>
<tr>
<th>Time</th>
<th>PTSD</th>
<th>Burnout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Treatment 1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatment 2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Treatment 3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Treatment 4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Posttest</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>1 month follow-up</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Completed</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Although the rate of attrition for the PTSD group was high, no significant differences were found in pretest CAPS scores between those who completed the 2-month follow-up assessment and those who did not, \( t(15) = -.76, p = .46 \). Nor were significant differences found in pretest MBI Emotional Exhaustion scores, \( t(7) = -1.04, p = .33 \) or the Depersonalization/Cynicism scores, \( t(7) = -.92, p = .39 \), between those who completed the 2-month follow-up and those who did not. This indicated that individuals who dropped out were not more or less distressed at pretest than those who completed the study.
Demographics

Table 2 presents a summary of demographic characteristics for the 21 participants who completed posttest by group. Independent samples $t$ tests and chi-square calculations were conducted to compare means between groups.

In the PTSD group ($n = 12$), ages ranged from 21 to 77 years ($M = 45.58; SD = 14.56$). In the Chronic Stress or Burnout group ($n = 9$), ages ranged from 25 to 64 years ($M = 40.33; SD = 12.19$). There was no significant difference in the ages of participants in the PTSD group and the Burnout group, $t (19) = .88, p = .39$.

In the PTSD group, 7 participants were male (58.3%) and 5 participants were female (41.7%). For the Burnout group, all 9 participants were female (100.0%). There was a significant difference in gender between the groups Pearson chi-square ($1) = 7.88, p = .005$).

In the PTSD group, 11 participants were Caucasian (91.7%) and 1 participant was African American (8.3%). In the Burnout group, 8 participants were Caucasian (88.9%) and 1 participant was African American (11.1%). There was no significant difference in gender make-up of the groups Pearson chi-square ($1) = 0.00, p = 1.0$).

In the PTSD group, 5 participants were married (41.7%), 3 were single (25%), and 3 were divorced (25%). One participant endorsed “other” as relationship status (8.3%). For the Burnout group, 4 participants were married (44.4%), 3 were divorced (33.3%), and 2 were single (22.2%). There was no significant difference in marital status between the groups, Pearson chi-square ($3) = 0.90, p = .83$).
Table 2

Summary of Group Demographics

<table>
<thead>
<tr>
<th>Demographic</th>
<th>PTSD ((n = 12))</th>
<th>Burnout ((n = 9))</th>
<th>(t)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>(M = 45.58)</td>
<td>(SD = 14.56)</td>
<td>(M = 40.33)</td>
<td>(SD = 12.19)</td>
</tr>
<tr>
<td>Estimated IQ</td>
<td>(102.92)</td>
<td>(6.63)</td>
<td>(104.71)</td>
<td>(3.35)</td>
</tr>
<tr>
<td># of Traumatic Life Events</td>
<td>(6.33)</td>
<td>(4.27)</td>
<td>(3.44)</td>
<td>(2.60)</td>
</tr>
<tr>
<td># Health Conditions</td>
<td>(1.40)</td>
<td>(0.84)</td>
<td>(0.38)</td>
<td>(0.74)</td>
</tr>
<tr>
<td>Gender</td>
<td>(n = 12)</td>
<td>(n = 9)</td>
<td>(n = 12)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>Male</td>
<td>(7)</td>
<td>(58.3%)</td>
<td>(0)</td>
<td>(0%)</td>
</tr>
<tr>
<td>Female</td>
<td>(5)</td>
<td>(41.7%)</td>
<td>(9)</td>
<td>(100%)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>(n = 12)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>African American</td>
<td>(1)</td>
<td>(8.3%)</td>
<td>(1)</td>
<td>(11.1%)</td>
</tr>
<tr>
<td>Caucasian</td>
<td>(11)</td>
<td>(91.7%)</td>
<td>(8)</td>
<td>(88.9%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td>(n = 12)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>Single</td>
<td>(3)</td>
<td>(25.0%)</td>
<td>(2)</td>
<td>(22.2%)</td>
</tr>
<tr>
<td>Married</td>
<td>(5)</td>
<td>(41.7%)</td>
<td>(4)</td>
<td>(44.4%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>(3)</td>
<td>(25.0%)</td>
<td>(3)</td>
<td>(33.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>(1)</td>
<td>(8.3%)</td>
<td>(0)</td>
<td>(0.0%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>(n = 12)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>HS+</td>
<td>(1)</td>
<td>(8.3%)</td>
<td>(0)</td>
<td>(0.0%)</td>
</tr>
<tr>
<td>BA</td>
<td>(10)</td>
<td>(83.3%)</td>
<td>(3)</td>
<td>(33.3%)</td>
</tr>
<tr>
<td>MA</td>
<td>(1)</td>
<td>(8.3%)</td>
<td>(3)</td>
<td>(33.3%)</td>
</tr>
<tr>
<td>PhD/MD</td>
<td>(0)</td>
<td>(0.0%)</td>
<td>(3)</td>
<td>(33.3%)</td>
</tr>
<tr>
<td>Antidepressant Medication</td>
<td></td>
<td></td>
<td>(n = 12)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>Yes</td>
<td>(6)</td>
<td>(50%)</td>
<td>(0)</td>
<td>(0.0%)</td>
</tr>
<tr>
<td>No</td>
<td>(6)</td>
<td>(50%)</td>
<td>(0)</td>
<td>(0.0%)</td>
</tr>
<tr>
<td>Past Psychotherapy</td>
<td></td>
<td></td>
<td>(n = 12)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>Yes</td>
<td>(6)</td>
<td>(50%)</td>
<td>(0)</td>
<td>(0.0%)</td>
</tr>
<tr>
<td>No</td>
<td>(6)</td>
<td>(50%)</td>
<td>(0)</td>
<td>(0.0%)</td>
</tr>
</tbody>
</table>
In the PTSD group, 10 participants had received a bachelor’s degree (83.3%), 1 a master’s degree (8.3%), and 1 participant listed high school plus additional training (8.3%). In the Burnout group, 3 participants had received a bachelor’s degree (33.3%), 3 a master’s degree (33.3%), and 3 participants had received doctoral level education (33.3%). There was no significant difference in education level of the groups, Pearson chi-square (4) = 8.86, *p* = 0.70.

For the PTSD group, the estimated WAIS-R IQ scores, as measured by the Shipley Institute of Living Scale, ranged from 90 to 110 (*M* = 102.92; *SD* = 6.63). For the Burnout group, estimated WAIS-R IQ scores, as measured by the Shipley Institute of Living Scale, ranged from 100 to 108 (*M* = 104.71; *SD* = 3.35). There was no significant difference in the estimated IQ of participants in the PTSD group and the Burnout group, *t* (17) = -6.6, *p* = .52.

For the PTSD group, the total number of traumatic events experienced by participants ranged from 1 to 13 (*M* = 6.33; *SD* = 4.27). The total number of traumatic events experienced by participants in the burnout group ranged from 0 to 7 (*M* = 3.44; *SD* = 2.60). There was no significant difference in the number of traumatic events experienced by participants in the two groups, *t* (19) = 1.79, *p* = .09.

The number of physical health problems related to trauma ranged from 0 to 3 (*M* = 1.4; *SD* = .84) in the PTSD group. The number of physical health problems related to a stressful work environment ranged from 0 to 2 (*M* = 0.38; *SD* = 0.74) in the Burnout group. There was no significant difference in the number of physical health problems between the two groups, *t* (17) = .65, *p* = .52.
Half the participants in the PTSD group \((n = 6)\) reported that they were stable on antidepressant medication during the course of the study and the other half reported they were taking no medication \((n = 6)\). In the Burnout group, none of the participants \((n = 0)\) reported that they were taking antidepressant medication. There was a significant difference between the groups regarding antidepressant medication, Yates’ Chi-Square Correction for Continuity \((1) = 4.09, p = 0.04\).

In the PTSD group, half the participants reported having received psychotherapy in the past for their PTSD symptoms \((n = 6)\) and half reported not having received psychotherapy for PTSD symptoms \((n = 6)\). No participants in the Burnout group \((n = 0)\) reported having received psychotherapy related to their stressful work environment. There was a significant difference between the groups regarding past psychotherapy, Yates’ Chi-Square Correction for Continuity \((1) = 4.09, p = 0.04\).

The traumas experienced and written about by participants in the PTSD group were as follows: seeing someone badly hurt or killed \((n = 3)\), death you caused to someone else \((n = 2)\), sexual assault \((n = 2)\), sudden, unexpected death of someone close to you \((n = 1)\), fire \((n = 1)\), combat exposure or exposure to a war zone \((n = 2)\), and serious accident at home \((n = 1)\).

Distressing work situations in the Burnout group were varied and included customer service provider \((n = 2)\), food service manager \((n = 1)\), counselor \((n = 2)\), medical service provider \((n = 1)\), charity fund raiser \((n = 1)\), technical writer \((n = 1)\), and administrative assistant \((n = 1)\).
Primary Analyses

PTSD Group Analyses

All participants in the PTSD group met *DSM-IV* criteria for a diagnosis of PTSD according to the *DSM-IV* (APA, 1994) guidelines of symptom endorsement at pretest. Specifically, all participants reported at least one Cluster B symptom (Re-experiencing), at least three Cluster C symptoms (Avoidance/Numbing), and at least two Cluster D symptoms (Hypervigilance).

Using the 1/3/2-symptom endorsement criteria, of the 12 participants who completed posttest, 7 no longer met criteria for a diagnosis of PTSD at that time. At 1-month follow-up, 4 participants still did not meet criteria and 1 participant again met criteria for the disorder. An additional participant no longer met criteria for the disorder at this assessment. Two participants dropped out in this phase and 1 participant had missing data for this assessment.

By the 2-month follow-up, 7 participants no longer met criteria for the disorder and 2 participants had dropped out of the study. Table 3 depicts the symptom status for participants in the PTSD group at each assessment phase. These results are depicted graphically in Figure 1. Visual inspection of the data suggests that participants no longer meeting criteria for a diagnosis of PTSD gradually increased across follow-up, while the number of participants still meeting criteria decreased throughout follow-up. The drop-out rate continually increased during follow-up.
Table 3
PTSD Group Symptom Status

<table>
<thead>
<tr>
<th>Symptom Status</th>
<th>Assessment Phase</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Posttest</td>
<td>1-Month</td>
<td>2-Month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 12)</td>
<td>(n = 10)</td>
<td>(n = 8)</td>
<td></td>
</tr>
<tr>
<td>No longer met criteria</td>
<td>7 (58%)</td>
<td>6 (50%)</td>
<td>7 (58%)</td>
<td></td>
</tr>
<tr>
<td>Still met criteria</td>
<td>5 (42%)</td>
<td>3 (25%)</td>
<td>1 (08%)</td>
<td></td>
</tr>
<tr>
<td>Missing data</td>
<td>0 (00%)</td>
<td>1 (08%)</td>
<td>0 (00%)</td>
<td></td>
</tr>
<tr>
<td>Dropped out</td>
<td>0 (00%)</td>
<td>2 (17%)</td>
<td>4 (33%)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Symptom Status of Participants in PTSD Group.

At pretest, scores on the CAPS-DX for the 12 participants ranged from 32 to 82, \(M = 62.50, SD = 18.63\). Due to drop out following posttest, a paired samples \(t\) test was performed to determine if there was a significant decrease in CAPS-DX total scores following treatment. In addition to statistical significance of results, the effect size, or magnitude of the differences between the two variables, using eta squared
(\eta^2), was calculated. According to Cohen (1988), the following guidelines may be used to interpret this statistic: .01 = small effect, .06 = moderate effect, and .14 = large effect. Results of this analysis indicated that there was no significant change from pretest to posttest (\(M = 54.08, SD = 24.29, t (11) = 1.79, p = .10\). However, the magnitude of the differences was large (\(\eta^2 = .15\)). This large effect size indicates that 15% of the variance in CAPS-DX scores was explained by time of assessment. This variance suggests that with a larger sample size, statistical significance may have been found.

In addition, a one-way repeated measures ANOVA was conducted to determine if there were significant differences in the total CAPS-DX scores at pretest, posttest, 1- and 2-month follow-up. For this analysis, data were available on only 7 participants.

There was no statistically significant effect for time, Wilks' Lambda = .19, \(F(3, 4) = .40, p = .06\) indicating that these scores did not change significantly across assessment phases. The effect size was also calculated (\(\eta^2 = .81\)). Again using Cohen's (1988) guidelines, this is a very large effect size suggesting that, although no statistically significant difference in means was found, 81% of the variance in CAPS-DX scores was accounted for by time of assessment. This supports the supposition that a larger sample size may have produced significant differences in scores across time.

The means and standard deviations for these assessment phases are depicted in Table 4. These results are shown graphically in Figure 2. Visual inspection of the data
indicates a slight decrease and then leveling of mean CAPS-DX scores across follow-up assessment.

Table 4
Descriptives for CAPS-DX Total Symptom Scores

<table>
<thead>
<tr>
<th>Assessment Phase</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>7</td>
<td>66.00</td>
<td>21.91</td>
</tr>
<tr>
<td>Posttest</td>
<td>7</td>
<td>56.29</td>
<td>28.75</td>
</tr>
<tr>
<td>Follow-up 1</td>
<td>7</td>
<td>53.00</td>
<td>22.04</td>
</tr>
<tr>
<td>Follow-up 2</td>
<td>7</td>
<td>53.00</td>
<td>28.63</td>
</tr>
</tbody>
</table>

Figure 2. Mean CAPS-DX Scores Across Assessment Phases.

As a result of recruitment at the Cincinnati V.A. Hospital, 6 participants in the PTSD condition were veterans. In order to assess whether these 6 participants differed from the nonveteran participants, a two-way repeated measures ANOVA was
conducted. This analysis compared scores on the CAPS-DX from pretest to posttest as the largest number of data points was available at these assessments.

Results indicated that scores between the two groups were not significantly different from pretest to posttest, Wilks’ Lambda = .77, $F(1, 10) = 3.00, p = .11$. For a two-way ANOVA, Cohen (1988) suggests the following guidelines for interpretation of $\eta^2$: .10 = small, .25 = moderate, and .40 = large. The effect size for this analysis was small ($\eta^2 = .23$).

This analysis also indicated that there was no statistically significant main effect for group such that the scores on the CAPS-DX were not significantly different in the veteran and nonveteran groups, $F(1,10) = .11, p = .74$. The effect size for this analysis was very small ($\eta^2 = .01$).

The interaction between group and time again showed no statistically significant difference, Wilks’ Lambda = .97, $F(1,10) = .28, p = .61$. The effect size for this analysis was small ($\eta^2 = .03$). These results indicated that although the veteran subgroup endorsed more significant trauma, they did not report more distress related to those experiences as compared to the civilians in the PTSD condition.

Carry forward analysis of the data was performed using a repeated measures ANOVA. Participants who completed pretest assessment and who dropped out prior to posttest had their pretest CAPS-DX scores used as all subsequent CAPS-DX scores. This analysis added 10 participants. Results indicated no significant differences in CAPS-DX scores from pretest to 2-month follow-up, Wilks’ Lambda = .77,
$F(3,14) = 1.41, p = .28$. The effect size was also calculated ($\eta^2 = .23$). Again using Cohen’s (1988) guidelines, this is a large effect size suggesting that, although no statistically significant difference in means was found, 23% of the variance in CAPS-DX scores was accounted for by time of assessment.

Although the effect size is smaller than that of the previous analysis, it is still a “large” effect size according to Cohen (1988) and offers additional support for the possibility that a larger sample size may have produced significant differences in scores across time. This is particularly notable as the carry forward analysis is a conservative measure of change when analyzing missing data due to attrition.

The means and standard deviations for the carry forward analysis are shown in Table 5 and Figure 3. Visual inspection of these data shows a less dramatic decrease in the report of symptoms followed by the same leveling effect as shown in the previous analysis. The effect sizes for these analyses are presented in Figure 4.

Table 5
Descriptives for CAPS-DX Total Symptom Scores (Carry Forward Analysis)

<table>
<thead>
<tr>
<th>Assessment Phase</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>17</td>
<td>61.71</td>
<td>19.22</td>
</tr>
<tr>
<td>Posttest</td>
<td>17</td>
<td>55.76</td>
<td>23.28</td>
</tr>
<tr>
<td>Follow-up 1</td>
<td>17</td>
<td>55.12</td>
<td>20.87</td>
</tr>
<tr>
<td>Follow-up 2</td>
<td>17</td>
<td>55.59</td>
<td>23.50</td>
</tr>
</tbody>
</table>
Figure 3. Mean CAPS-DX Scores Across Assessment Phases (Carry Forward Analysis).

Figure 4. CAPS-DX Effect Sizes.

Burnout Group Analyses

Because scoring criteria for the MBI-Human Services and MBI-General Forms are not compatible, mean comparisons could not be made. Rather, a z score
transformation was used to change MBI Emotional Exhaustion and Depersonalization/Cynicism scores into ranges. These ranges were designated as "high," "moderate," and "low" according to scoring criteria presented in the MBI manual. At pretest, all 9 participants scored "high" on both Emotional Exhaustion and Depersonalization. A chi-square calculation was used to show change in the ranges of burnout in these categories.

At posttest, 2 participants' Emotional Exhaustion scores had decreased to the "moderate" range and 3 participants' Depersonalization scores had decreased to the "moderate" range. Visual inspection of the data indicated that 1 participant showed reduced Emotional Exhaustion and Depersonalization from "high" to "moderate" by posttest. One participant had reduced Emotional Exhaustion to "moderate" and 2 participants had reduced Depersonalization to "moderate" by posttest. This suggests that 4 participants no longer met the study criteria for Burnout. Table 6 depicts the MBI score category scores for participants in the Burnout group from pretest to posttest.

Table 6

<table>
<thead>
<tr>
<th>Assessment Phase</th>
<th>Emotional Exhaustion</th>
<th>Depersonalization/Cynicism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High: ( n = 9 )</td>
<td>High: ( n = 9 )</td>
</tr>
<tr>
<td>Pretest</td>
<td>Moderate: ( n = 0 )</td>
<td>Moderate: ( n = 0 )</td>
</tr>
<tr>
<td>Posttest</td>
<td>( n = 7 )</td>
<td>( n = 6 )</td>
</tr>
<tr>
<td></td>
<td>( n = 2 )</td>
<td>( n = 3 )</td>
</tr>
</tbody>
</table>
A carry forward analysis was not performed on the Burnout group data as this analysis would have contributed only 1 participant who dropped out after the 1-month follow-up assessment.

**Between Group Analyses—Dependent Measures**

Two-way, repeated measures ANOVAs were conducted to determine if dependent measure scores differed between groups across assessment times. These analyses examined the change in BDI-II scores from pretest through 2-month follow-up as well as the change in STAI-S and SUDs ratings from pretest through treatment sessions to posttest.

**Beck Depression Inventory-II (BDI-II)**

Due to drop-out following posttest, an analysis of scores on the Beck Depression Inventory II (BDI-II) at pretest and posttest for the two groups was conducted first. Results indicated that there was a statistically significant main effect for time indicating that the scores on the BDI-II changed significantly from pretest to posttest, Wilks’ Lambda = .63, $F(1, 18) = 10.23, p = .01$. For a two-way ANOVA, Cohen (1988) suggests the following guidelines for interpretation of $\eta^2$: .10 = small, .25 = moderate, and .40 = large. The effect size for this analysis was moderate ($\eta^2 = .36$).

This analysis also indicated that there was a statistically significant main effect for group such that the scores on the BDI-II were significantly different in the PTSD
and Burnout groups, $F(1,18) = 5.86, p = .03$. The effect size for this analysis was small ($\eta^2 = .20$). These analyses indicate that the Burnout group means decreased significantly from pre- to posttest and were significantly smaller than the PTSD group means at posttest. The interaction between group and time approached significance but no statistically significant difference was found Wilks' Lambda = .80, $F(1,18) = 4.38, p = .051$. The effect size for this analysis was moderate ($\eta^2 = .25$). Table 7 and Figure 5 depicts these results in tabular and graphical form. The effect sizes for this analysis are presented in Figure 6.

Table 7

<table>
<thead>
<tr>
<th>Assessment Phase</th>
<th>PTSD Group ($n = 12$)</th>
<th>Burnout Group ($n = 8$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Pretest</td>
<td>19.08</td>
<td>9.44</td>
</tr>
<tr>
<td>Posttest</td>
<td>17.33</td>
<td>10.19</td>
</tr>
</tbody>
</table>

A two-way repeated measures ANOVA was also used to determine if BDI-II scores differed between groups across all assessment phases (pretest, posttest, and 1- and 2-month follow-ups). In the PTSD group, data for these assessment phases were available on 6 participants. In the Burnout group, 7 participants had data at all phases. Results of this analysis showed that there was no statistically significant main effect for time indicating that the scores on the BDI-II did not change significantly
throughout assessment phases, Wilks’ Lambda = .49, $F(3, 9) = 3.19$, $p = .08$.

However, the effect size for this analysis was large ($\eta^2 = .52$) indicating that 52% of the variance in scores between groups was accounted for by time of assessment.

Visual inspection of the data suggests that BDI-II scores decreased slightly but continuously in the PTSD group. The Burnout group showed more dramatic and lasting decreases in their scores upon visual inspection of the data.
No statistically significant main effect for group was found such that the scores on the BDI-II were not significantly different in the PTSD and Burnout groups across assessment phases, $F(1,11) = 4.62, p = .06$. The effect size for this analysis was moderate ($\eta^2 = .30$) indicating that 30% of the variance in scores across time was accounted for by group. Again, visual inspection suggests both lower scores across sessions for the Burnout group as compared to the PTSD group and a more dramatic decrease from pretest across follow-up sessions for the Burnout group.

No statistically significant effect was found for the interaction between group and time indicating that neither group nor time of assessment distinguished mean scores, Wilks’ Lambda $= .78$, $F(3,9) = .85, p = .50$. The effect size for this analysis was small ($\eta^2 = .22$). See Table 8 for means and standard deviations for these groups. Figure 7 displays these results in graphical form. The effect sizes for this analysis are presented in Figure 8.

In addition, a two-way repeated measures ANOVA was used to examine effects for time and group across the dependent measures at Pretest, Treatment 1 (TX 1), Treatment 2 (TX 2), Treatment 3 (TX 3), Treatment 4 (TX 4), and Posttest. For the BDI-II dependent measure scores, there were 12 participants in the PTSD group and 7 participants in the Burnout group.

Results of this analysis revealed no main effect for time, Wilks’ Lambda $= .58$, $F(5, 13) = 1.89, p = .16$. However, the effect size was large ($\eta^2 = .42$) indicating that 42% of the variance in scores was accounted for by time of assessment.
Table 8

BDI-II Group Means Pretest to 2-Month Follow-up

<table>
<thead>
<tr>
<th>Group Assignment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PTSD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>6</td>
<td>20.67</td>
<td>11.27</td>
</tr>
<tr>
<td>Posttest</td>
<td>6</td>
<td>18.50</td>
<td>14.64</td>
</tr>
<tr>
<td>FU1</td>
<td>6</td>
<td>17.83</td>
<td>11.75</td>
</tr>
<tr>
<td>FU2</td>
<td>6</td>
<td>18.00</td>
<td>12.65</td>
</tr>
<tr>
<td><strong>Burnout</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>7</td>
<td>13.43</td>
<td>11.25</td>
</tr>
<tr>
<td>Posttest</td>
<td>7</td>
<td>4.86</td>
<td>5.76</td>
</tr>
<tr>
<td>FU1</td>
<td>7</td>
<td>6.14</td>
<td>2.65</td>
</tr>
<tr>
<td>FU2</td>
<td>7</td>
<td>5.00</td>
<td>5.42</td>
</tr>
</tbody>
</table>

Figure 7. Mean BDI-II Scores Across Assessment Phases.
Figure 8. BDI-II Two-Way RM ANOVA Effect Sizes (Pre-2MF-Up).

There was a main effect for group, $F(1, 17) = 5.31, p = .03$, indicating that scores were significantly different between the PTSD and Burnout groups. The effect size for this analysis was moderate ($\eta^2 = .24$). Again, no interaction effect was found, Wilks’ Lambda = .62, $F(5, 13) = .76, p = .23$. The effect size of the interaction was also moderate ($\eta^2 = .38$). The means and standard deviations for these participant groups are depicted in Table 9. Figure 9 illustrates these results in graphical form. The effect sizes for this analysis are presented in Figure 10.

Upon visual inspection of these data, it may be noted that the PTSD group had higher mean BDI-II scores overall, across all sessions. Additionally, both groups showed an increase in BDI-II mean scores at Treatment 2 followed by a general decrease in scores across the following treatment sessions to posttest. Scores for the PTSD group are less consistent than those of the Burnout group, but indicate a general downward trend. The Burnout group also shows variability in mean BDI-II
Table 9

BDI-II Group Means Across Assessment and Treatment Sessions

<table>
<thead>
<tr>
<th>Group Assignment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PTSD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>12</td>
<td>19.08</td>
<td>9.44</td>
</tr>
<tr>
<td>TX1</td>
<td>12</td>
<td>20.00</td>
<td>9.16</td>
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<tr>
<td>TX2</td>
<td>12</td>
<td>22.00</td>
<td>11.85</td>
</tr>
<tr>
<td>TX3</td>
<td>12</td>
<td>18.92</td>
<td>12.60</td>
</tr>
<tr>
<td>TX4</td>
<td>12</td>
<td>19.50</td>
<td>11.66</td>
</tr>
<tr>
<td>Posttest</td>
<td>12</td>
<td>17.33</td>
<td>10.19</td>
</tr>
<tr>
<td><strong>Burnout</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>7</td>
<td>13.43</td>
<td>11.25</td>
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<tr>
<td>TX1</td>
<td>7</td>
<td>10.29</td>
<td>9.57</td>
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<td>TX2</td>
<td>7</td>
<td>12.43</td>
<td>8.73</td>
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<td>TX3</td>
<td>7</td>
<td>9.71</td>
<td>8.26</td>
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<td>TX4</td>
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</tr>
<tr>
<td>Posttest</td>
<td>7</td>
<td>4.86</td>
<td>5.76</td>
</tr>
</tbody>
</table>

scores from pretest to Treatment 2, but again, an overall trend toward decreased mean scores is apparent.

Independent sample *t* tests were conducted to describe these differences statistically. These analyses indicated that the mean BDI-II scores between groups were not significantly different at pretest; PTSD group (*M* = 19.08, *SD* = 9.44); Burnout group (*M* = 14.33, *SD* = 10.78), *t*(19) = 1.07, *p* = .30. At Treatment 1, significant differences were found in BDI-II scores between the PTSD group (*M* =
Figure 9. Mean BDI-II Scores Across Assessment and Treatment Sessions.

Figure 10. BDI-II Effect Sizes 2WRMA (Pre-Tx-Post).

20.00, $SD = 9.16$) and the Burnout group ($M = 11.00, SD = 10.19$), $t(19) = 2.13, p = .05$. At Treatment 2, significant differences were again found in BDI-II scores between the PTSD group ($M = 22.00, SD = 11.85$) and the Burnout group ($M =$
11.89, \( SD = 9.13 \), \( t(19) = 2.13, p = .05 \). At Treatment 3, no significant differences were noted between the PTSD group (\( M = 18.92, SD = 12.59 \)) and the Burnout group (\( M = 12.75, SD = 11.50 \), \( t(18) = 1.11, p = .28 \). However, it should be noted that 1 participant had missing data for Treatment 3, further reducing the participant data available for that analysis.

At Treatment 4, significant differences were again found in BDI-II scores between the PTSD group (\( M = 19.50, SD = 11.66 \)) and the Burnout group (\( M = 9.33, SD = 8.70 \), \( t(19) = 2.19, p = .04 \). These analyses also revealed significant differences in scores at posttest between the PTSD group (\( M = 17.33, SD = 10.19 \)) and the Burnout group (\( M = 4.5, SD = 5.42 \), \( t(18) = 3.25, p = .00 \).

The PTSD and MBI conditions were then collapsed and assessed for change over time. This analysis was performed on all participants who completed the study through the 2-month follow-up session (\( n = 13 \)). Results of a one-way, repeated measures ANOVA showed no significant decrease in symptom reports across assessment phases, Wilks’ Lambda = .52, \( F(3, 10) = 3.13, p = .07 \). The effect size of the interaction was large (\( \eta^2 = .48 \)). Figure 11 presents the effect sizes for the dependent measure collapsed data analysis.

**Measures of State Anxiety**

The State-Trait Anxiety Inventory-State Form (STAI-S) and Subjective Units of Distress Rating (SUDs) were taken at pretest, throughout treatment, and at posttest. It was hypothesized that, although these scores would increase at the
beginning of treatment, as treatment progressed, these scores would decrease. In order to test these hypotheses, two-way, repeated measures ANOVAs were again computed.

**State-Trait Anxiety Inventory-State (STAI-S).** For the analyses using the STAI-S dependent measure, there were 12 participants in the PTSD group and 8 participants for the Burnout group. Analysis of STAI-S scores across pretest, treatment sessions, and posttest for these groups indicated that there was no main effect found for time, Wilks’ Lambda = .57, $F(5, 14) = 2.10, p = .13$. The effect size was large ($\eta^2 = .43$) indicating that 43% of the variance of the STAI-S mean score was explained by time of assessment. No main effect for group, $F(1, 18) = 2.73, p = .12$, was found in this analysis. The effect size was moderate for this analysis ($\eta^2 = .36$), indicating that 36% of the variance in scores was explained by the group
variable. No interaction effect was found, Wilks’ Lambda = .64, \( F(5, 14) = 1.55, p = .24 \). The effect size was small (\( \eta^2 = .13 \)).

Table 10 and Figure 12 depict the means and standard deviations for the STAI-S mean scores in tabular and graphical forms, respectively. Visual inspection of the data indicated that as with the BDI-II scores, the PTSD group had higher overall scores on the STAI-S. For the PTSD condition, contrary to the hypothesized initial increase, then decrease in reported anxiety, the graph shows variability in scores across treatment sessions with no general trend toward decrease. The scores for the Burnout group are more stable and do hint at the predicted increase then decrease; however, the increased scores continued over a longer period of time and the decrease was not as substantial as hypothesized. The effect sizes for this analysis are presented in Figure 13.

Carry forward analyses were conducted on these data as well. Specifically, for participants who dropped out of the study prior to posttest, the last data point for the STAI-S was subsequently used and carried forward through posttest. This added 5 participants to the PTSD group and 1 participant to the Burnout group.

Results of these analyses indicated no significant differences in scores across assessment times, Wilks’ Lambda = .71, \( F(5, 20) = 1.63, p = .20 \), with a moderate effect size (\( \eta^2 = .29 \)). Between group analyses uncovered no significant differences either, Wilks’ Lambda = .82, \( F(5, 20) = .88, p = .51 \), with a small effect size (\( \eta^2 = .07 \)). Again, no interaction was found, \( F(1, 24) = 1.77, p = .20 \), with a small effect size (\( \eta^2 = .18 \)).
### Table 10

<table>
<thead>
<tr>
<th>Group Assignment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PTSD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>12</td>
<td>45.67</td>
<td>12.29</td>
</tr>
<tr>
<td>TX1</td>
<td>12</td>
<td>52.33</td>
<td>12.57</td>
</tr>
<tr>
<td>TX2</td>
<td>12</td>
<td>55.92</td>
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<tr>
<td>TX4</td>
<td>12</td>
<td>55.50</td>
<td>15.26</td>
</tr>
<tr>
<td>Posttest</td>
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<td>48.67</td>
<td>11.42</td>
</tr>
<tr>
<td><strong>Burnout</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>8</td>
<td>43.13</td>
<td>12.05</td>
</tr>
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<td>8</td>
<td>44.38</td>
<td>9.53</td>
</tr>
<tr>
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<td>8</td>
<td>46.25</td>
<td>14.10</td>
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<tr>
<td>TX3</td>
<td>8</td>
<td>44.13</td>
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<tr>
<td>TX4</td>
<td>8</td>
<td>42.88</td>
<td>10.16</td>
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<tr>
<td>Posttest</td>
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<td>40.00</td>
<td>14.63</td>
</tr>
</tbody>
</table>

Table 11 and Figure 14 depict these results. These data indicated the same general pattern of symptom report as that of the previous analysis. The effect sizes for this analysis are presented in Figure 15.

The PTSD and MBI conditions were then collapsed and assessed for change over time. This analysis was performed on all participants who completed the study through the posttest assessment (n = 20).
Figure 12. Mean STAI-S Scores Across Assessment and Treatment Sessions.

Figure 13. STAI-S Effect Sizes 2WRMA (Pre-tx-post).
Table 11

STAI-S Group Means Across Assessment and Treatment Sessions
(Carry Forward Analysis)

<table>
<thead>
<tr>
<th>Group Assignment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PTSD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
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<td>46.24</td>
<td>11.07</td>
</tr>
<tr>
<td>TX1</td>
<td>17</td>
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<td>17</td>
<td>51.71</td>
<td>13.43</td>
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<tr>
<td>TX3</td>
<td>17</td>
<td>46.41</td>
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<tr>
<td>TX4</td>
<td>17</td>
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<td>16.71</td>
</tr>
<tr>
<td>Posttest</td>
<td>17</td>
<td>42.53</td>
<td>15.72</td>
</tr>
</tbody>
</table>

| **Burnout**      |      |      |      |
| Pretest          |  9   |  42.89 |  11.30 |
| TX1              |  9   |  42.56 |  10.45 |
| TX2              |  9   |  44.22 |  14.52 |
| TX3              |  9   |  46.41 |  14.61 |
| TX4              |  9   |  42.00 |   9.86 |
| Posttest         |  9   |  39.67 |  13.72 |

Results of the one-way, repeated measures ANOVA showed no significant change in reports of state-anxiety across these assessment phases, Wilks’ Lambda = .56, $F(5, 15) = 2.37, p = .09$. The effect size of the interaction was large ($\eta^2 = .44$). Figure 11 presents the effect size for the STAIS-S collapsed data analysis.

**Subjective Units of Distress Ratings (SUDs).** A two-way repeated measures ANOVA was used to examine the SUDs dependent measure scores across pretest,
Mean STAI-S Scores Across Assessment and Treatment Sessions
(Carry Forward Data)

![Graph showing Mean STAI-S Scores Across Assessment and Treatment Sessions]

Figure 14. Mean STAI-S Scores Across Assessment and Treatment Sessions (Carry Forward Analysis).

STAI-S Effect Sizes 2WRMA (pre-tx-post)
Carry Forward Analysis

![Graph showing STAI-S Effect Sizes 2WRMA (Pre-Tx-Post) Carry Forward Analysis]

Figure 15. STAI-S Effects Sizes 2WRMA (Pre-Tx-Post) Carry Forward Analysis.

treatment sessions, and posttest for each group. There were 12 participants in the PTSD group and 8 participants in the Burnout group for this analysis.
Results indicated that there was no main effect for time, Wilks' Lambda = .62, $F(5, 14) = 1.71, p = .20$. The effect size for time was moderate ($\eta^2 = .38$), indicating that 38% of the variance in SUDs scores was accounted for by time of assessment. No main effect for group was found, $F(1, 18) = 2.21, p = .16$. The effect size was large, however ($\eta^2 = .46$), indicating that 46% of the variance in SUDs ratings was attributable to the group variable. No interaction effect was found for time by group, Wilks' Lambda = .54, $F(5, 14) = 2.41, p = .09$. The effect size was small ($\eta^2 = .11$).

The means and standard deviations for these groups are depicted in Table 12. Figure 16 illustrates these results in graphical form. The effect sizes for this analysis are presented in Figure 17.

It had been hypothesized that these ratings would increase at the beginning of treatment and then decrease throughout treatment. Visual inspection of Figure 12 indicated that, although scores for the PTSD group did appear to increase within the first two treatment sessions, the expected subsequent decrease did not occur and this group remained anxious throughout treatment and posttest sessions. Posttest scores were slightly less than those reported at pretest but the difference was very slight. For the Burnout group, scores varied much more across sessions but did show an overall trend toward reduction by posttest.

Carry forward analyses were conducted on these data as well. Specifically, for participants who dropped out of the study prior to posttest, the last data point for the SUDs rating was subsequently used and carried forward through posttest. This added 5 participants to the PTSD group and 1 participant to the Burnout group.
Table 12

SUDs Group Means Across Assessment and Treatment Sessions

<table>
<thead>
<tr>
<th>Group Assignment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD</td>
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<tr>
<td>Pretest</td>
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<td>TX1</td>
<td>12</td>
<td>5.75</td>
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<td>TX2</td>
<td>12</td>
<td>6.50</td>
<td>2.54</td>
</tr>
<tr>
<td>TX3</td>
<td>12</td>
<td>5.75</td>
<td>2.93</td>
</tr>
<tr>
<td>TX4</td>
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<td>6.00</td>
<td>2.73</td>
</tr>
<tr>
<td>Posttest</td>
<td>12</td>
<td>5.25</td>
<td>2.77</td>
</tr>
<tr>
<td>Burnout</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>8</td>
<td>5.13</td>
<td>2.70</td>
</tr>
<tr>
<td>TX1</td>
<td>8</td>
<td>3.88</td>
<td>3.00</td>
</tr>
<tr>
<td>TX2</td>
<td>8</td>
<td>5.13</td>
<td>2.00</td>
</tr>
<tr>
<td>TX3</td>
<td>8</td>
<td>4.63</td>
<td>2.13</td>
</tr>
<tr>
<td>TX4</td>
<td>8</td>
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<td>1.58</td>
</tr>
<tr>
<td>Posttest</td>
<td>8</td>
<td>3.38</td>
<td>2.13</td>
</tr>
</tbody>
</table>

Results of these analyses indicated no significant differences in scores across assessment and treatment sessions, Wilks' Lambda = .71, $F(5, 20) = 1.62$, $p = .20$, with a moderate effect size ($\eta^2 = .29$). Between group analyses uncovered no significant differences either, Wilks' Lambda = .68, $F(5, 20) = 1.93$, $p = .13$, with a moderate effect size ($\eta^2 = .33$).

Again, no interaction was found, $F(1, 24) = 1.97$, $p = .17$, with a small effect size ($\eta^2 = .08$). Table 13 and Figure 18 depict these results. These data indicated the
Mean SUDs Ratings Across Assessment and Treatment Sessions

Figure 16. Mean SUDs Ratings Across Assessment and Treatment Sessions.

SUDs Effect Sizes 2WRMA (pre-tx-post)

Figure 17. SUDs Effect Sizes 2WRMA (Pre-Tx-Post).
same general pattern of symptom report as that of the previous analysis. The effect sizes for this analysis are presented in Figure 19.

Table 13

SUDs Group Means Across Assessment and Treatment Sessions
(Carry Forward Analysis)

<table>
<thead>
<tr>
<th>Group Assignment</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>17</td>
<td>5.24</td>
<td>2.46</td>
</tr>
<tr>
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<td>17</td>
<td>5.59</td>
<td>2.35</td>
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<td>TX2</td>
<td>17</td>
<td>5.88</td>
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<td>17</td>
<td>5.06</td>
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</tr>
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<td>TX4</td>
<td>17</td>
<td>5.24</td>
<td>2.77</td>
</tr>
<tr>
<td>Posttest</td>
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<tr>
<td>Burnout</td>
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<tr>
<td>Pretest</td>
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<td>2.60</td>
</tr>
<tr>
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</tr>
<tr>
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<td>4.89</td>
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</tr>
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</tr>
<tr>
<td>TX4</td>
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<td>3.44</td>
<td>1.59</td>
</tr>
<tr>
<td>Posttest</td>
<td>9</td>
<td>3.33</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Collapsing the PTSD and MBI conditions, scores on the SUDs ratings were assessed from pretest, through treatment sessions, to posttest (n = 20). A one-way, repeated measures ANOVA revealed no significant change in subjective reports of distress across these assessment phases, Wilks’ Lambda = .64, F(5, 15) = 1.70, p =
The effect size of the interaction was large ($\eta^2 = .36$). Figure 11 shows the effect sizes for the SUDs collapsed data analysis.

Figure 18. Mean SUDs Across Assessment and Treatment (Carry Forward Data).

Figure 19. SUDs Effect Sizes 2WRMA (Pre-Tx-Post) Carry Forward Analyses.
Coping Resources Inventory (CRI) and Health Center Visits

The fourth set of hypotheses related to the functional relationships between reported symptom levels and coping skills and the number of health care facility visits made throughout the study. Specifically, it was hypothesized that as reported symptoms of burnout and PTSD decreased, there would be an increase in reported coping skills. It was also hypothesized that as symptom levels decreased, health center visits would decrease.

Due to the small sample size, these hypotheses could not be tested as planned. Paired samples t tests were conducted within groups on these variables to determine if, despite the lack of significant decreases in symptom reports, participants showed increases in coping skills or decreases in health center visits for illness.

Coping Resources Inventory (CRI). Results of this analysis on the Coping Resources Inventory showed no statistically significant difference in scores for the PTSD group from pretest ($M = 149.92, SD = 25.50$) to posttest ($M = 156.17, SD = 19.99$), $t(11), = -1.21, p = .25$. The $\eta^2$ statistic (.12) indicated a moderate effect size, however.

For the Burnout group, no statistically significant difference was found between pretest CRI scores ($M = 169.11, SD = 36.51$) and posttest scores either ($M = 171.33, SD = 22.64$), $t(9), = -.30, p = .77$. The $\eta^2$ statistic (.01) indicated a small effect size. The effect sizes for these analysis are presented in Figure 20.
Results of independent samples $t$ tests indicated that at pretest, the PTSD group ($M = 149.92, SD = 25.50$) was not significantly different than the Burnout group ($M = 169.11, SD = 36.51$), $t(19) = 1.76, p = .17$, in their utilization of coping skills as measured by the Coping Resources Inventory (CRI). Additionally, the PTSD group ($M = 156.17, SD = 19.99$) was not significantly different than the Burnout group on the CRI ($M = 171.33, SD = 22.64$), $t(19) = -1.63, p = .12$ at posttest assessment.

**Health Center Visits.** Paired samples $t$ tests within groups comparing the number of health center visits at pre-and posttest were then conducted as data on the largest number of participants were available at these assessments. No statistically significant difference in scores was found for the PTSD group ($n = 12$) from pretest ($M = .75, SD = 1.29$) to posttest ($M = .50, SD = .67$), $t(11) = .61, p = .56$. The effect size was small ($\eta^2 = .03$).
For the Burnout group the sample size was smaller \( n = 8 \) and no statistically significant difference was found between the number of pretest health center visits \( (M = .75, SD = .71) \) and the number of posttest health center visits \( (M = .13, SD = .35) \), \( t(7) = 1.93, p = .10 \). The \( \eta^2 \) statistic (.25) indicated a large effect size, however.

Since this questionnaire was administered throughout follow-up, a two-way repeated measures ANOVA was conducted to determine if differences existed between groups across follow-up phases. For this analysis, data were available on only 6 participants in the PTSD group and 7 in the Burnout group.

Results indicated no significant effect for time, Wilks' Lambda = .74, \( F(3, 9) = 1.04, p = .42 \). The effect size for time was moderate \( (\eta^2 = .25) \). No main effect for group was found, \( F(1, 11) = 1.81, p = .20 \). The effect size was small \( (\eta^2 = .14) \). No interaction effect was found for time by group, Wilks' Lambda = .79, \( F(3, 9) = .81, p = .51 \). The effect size was moderate \( (\eta^2 = .21) \). The effect sizes for these analyses are presented in Figure 21.

Post-hoc Analyses

In order to consider the effect of past and concurrent therapies on the results of this study, the role of past psychotherapy and the concurrent use of antidepressant medication during the investigational treatment was examined. Six of the 12 participants who entered treatment in the PTSD group reported having engaged in psychotherapy in the past related to their symptoms of PTSD. These same
participants reported taking antidepressant medication for symptoms of PTSD prior to and during the course of the study. No participants in the Burnout group reported engagement in psychotherapy in the past related to their stressful work experience, nor did they report current use of psychiatric medication for these symptoms.

Independent samples $t$ tests were conducted to compare participants with a history of psychotherapy and current use of medication (PM) with those who had no therapy and were taking no medication (NPM). At pretest, scores on the CAPS-DX were not significantly different between the PM participants ($M = 62.67$, $SD = 22.15$) and the NPM participants ($M = 62.33$, $SD = 16.52$), $t(10) = -0.03$, $p = .98$. The effect size was very small ($\eta^2 = .00$). Nor were these scores significantly different at posttest between the two: PM ($M = 48.33$, $SD = 22.91$); NPM ($M = 59.83$, $SD = 26.35$), $t(10) = -.81$, $p = .44$. The effect size was moderate ($\eta^2 = .06$).

A two-way repeated measures ANOVA was conducted on CAPS-DX scores to determine if significant differences existed between these groups from pretest to
posttest as well. Results indicated no significant effect for time, Wilks’ Lambda = .75, \( F(1,10) = 3.41, p = .09 \). The effect size for time was moderate \( (\eta^2 = .25) \). No main effect for group was found, \( F(1, 10) = .22, p = .65 \). The effect size was very small \( (\eta^2 = .02) \). No interaction effect was found for time by group, Wilks’ Lambda = .86, \( F(1,10) = 1.69, p = .22 \). The effect size was moderate \( (\eta^2 = .14) \). Although significant differences were not detected, the graphical depiction of these results suggest that those with a history of psychotherapy and currently taking antidepressant medication showed sharper decreases in total CAPS-DX mean score reductions than those without past psychotherapy or current medication. These results are depicted graphically in Figure 22.

Figure 22. Pre-Post CAPS-DX Scores for Med/Therapy Groups.

These same analyses were used to compare the groups on mean BDI-II scores. Again, independent samples \( t \) tests were first conducted to compare pre- and posttest scores between groups. Pretest scores on the BDI-II were not significantly
different between PM ($M = 19.33$, $SD = 10.52$) and the NPM ($M = 18.83$, $SD = 9.24$), $t(10), = -.09, p = .93$. The effect size was very small ($\eta^2 = .00$. These scores were not significantly different at posttest either: PM ($M = 13.83$, $SD = 8.77$), NPM ($M = 20.83$, $SD = 11.05$), $t(10), = 1.22, p = .25$. The effect size was moderate ($\eta^2 = .13$).

A two-way repeated measures ANOVA was conducted to determine if significant differences existed between these groups from pretest to posttest. Results indicated no significant effect for time, Wilks' Lambda = .90, $F(1,10) = 1.15, p = .31$. The effect size for time was small ($\eta^2 = .10$). No main effect for group was found, $F(1, 10) = .35, p = .57$. The effect size was very small ($\eta^2 = .03$). However, a significant interaction effect was found for time by group, Wilks' Lambda = .65, $F(1,10) = 5.28, p = .04$. The effect size was moderate ($\eta^2 = .35$). Graphical illustration of these data indicates that those without past psychotherapy or current medication actually showed a slight increase in BDI-II scores from pre- to posttest. Those with a history of psychotherapy and currently taking antidepressant medication showed some improvement in these symptoms. Figure 23 depicts these results.

**Diagnostic Outcome and Recovery**

In addition to the statistical significance found in this study, clinically significant decreases in symptom reports across groups were also examined. Based on categorical symptom analysis of the CAPS-DX, MBI, and BDI-II, both groups
Figure 23. Pre-Post BDI-II Scores for Med/Therapy Groups.

reported a general trend toward symptom reduction following treatment. At pretest, all participants met criteria for a diagnosis of PTSD using the 1/3/2 symptom endorsement guideline of the *DSM-IV* (APA, 1994). At the completion of the study, 7 of the 8 individuals no longer met these criteria.

For participants in the Burnout group, 4 of the 8 participants had reduced scores on both Emotional Exhaustion and Depersonalization categories, which was the equivalent of no longer meeting scoring criteria for the syndrome.

Regarding scores on the BDI-II, the mean score for participants in the PTSD group fell in the high-mild to low-moderate level of depressive symptoms at pretest. By posttest, these scores had fallen to the "mild depressive symptom" category. This reduction was maintained at the 2-month follow-up assessment.
Mean scores for participants in the Burnout group fell into the “minimal” level of depressive symptoms at pretest. At posttest, these scores had fallen into the category of “normal mood” and were maintained at 2-month follow-up.

In addition, the post-hoc analyses of the PTSD participants who reported a past history of psychotherapy and current antidepressant medication use showed improvement in CAPS-DX total symptoms scores over those without a prior history of treatment or concurrent use of medication.

Mean BDI-II score comparison from pre- to posttest also indicated some improvement in depressive symptoms in the group who reported prior psychotherapy and current use of antidepressant medication.
CHAPTER V

DISCUSSION

The purpose of the present study was to test the effectiveness of a writing therapy treatment with individuals expressing symptoms along a continuum of stressful conditions. Specifically, participants in the study reported symptoms of either Post-Traumatic Stress Disorder or Burnout. This study utilized the writing treatment developed by Pennebaker (1986) which demonstrated improvement in physical and mental health "well-being" (Pennebaker & Beall, 1986; Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Smyth, 1998) as well as significant reductions in clinical levels of Post-Traumatic Stress Disorder (Largo-Marsh & Spates, 1997).

Based upon the supportive literature available on writing treatment, this study hypothesized that participants in both the Burnout and PTSD conditions would report significantly fewer symptoms related to the distressing experience about which they chose to write. In addition, it was hypothesized that depressive symptoms, anxiety, coping skills, and physical health symptoms would improve following treatment.

Preliminary Outcomes

Statistical analyses comparing individuals in the PTSD and Burnout groups on demographic variables indicated that the groups were significantly different on three characteristics. Regarding gender, participants in the Burnout group were all female.
Gender make-up of the PTSD condition was nearly evenly distributed with 58% of this group being male and 42% being female.

In addition, only participants in the PTSD group reported having received psychotherapy in the past related to the distressing situation about which he/she chose to write. Within that group, 50% reported having received psychotherapy in the past and 50% reported having never received psychotherapy related to the distressing situation about which each wrote.

Also of note was that only participants in the PTSD condition indicated that they were taking antidepressant medication for symptoms of PTSD. Within this group, the same participants who endorsed past psychotherapy were those currently on antidepressant medication. No participants in the Burnout condition reported taking antidepressant medication during the course of the treatment study.

Main Outcomes

Regarding the main hypotheses examined for this study, statistical analyses did not support the first hypothesis, that symptoms of PTSD as measured by the CAPS-DX and reports of burnout, as measured by the MBI, would be significantly decreased following the writing treatment. These results support the findings of several other studies in which no significant improvement in PTSD symptoms was found following writing treatment (Donnelly & Murray, 1991; Gidron et al., 1996). Gidron et al. (1996) suggested that simply writing about a traumatic experience without reflection or feedback from the therapist was not sufficient to facilitate
positive change in the individual’s cognitive processing of the traumatic experience. This study further suggested that additional positive cognitive restructuring may have improved outcomes.

Although statistical significance was not found in the present study, notably large effect sizes were found for the pre–post comparison of mean CAPS-DX scores which indicated a large variance in the scores accounted for by time. This effect size suggested that the lack of significance may be in part due to the small sample size ($n = 12$). Visual inspection of the graphical results showed trends toward improvement in reported symptoms of PTSD further supporting this possibility.

Further statistical analyses of the mean CAPS-DX scores from pretest through 2-month follow-up were again, nonsignificant. However, the effect size for this analysis was very large, supporting the supposition that a larger sample size would have uncovered significant improvements in these scores.

Carry forward analyses, in which scores for participants who completed at least the pretest assessment were “carried forward” throughout the remainder of assessment sessions showed large effect sizes as well, despite nonsignificant changes in scores. Although no statistical significance was found in this conservative statistical analysis, the large effect sizes again supported prior indications that the sample size may have been the rate-limiting factor. Visual inspection of the analyses also suggested a trend toward improvement in symptom reports in these scores.
Although statistical significance was not found for mean score improvement in these groups, diagnostically, 7 of the 8 participants in the PTSD condition no longer met criteria for a diagnosis of PTSD at 2-month follow-up.

It was also notable that 6 of the 12 participants in the PTSD group who completed posttest were combat veterans of the armed forces. Research indicates that historically, despite substantial amounts of treatment, including both psychotherapeutic and pharmacological interventions, improvement in symptoms and functioning in veterans has been modest, with questionable clinical significance (Fontana & Rosenheck, 1997). In spite of the apparent resistance of PTSD symptoms to remit in the veteran population in general, in this group, 4 of the 6 veteran participants who completed the 2-month follow-up no longer met criteria for a diagnosis of PTSD as measured by the 1/3/2 symptom cluster criteria.

In addition, statistical analyses revealed no significant difference in the pretest–posttest scores of these participants when compared to the “civilian” participants also diagnosed with PTSD. This finding indicated that, at least for this sample of veterans, the writing treatment was helpful in reducing the number of symptoms of PTSD reported.

Regarding the Burnout condition, statistical comparisons on the data were not conducted due to the incompatibility of scores across occupational category questionnaires. However, results of z-score transformations of the mean scores into score ranges of “high,” “moderate,” and “low” indicated that half of the participants
no longer met the criteria for the syndrome of Burnout at posttest and these decreases remained stable through the 2-month follow-up.

Statistical significance was found for the second set of hypotheses in which scores on the Beck Depression Inventory-II were examined between the two conditions. Results indicated that scores between the two conditions were significantly different at both pretest and posttest, with the Burnout condition reporting significantly fewer depressive symptoms at both assessment times.

Analyses of within group BDI-II mean scores from pretest through 2-month follow-up revealed no significant change in scores. The effect size for the analysis of time was large indicating that a substantial portion of the variance in scores on the BDI-II could be accounted for by the time of the assessment. As visual inspection of the data indicated, these scores showed a gradual but obvious trend downward. Again, it is important to consider that the lack of significant findings is likely related to the small sample size, as in this analysis, data were available on a total of only 13 participants.

The effect sizes for the nonsignificant findings related to group comparison of the BDI-II scores from pretest through the 2-month follow-up were large and moderate for time and group analyses, respectively. This again suggested that a larger sample might well have resulted in a statistically significant difference in mean scores between groups as this analysis was based on 6 participants’ data in the PTSD condition and 7 in the Burnout condition. Based on visual inspection and the previous analyses, it is likely that the MBI condition would have yielded lower scores when
compared to the PTSD group. As discussed earlier, symptoms of depression are highly correlated with the syndrome of Burnout thus making the finding of significant decreases in BDI-II scores, but not overall MBI scores, more ambiguous. It is possible that the significant decreases in reported symptoms of depression accounted for the decreased overall, but nonsignificant scores on the MBI. The treatment may simply have not been sufficient to decrease the additional negative feelings associated with Burnout.

Additionally, this finding is of note, since only participants in the PTSD group were concurrently taking antidepressant medication and it would reason, that the effects of the medication might bolster the effects of the treatment, or vice versa. This finding also brings to light the issue of comorbidity between PTSD and depression. In particular, it is unclear whether the effectiveness of antidepressant medication with PTSD is simply due to the amelioration of the symptoms that overlap between the two disorders as opposed to improving symptoms unique to PTSD.

The question of symptom clusters and the distinction between PTSD and depression has been addressed in the literature as researchers have sought to determine if the effectiveness of antidepressant medication for PTSD is due solely to the reduction of depression-related symptoms of PTSD. One recent study found that sertraline was effective in reducing both the depression-related symptoms of PTSD and the re-experiencing/intrusion cluster of symptoms (Gaffney, 2003) but that the depressive symptoms were relatively more responsive to sertraline treatment. The
participants in the present study reported taking a number of different classes of antidepressant medications, so further investigation into this area was not possible.

Additional statistical comparisons with the BDI-II, specifically from pretest across treatment sessions to posttest failed to produce significant results for time of assessment. However, the effect size for this analysis was large, suggesting that significant differences in scores may have been detected in a larger sample. Significant differences were detected between groups and follow up analyses indicated that the Burnout condition showed greater improvement in reported symptoms of depression across these assessment sessions. It should be noted that the third treatment session was an exception, with no significance found; however, this group had one less data point available for analysis than the others. This, along with the moderate effect size for this analysis bolster the possibility that had a larger sample been examined, significant differences may have been detected.

In sum, the Burnout group showed statistically significant decreases in reports of depressive symptoms from pretest through treatment to posttest. These symptom reductions were maintained at the 2-month follow-up, suggesting that writing therapy had a positive effect on “mild” levels of self-reported depressive symptoms. Based on the effect sizes, there is evidence to suggest that the treatment was effective in improving “moderate” levels of depression seen in the PTSD group as well and with a larger sample size this may have been demonstrated.

Regarding the demographic make-up of the two conditions, it may be relevant that the Burnout group consisted entirely of women. This is notable since, in this
treatment, participants were asked to disclose personal and potentially distressing information about themselves. Women are generally considered to be more socially oriented toward developing and maintaining intimate relationships than men, which requires a certain degree of self-disclosure. Perhaps these socially constructed qualities allowed the female sample to divulge more and thus reap greater benefit from this treatment.

Examination of the degree of “state” anxiety (STAI-S) and self-reported distress (SUDs) did not support the hypotheses presented in this study. Initially increased levels of anxiety followed by consistent decreases in reported state anxiety and subjective distress were expected. Analyses yielded no significant changes between groups on the STAI-S or within groups across assessment phases. Of note, however, were the “very large” effect sizes reported with both of the analyses suggesting that a substantial proportion of the variance in these scores was accounted for by group assignment as well as time of assessment. This is noteworthy because statistical significance is only one way of determining the degree of the relationship between variables, and certainly sample size is a consequential factor in that determination.

When the more conservative, carry forward analyses were conducted to ameliorate some of the problem of attrition, no statistically significant results were found between groups or across assessment phases on the STAI-S. The effect size for time was moderate suggesting that scores may have changed significantly across assessment phase had a larger sample size been available for analysis. Effect sizes for
group and the interaction were both small, supporting the lack of significant difference demonstrated between the group scores, and between scores at a particular phase of assessment. When data for the STAI-S in the two treatment conditions were collapsed, no statistically significant differences were found. However, the effect size for this analysis was large, suggesting that significant differences in scores may have been found in a larger sample.

Analyses yielded no significant changes between groups on the SUDs or within groups on this measure across assessment phases. The effect sizes for time and group in the SUDs analysis were large, however, suggesting that significant differences across assessment phases may have been found in a larger sample.

The more conservative carry forward analysis with the SUDs ratings again failed to yield significance. However, effect sizes were moderate again lending support to the suggestion that significance may have been detected with a larger sample. Collapsing data for the two groups in the analysis of SUDs scores yielded no significant differences but again showed a large effect size.

Aside from the lack of statistically significant decreases in scores, the results did not show the hypothesized initial increase and subsequent decrease of anxiety during this study. Rather the reported levels of anxiety and subjective distress seemed to increase during the treatment phase only to return to pretest levels by posttest.

No change in coping skills as measured by the Coping Resources Inventory (CRI) was found from pretest to posttest within either treatment condition. A moderate effect size was found suggesting that with a larger sample size, significant
increases may have been noted. In addition, visual inspection of the data revealed that the PTSD group had lower scores on the CRI at both pretest and posttest, suggesting that these individuals began with and then developed fewer coping skills than those in the Burnout group.

Nor were significant differences in the number of Health Center Visits made from pretest to posttest detected. The effect size was small supporting this finding. Visual inspection of the data indicated that individuals in both groups made no visits or one visit from pretest throughout follow-up, however. Of note, visits for illness did not increase during the treatment study, suggesting that no participants were more ill during or after treatment through follow-up.

In sum, those in the Burnout condition showed significantly improved levels of depressive symptoms following the writing treatment. Although the primary hypothesis regarding decreased levels of reported PTSD and Burnout was not supported, the results lend credence to the work of Pennebaker (1988) that writing about stressful event results in increased feelings of “well-being.” Regarding the analyses of the CAPS-DX and MBI visual inspection of the data indicated trends toward reduction of reported symptoms on each of these measures. However, it is important to consider the effect sizes when interpreting this data as well. The large and moderate effects sizes suggest that although statistical significance was not detected, the treatment may show statistical significance when administered to a larger sample of participants.
When compared to the PTSD condition in which half the participants were concurrently taking antidepressant medication, it is surprising that participants in the Burnout condition exhibited greater decreases in depressive symptoms although no participants in that group were taking antidepressant medication. Perhaps the treatment is simply more effective with less severe levels of distress. As one study suggested (Gidron et al., 1996), writing about a traumatic event without the benefit of active cognitive restructuring in a treatment setting may not be enough to ameliorate the symptoms resulting from such an experience. It may be that the greater the degree of trauma associated with an experience, the greater the need for additional or alternative treatments to address the substantial amount of cognitive change which occurs in individuals following such an experience.

Another factor for consideration of these nonsignificant results is related to the amount of time that had passed since the trauma occurred. In the PTSD condition, over half of the participants wrote about traumatic events which occurred at least 20, and more often 30 or more years ago. Research on writing therapy indicates that participants who wrote about a more recent trauma showed greater improvement in symptoms than those who chose to write about a trauma farther in the past (Smyth, 1998). It is possible that over time, beliefs about the trauma and behaviors that result from the experience may simply be too well-established to be changed without additional treatment components.

Although no significant decreases in symptoms emerged, participants in both groups exhibited clinically relevant reductions in symptoms. The majority of
participants in the PTSD group no longer met criteria for a diagnosis of PTSD at posttest and these symptom reports were maintained at the 2-month follow-up. In addition, scores on the BDI-II were also reduced overall for this group. These score reductions were the equivalent to participants improving from "moderate" to "mild" depressive symptoms. Again, these reductions were maintained at the 2-month follow-up assessment.

Following treatment, half of the participants in the Burnout group reported reduced scores in either the Emotional Exhaustion and/or Depersonalization categories. This was the equivalent of no longer meeting syndromal levels of symptom endorsement. The level of reported depressive symptoms was also significantly reduced in participants in the Burnout condition. This group demonstrated reductions in scores which were equivalent to moving from "minimal" levels of depressive symptoms at pretest, to a exhibiting a "normal mood" at posttest. Again, these reductions were maintained at the 2-month follow-up assessment.

Secondary Outcomes

Post hoc comparisons were made in this investigation between participants who were and were not being treated with antidepressant medication. In this study, only participants in the PTSD group reported taking medication. These same participants reported having received psychotherapy at some time in the past for their symptoms of PTSD as well. As antidepressant medications continue to be prescribed
for individuals with Post-Traumatic Stress Disorder, it is important to evaluate the effectiveness of combining treatments for this disorder.

The medication and no medication individuals were statistically compared at pretest, posttest and 1- and 2-month follow-up. While no statistically significant differences in symptom reports were found between the two groups, effect sizes for these analyses were moderate, suggesting that in a larger sample size, statistically significant decreases may have been detected. Visual inspection of the data also suggested a greater improvement in symptoms in the individuals concurrently taking medication.

Limitations of This Study

A number of limitations affected the results of this study. The most obvious and relevant factor was the small sample size. This study suffered from both difficulty with recruitment and the rate of attrition in participants. Regarding recruitment, the study was conducted on two college campuses as well as a Veteran's Administration Medical Center. These sites would appear to have an adequate flow of potential participants who would both desire and qualify for the treatment study. However, despite recruitment efforts including newspaper advertisement, the posting of informational fliers, distribution of brochure advertisements, requests for referrals from mental and physical health care professionals, the study suffered from a lack of appropriate volunteers.
One possible reason for this lack of volunteers was that no monetary compensation was available for participation. For an investigational treatment that offers no promise of symptom reduction, additional incentive may be necessary to attract potential candidates.

In addition, research related to treatment of anxiety disorders indicates that patients often complain of and seek treatment for comorbid physical health problems before pursuing psychological assistance (Burstein, 1986). Possible factors related to this observation include lack of knowledge regarding the connection between PTSD symptoms and the disorder and discomfort with seeking help from a psychiatrist (Burstein, 1986). The association between psychiatric aid and social stigma cannot be overlooked. Many individuals are reluctant to admit to symptoms for fear of being judged as "crazy." In addition, the symptoms of PTSD in particular may be embarrassing or frightening for an individual further lessening the likelihood of disclosing this experience by seeking treatment. The social pressure for individuals to handle problems on their own is an important factor as well. Self-sufficiency is prized in our society and "needing help" is often viewed as at best a weakness, and at worst a character flaw. All of these factors may have contributed to the reluctance of individuals to take part in this "treatment" study.

Research indicates that treatment seeking is generally related to the degree to which symptoms interfere with daily living (Koenen, Goodwin, Struening, Hellman, & Guardino, 2003). However, this same research found that high levels of impairment were reported in individuals with PTSD who never sought treatment. Specifically,
these individuals reported that their anxiety interfered with their lives 40–60% of the time. Thus individuals with high levels of distressing symptoms may never seek treatment, perhaps for some of the reasons discussed above.

Researchers have also hypothesized that since treatment for PTSD generally involves having to talk about a frightening or uncomfortable experience, high levels of avoidance of trauma reminders may cause patients to actively avoid treatment (Lindy, Grace, & Green, 1981). One study found that although 36% of motor accident victims agreed to take part in the collection of longitudinal data, only 13% were willing to participate in an intervention study, despite high reported rates of distress (Brom, Kleber, & Defares (1989).

Early studies examining the rates of drop-out in patients with PTSD found that for patients who entered treatment within the first 9 weeks following the traumatic event the drop-out rate was 27%. This same study reported that for participants who entered treatment after the 40th week post-trauma, the drop-out rate increased to 82% (Burstein, 1986). In the present study, about half of the participants in the PTSD group dropped out during treatment or follow up sessions. Comparison of pretest CAPS-DX scores showed no significant differences in the levels of symptoms reported by those who dropped out compared to those who remained in the study. However, the tendency of individuals with PTSD to avoid of reminders of the trauma may have outweighed the desire for treatment.

The Burnout group did not suffer such dramatic attrition. However, by definition, participants in the PTSD condition were experiencing a greater degree of
distress than those in the Burnout condition and avoidance of distress is not associated with the syndrome of Burnout. Thus, it is likely that confronting the emotional response to a stressful work environment is simply more tolerable than confronting a traumatic memory.

Consideration should also be given to the fact that, in a writing treatment, participants decide what to write about and how much to reveal. In this way, each participant was in control over the “dose” of exposure to which he/she was exposed. Studies have suggested that individuals with more severe symptoms and those with higher levels of comorbid depression may be the one’s least likely to tolerate exposure treatments (Scott & Stradling, 1997).

This may have affected the results of the study in two ways. Participants who were experiencing higher levels of PTSD and depressive symptoms may have been able to stay in the study because they were in control of the degree to which each disclosed traumatic material. Participants may simply have chosen to limit the amount of disclosure related to the experience of trauma. On the other hand, higher degrees of symptom reduction may have resulted had participants been coached during the treatment related to what and how much to disclose.

Due to the high rates of attrition in this study, generalizability of the results was compromised. Even after collapsing the two groups and examining change in symptom reports, the sample size remained small. Thus, although the sample was varied with respect to demographics, traumatic events experienced, and work
situations discussed, the small sample size restricts the degree to which the conclusions of the study may be interpreted.

Several other factors related to the lack of generalizability of results. This sample of participants “self-selected” to take part in this investigation. It is unclear what if any characteristics differentiate this group from the larger population of individuals with PTSD and Burnout. Related to this, no formal assessment was made as to the type and degree of treatment participants in the PTSD group had received in the past. Based on the degree of improvement in PTSD symptom scores between those with and without prior psychotherapy, it is possible that having talked about and actively worked on these issues in the past made writing about them both easier and more productive.

There were also several limitations related to the inclusion/exclusion criteria utilized for this study. Regarding inclusion criteria, participants in the Burnout condition were included in the study if they endorsed symptoms which met the “high” range for both Emotional Exhaustion and Depersonalization/Cynicism score categories. No consideration was given to scores on the Personal Accomplishment category, for which low scores are necessary for a “pure” definition of burnout. As high scores on Personal Accomplishment are hypothesized to mediate the effects of both Emotional Exhaustion and Depersonalization/Cynicism, it is unclear what if any effect this more lenient definition of Burnout may have had on the resulting improvements reported by this sample. Because of this, these results may not generalize to the population of individuals with “pure” burnout syndrome.
To some degree, the exclusion criteria which were used in this study restricted the generalizability of the results. Participants who were suicidal, reported comorbid personality disorder characteristics, and/or thought disorders were excluded. Individuals with a diagnosis of PTSD commonly report comorbid personality disorders as well as suicidal ideation. Less often, psychosis is reported, and is more likely when the traumatic experience is of greater severity or more prolonged. However, exposure treatment is contraindicated when individuals are actively suicidal or experiencing significant thought disorder. Thus, these exclusions did not likely reduce generalizability of the results since in a “real-world” setting, trauma processing would not be advisable until these symptoms had stabilized. Regarding personality disorder characteristics however, this study reduced the generalizability of results as personality disorders are highly comorbid with PTSD.

Future Investigation and Conclusion

Due to the small sample size, the results of this study are best viewed as pilot data for future research. Several additions to the study protocol should be considered. Future studies in which participants are asked to confront potentially traumatic or distressing memories of past events should consider making the incentive to participate more immediately rewarding. This could aid with both the difficulty in recruitment and the high rates of attrition that hindered this study. Additionally, based on feedback given by individuals following the debriefing, future researchers would do well to include an opportunity for participants to verbally
reflect on the process of the writing treatment. This may aid researchers in understanding the effects of the writing treatment during the time it is occurring. In this way, researchers can address any potentially intolerable effects of the treatment experienced by participants and aid in “working through” these negative cognitions, thus increasing the likelihood that individuals would return to complete treatment.

Regarding the inclusion criteria, future studies may wish to apply a more stringent definition of Burnout, taking into account scores on the Personal Accomplishment category as well. In this way, the results of the study may be generalized to individuals with “pure” Burnout.

Future research should also address the issues discussed in relation to exclusionary criteria set up in this study. In “real-world” settings, participants particularly those with PTSD are likely to exhibit suicidal ideation, comorbid personality disorders and less often, psychosis. Although suicidal ideation and psychosis counter-indicate trauma processing, examination of the treatment with individuals with comorbid personality disorders would greatly enhance the generalizability of the results.

In conclusion, despite the lack of overall significant findings in the present study, diagnostically significant improvements resulted. The findings suggested that in a larger sample, overall statistical significance may have been found as well. These results support the further investigation of the use of writing therapy as a short-term and cost-effective means of improving symptoms of both PTSD and depression.
Appendix A

WMU Recruitment Postings
Have you experienced a traumatic event? (accident, assault, natural disaster)

Are you currently having symptoms such as trouble sleeping, irritability, and/or difficulty concentrating?

You may be eligible for a treatment study at WMU.

Please contact Jennifer Lewis at (513) 484-8803 for more information.
For more information, call Jennifer Lewis at 387-4332 at WMU.
You may be eligible for a research study on stress or burnout.
If you are experiencing job related

caring for a family member in the home?
(RN, counselor, EMT) or
Are you a "Helping Professional"?
Appendix B

Xavier University Recruitment Postings
Are you a “helping professional”? (Counselor, nurse, home-health care worker, EMT, fireman, or police?)

Are you experiencing fatigue, irritability, and difficulty concentrating?

You may be eligible for a treatment study now being conducted at Xavier University.

Please contact Jennifer Lewis at (513) 484-8803 for more information.
Have you experienced a traumatic event? 
(accident, assault, natural disaster)

Are you currently having symptoms 
such as trouble sleeping, 
irritability, 
and/or difficulty concentrating?

You may be eligible for a treatment study 
now being conducted at Xavier University.

Please contact Jennifer Lewis at (513) 484-8803 
for more information.
Appendix C

Cincinnati VAMC Recruitment Postings
Have you experienced a traumatic event? (accident, assault, natural disaster)

Are you currently having symptoms such as trouble sleeping, irritability, and/or difficulty concentrating?

You may be eligible for a study of an investigational treatment now being conducted at the Cincinnati VA Medical Center.

Please contact Jennifer Lewis at (513) 484-8803 for more information.
Are you a helping professional? (Counselor, nurse, home-health care worker, EMT, fireman, or police?)

Are you experiencing fatigue, irritability, and difficulty concentrating?

You may be eligible for a study of and investigational treatment now being conducted at the Cincinnati VA Medical Center.

Please contact Jennifer Lewis at (513) 484-8803 for more information.
Appendix D

Recruitment Brochures
"Burnout" refers to a syndrome often reported by those who do "people work." This includes individuals who work with people in distress as part of their job (nurses, police officers, Child Protective Service workers, Emergency Medical Technicians, medical doctors, firefighters, counselors, or people caring for sick or mentally ill children, elders or other family members in the home). If you are experiencing symptoms such as lack of energy, loss of motivation, or feeling emotionally drained by your work, you may be eligible to participate in a study of an investigational treatment currently taking place at the Cincinnati VA Medical Center.

The Cincinnati VA Medical Center is located at 3200 Vine Street in Cincinnati Ohio.
Clinical Researchers at the Cincinnati VA Medical Center are seeking individuals to take part in a study of an investigational treatment for "Burnout" or work-related chronic stress.

What is Burnout?

Burnout is the term used to describe chronic feelings of dissatisfaction, ineffectiveness, and/or lack of motivation toward work. Usually associated with the "helping professions", the syndrome may cause a lack of energy or excitement about work, feelings of increased stress while at work, as well as a loss of enjoyment of activities outside of work that you used to enjoy.

What types of therapies are usually prescribed for Burnout?

"Burnout" is not currently recognized as a psychological disorder. Therefore, no treatments are available specifically for this syndrome. However, traditional therapies such as psychotherapy and/or medication may be prescribed for chronic stress conditions such as burnout.

What type of therapy can I expect to receive if I decide to take part in this study?

Participants in this study will be offered a non-traditional form of therapy including the completion of several questionnaires, a one-on-one interview, and a series of writing therapy treatments. All sessions will be conducted at the Cincinnati VA Medical Center.

How long will the study take?

Involvement in the study may take up to 4 months. This is from the initial screening through the last follow-up session.

How long is each session?

The initial screening takes about 20 minutes. If you qualify, you will be asked to return for a more in depth screening which may last from 45-90 minutes. Each treatment session lasts approximately 45 minutes.

In addition, we invite you to return for 1 and 2 month follow-up sessions after your last treatment session. These sessions typically take about one hour to complete.

What is my obligation if I decide to participate?

There is no obligation and you are free to discontinue your participation at any time without penalty.

What if I can't participate right now, but might be interested in the future?

The study is currently in progress and will continue to run through October 2002. You may call at any time to get more information or to schedule the first screening session.

How do I know if I am eligible to take part?

To be eligible for this study, you must be a veteran and at least 18 years of age. In addition you must not be receiving any other form of treatment specifically for these symptoms.

Will I be paid for my participation?

We are not offering any monetary compensation for participation. However, you may have the benefit of experiencing a reduction in your symptoms of "burnout" due to the treatment. In addition, you have the knowledge that you are contributing to research in the area of treatments for chronic stress conditions.

Who will have access to my information?

Everything discussed or written during the study is regarded as confidential information. This means that the researchers and supervising psychologist cannot discuss the information you give with anyone outside the project unless they have your written consent. Any exceptions to this confidentiality will be discussed with you before the study begins.

In addition, when you come in for the initial screening, you will be asked to read and sign an informed consent. This is the only document that will have your name on it. It will be kept separate from your research file. After the initial screening, you will only be identified by a research number.

How do I get more information?

If you are interested in hearing more about the study, simply contact Jennifer Lewis at (513) 484-8803. You may leave a voice message with your name and number and a researcher will return your call.
When a person experiences a traumatic event such as an automobile accident, combat exposure, a natural disaster, a sexual or physical assault, or witnessing these events against others, he or she may develop symptoms of PTSD. If you have had such an experience at any time in your life and are currently having trouble sleeping, feel irritable, and are having difficulty concentrating, you may be eligible to participate in a study of an investigational treatment currently taking place at the Cincinnati VA Medical Center.

The Cincinnati VA Medical Center is located at 3200 Vine Street in Cincinnati Ohio.
Clinical Researchers at the Cincinnati VA Medical Center are seeking individuals to take part in an investigational study to evaluate a treatment for Post Traumatic Stress Disorder (PTSD).

What is PTSD?

PTSD stands for Post Traumatic Stress Disorder. When a person experiences a traumatic event outside the range of usual human experience he or she may develop symptoms such as being overly anxious or alert, having nightmares about the trauma, and/or difficulty sleeping or concentrating. Reactions such as these to a traumatic event are normal and may go away after several weeks. However, if these symptoms are still present a month after the traumatic incident occurred it becomes “Post Traumatic Stress Disorder” or “PTSD” and may require some type of treatment.

What types of therapies are usually prescribed for PTSD?

Traditional therapies for these types of symptoms may include psychotherapy and/or medication.

What type of therapy can I expect to receive if I decide to take part in this study?

Participants in this study will be offered a non-traditional form of therapy including the completion of several questionnaires, a one-on-one interview, and a series of writing therapy treatments. All sessions will be conducted at the Cincinnati VA Medical Center.

How long will the study take?

Involvement in the study may take up to 4 months. This is from the initial screening through the last follow-up session.

How long is each session?

The initial screening takes about 20 minutes. If you qualify, you will be asked to return for a more in depth screening which may last from 45-90 minutes. Each treatment session lasts approximately 45 minutes.

In addition, we invite you to return for 1 and 2 month follow-up sessions after your last treatment session. These sessions typically take about one hour to complete.

What is my obligation if I decide to participate?

There is no obligation and you are free to discontinue your participation at any time without penalty.

What if I can’t participate right now, but might be interested in the future?

The study is currently in progress and will continue to run through October 2002. You may call at any time to get more information or to schedule the first screening session.

How do I know if I am eligible to take part?

To be eligible for this study, you must be a veteran and at least 18 years of age. In addition you must not be receiving any other form of treatment specifically for these symptoms.

Will I be paid for my participation?

We are not offering any monetary compensation for participation. However, you may have the benefit of experiencing a reduction in your PTSD symptoms due to the treatment. In addition you will be making a contribution to research in the area of treatments for PTSD.

Who will have access to my information?

Everything discussed or written during the study is regarded as confidential information. This means that the researchers and supervising psychologist cannot discuss the information you give with anyone outside the project unless they have your written consent. Any exceptions to this confidentiality will be discussed with you before the study begins.

In addition, when you come in for the initial screening, you will be asked to read and sign an informed consent. This is the only document that will have your name on it. It will be kept separate from your research file. After the initial screening, you will only be identified by a research number.

How do I get more information?

If you are interested in learning more about the study, simply contact Jennifer Lewis at (513) 484-8803. You may leave a voice message with your name and number and a researcher will return your call.
Appendix E

WMU Informed Consent
Western Michigan University, Department of Psychology
Effects of Writing Therapy across PTSD, Subclinical PTSD and Chronic Stress
Principal Investigator: C. Richard Spates, Ph.D.
Student Investigator: Jennifer Lewis, M. A.

Consent for Participation in an Investigation

I have been invited to participate in a research project entitled, “Effects of Writing Therapy across PTSD, Subclinical PTSD and Chronic Stress.” This project is intended to study the treatment efficacy of writing therapy across several levels of stress. This project will be conducted under the direction of Dr. C. Richard Spates and will serve as Jennifer Lewis’ Doctoral Dissertation project. All interviews and treatments will be conducted by Jennifer Lewis or a trained research assistant. I am aware that there are other treatments available for PTSD and related disorders including traditional psychotherapy, psychopharmacological interventions and exposure related therapies. A referral list has been made available to me in the event I choose to seek alternative treatment. I have also been made aware that if I choose to seek alternative treatment during the research study, I am free to continue in the study, but my data will be excluded from the study results.

If I agree to participate in this research, I will be asked to take part in a 30 minute intake session, a 2 hour initial assessment session, and 4- 40 minute treatment sessions. In addition, I will be asked to return to the Psychology Clinic or Anxiety Disorders Research Facility approximately one week, one month and two months after the last treatment session. These additional sessions will involve the completion of questionnaires and follow-up interviews. All sessions will be conducted by researchers trained in the use of these procedures.

During the intake session I will be asked to complete two paper and pencil questionnaires and answer a list of questions asked me by the interviewer. The first paper and pencil questionnaire, the Life Events Checklist, will inquire about a number of potentially traumatic incidents which I may or may not have been exposed to. The second questionnaire, the Maslach Burnout Inventory, will inquire about my employment experiences and demographic information. The questions asked of me by the interviewer on the Personality Questionnaire will consist of questions about the way I view myself and my relationships with others. As a result of these assessments, I may not qualify for participation in the study. In such a case, if I desire counseling, I will be provided a list of mental health agencies which might assist me in locating suitable treatment at my own expense if I so choose. In addition, the research associate is prepared to provide additional immediate help if it is needed (e.g., relaxation techniques).

During the assessment session, I will be asked to take part in one structured interview and to complete seven questionnaires. The Clinician Administered PTSD Scale (CAPS-DX) will be administered to me by a trained researcher and will inquire about my thoughts, feelings and physical responses to the traumatic event(s) that I experienced. In addition, I will be asked to complete the Shipley Institute of Living Scale which is a general measure of my verbal skills, the State-Trait Anxiety Inventory, State Form (STAI-S) and the Beck Depression Inventory- II (BDI-II)
which will inquire about my feelings. The Coping Resources Inventory (CRI) will inquire about the ways in which I cope with stressors in my life. The Physical Health Questionnaire (PHQ) will inquire about my past and current physical health and a final questionnaire will inquire about the number of health care visits I have made recently. Finally, I will be asked to rate my level of distress.

There will be four treatment sessions, each 30 minutes long. These sessions are to be attended once a week for a period of one month. Treatment will consist of my writing about my traumatic experience(s) or my troublesome work experiences or both. At the end of each treatment session, my writing will be reviewed with me by a research associate and I will be debriefed following my writing session. In addition, at the end of each of the four treatment sessions I will be asked to complete the STAI-S, BDI-II and again rate my level of distress.

I have been told that in addition to the treatment sessions, I will be asked to return to the clinic for one post-test assessment and two follow-up assessment sessions. Each of these will take between 60 and 90 minutes. At post-test, I will be given a number of Beck Depression Inventories (BDI-II) and stamped, pre-addressed envelopes. I will be asked to complete one BDI-II per week and mail it to the clinic between follow-up visits as a means of monitoring my progress after treatment. At the final follow-up session, I will be debriefed on the study. I have also been made aware that if issues arise at any time during the research and I require additional therapy, I may contact the researchers.

All of the information collected from me will be kept entirely confidential. To facilitate confidentiality, a random code number will be assigned to my name which will then be used to identify all information relating to me (with the exception of this informed consent which bears identifying information to be used solely to schedule the assessment session). Jennifer Lewis will keep a master list which matches my name to the coded data. This master list, along with my informed consent form and all other coded data will be kept in a locked filing cabinet in the Psychology Clinic (3rd floor, Unified Clinics, WMU) accessible only to Jennifer Lewis, her advisor and trained research assistants. Once all of the data is collected and analyzed, the master list of names and codes will be destroyed. The remaining data will be retained for three years in a locked file in the Psychology Clinic. At the end of three years the data will be destroyed.

As in all research there may be unforeseen risks to the participant. If an accidental injury occurs, appropriate emergency measures will be taken; however no compensation or treatment will be made available to me except as otherwise specified in this consent form. One potential risk of my participation in this study may be my emotional upset from the initial questionnaire, structured interview or treatment sessions. However, I am aware that I may withdraw my consent to the research or discontinue participation in the research at any time without prejudice, penalty, or risk of any loss of service I might otherwise have received. Furthermore, if I should become emotionally distressed during the interview, the researcher is prepared to terminate the interview and implement a relaxation exercise with me. In addition, the researcher is prepared to make a referral if I choose to seek counseling about this topic. I will be responsible for the cost of therapy if I choose to pursue it.
One possible benefit of participating in this study may be the opportunity to discuss and write about the traumatic event(s)/situation(s) I have experienced and to share my related thoughts and feelings. Research indicates that this may be beneficial to individuals who have suffered from a traumatic event. In addition, as a result of participating in this study, I may contribute to the knowledge base regarding treatments for post traumatic stress disorder and other stress related disorders.

If, at the completion of this research study, I would like to seek further treatment, I may do so at my own expense at the Psychology Clinic at Western Michigan University or one of the facilities listed on the referral sheet I have received with this consent document.

If I have any questions or concerns about this study, I may contact either Jennifer Lewis at 387-4332 or 552-9447 or Dr. Spates at 387-4329. I may also contact the Chair, Human Subjects Institutional Review Board (387-8293) or the Vice President for Research (387-8298) if questions or problems arise during the course of the study. This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Subjects should not sign this document if the corner does not show a stamped date and signature on each page.

My signature below indicates that I have read and fully understand this document and agree to participate in this study.

Name (Please Print) ___________________________ Date ____________

Signature ___________________________ Subject Number ____________
Appendix F

Xavier University Informed Consent
Western Michigan University, Department of Psychology  
Xavier University, Department of Psychology  
Effects of Writing Therapy across Post Traumatic Stress Disorder and Chronic Stress  
Principal Investigator: Jennifer Lewis, M.A.  
Co-Principal Investigator: C. Richard Spates, Ph.D. (WMU)  
Faculty Advisor: Karl Stukenberg, Ph.D. (XU)

I have been invited to take part in the research study, “Effects of Writing Therapy across Post Traumatic Stress Disorder and Chronic Stress.” This study will look at a treatment for stress related disorders. This study will show if the treatment is useful in reducing the symptoms of these disorders.

There are other treatments available for these disorders. These treatments include traditional psychotherapy, medicine, and behavior therapies. I have been given a referral list that I may use if I decide to try a different type of treatment. If I choose to receive another treatment after I begin the study, I can continue to participate in this study.

I will be asked to attend two screening meetings. These meetings will show whether I qualify for the study. I will be asked to meet the researcher at the Psychological Services Center at Xavier University. During the first meeting I will be given the Life Events Checklist. I will be asked to show which of the events has happened to me. The second set of questions, The Demographic Questionnaire, will ask for some general information about me. I will then be asked about my feelings toward my work on the Maslach Burnout Inventory. The interviewer will also ask me questions about the way I think of myself and my relationship with others. As a result of all of these questions, I may not qualify to take part in the study. If this happens, I will be provided a list of mental health agencies in the area. This list is to help me find treatment somewhere else if I wish. If I decide to get treatment at one of these places, I will have to pay for this therapy. In addition, if I become distressed during the treatment session, the researcher is prepared to provide crisis counseling if necessary.

During the second meeting, I will be interviewed with the CAPS-DX. I will be asked about my thoughts, feelings and physical responses to the stressful event(s) that happened to me. I will also be asked to answer questions on the Shipley Institute of Living Scale. This is a general measure of my verbal skills. I will then be asked to fill out the Beck Depression Inventory-II (BDI-II) and asked some additional questions about depressive symptoms I may be experiencing. In addition, I will be asked to complete the State-Trait Anxiety Inventory (State Form) (STAI-S) which will ask a number of questions about my feelings. The Coping Resources Inventory (CRI) will ask about the way I cope with stress. I will also be asked about my past and current physical health on the Physical Health Questionnaire. I will then be asked about the number of visits to the doctor that I have made recently. Finally, I will be asked to rate my level of distress.

Again, as a result of all of these questions, I may not qualify to take part in the study. If this happens, I will be provided a list of mental health agencies so that I may find treatment somewhere else if I wish. I will have to pay for this therapy if I contact one of these places.
There will be four writing treatment sessions. These sessions will take about 40 minutes. These sessions will take place once a week for four weeks. I will be asked to write about an experience I have had which continues to cause me distress or to write about a stressful work situation. My writing will be read by the researcher at the end of each treatment session. My level of distress will be monitored. I will also be asked about my feelings at that time.

After the last treatment session, I will be asked to come back a week later to complete several questionnaires. I will then be asked to return once a month for two months to complete these questionnaires again. Each of these meetings will take about 60 minutes. At the first and second sessions following treatment, I will be given four BDI-II's and asked to complete one BDI-II per week and mail it to the researcher. This is to keep track of my progress after treatment. At the final meeting, a researcher will talk with me about my thoughts and feelings about taking part in this study.

If I would like to get more treatment when I finish the study, I will have to pay for it myself. I have been given a mental health resource sheet which I may use to find treatment. If any problems arise at any time during the research and I require more help I may contact the principal investigator at (513) 484-8803. If I am unable to contact a researcher I may contact one of the resources on the mental health resource sheet.

As in all research there may be risks to the participant that we do not expect. If an accidental injury occurs, appropriate emergency measures will be taken. No compensation or treatment will be made available to me except as otherwise specified in this consent form. One possible risk of my participation in this project is that I may be upset by the content of the interview. I may also become upset when writing about my stressful experience. However, the researcher is prepared to provide crisis counseling if needed. She is also prepared to make a referral if I need further counseling about this topic. I will be responsible for the cost of therapy if I choose to pursue it.

One way in which I may benefit from this activity is having the chance to talk and write about the experience(s) I have had. Studies have shown that this may help people who have experienced a stressful event. In addition, others who experience stressful events may benefit from the knowledge that is gained from this research.

All of the information collected from me is confidential. That means that my name will not appear on any papers on which this information is recorded. The forms will all be coded and Jennifer Lewis will keep a separate master list with the names of participants and their code numbers. Once the data has been collected and analyzed, the master list will be destroyed. All other forms will be retained for three years in a locked file in the Psychological Services Center at Xavier University.

My participation is voluntary and I may refuse to participate, or may discontinue my participation AT ANY TIME, without penalty or loss of benefits to which I am otherwise entitled. The investigator has the right to withdraw me from the study AT ANY TIME. My withdrawal from the study may be for reasons related solely to me (e.g. not following study-related directions from the Investigator; a serious adverse reaction) or because the entire study has been terminated. If I have any questions or concerns about this study, I may phone either Jennifer Lewis at (513) 484-8803 or Dr. Stukenberg at (513) 745-3531.
I may also contact the Jennifer Lewis by email at jennifer.lewis@wmich.edu or the Western Michigan University Human Subject’s Institutional Review Board at research-compliance@wmich.edu.

This consent document has been approved for use for one year by the HSIRB at WMU as indicated by the stamped date and signature of the board chair in the upper right corner. Subjects should not sign this form if the corner does not show a stamped date and signature on each page. My signature below shows that I have read the purpose and requirements of the study and that I agree to take part.

Name (Please Print) ___________________________________________ Date __________

Signature ___________________________________________ Subject Number __________
Appendix G

Cincinnati VAMC Informed Consent
Title of Study: “Effects of Writing Therapy across PTSD and Chronic Stress”

Investigator Information:

Jennifer Lewis, MA
Principal Investigator

Contact Information:

861-3100 X 4719
Pager: 230-6578

Introduction:

Before agreeing to participate in this study, it is important that the following explanation of the proposed procedures be read and understood. It describes the purpose, procedures, risks, and benefits of the study. It also describes the right to withdraw from the study at any time. It is important to understand that no guarantee or assurance can be made as to the results of the study.

I, ___________________, have been asked to participate in the research study under the direction of Jennifer Lewis, MA and supervised by Dr. Megan Murray. Other professional persons associated with the study may assist or act for them.

This research is not sponsored.

I will be one of approximately 13 subjects to participate in this trial.

A total of 20 subjects at two institutions across the country will be taking part in this study.

Purpose:

The purpose of this research study is to examine an experimental treatment for stress-related conditions including Post Traumatic Stress Disorder (PTSD) and Burnout. PTSD is a psychological disorder that may result from exposure to an event which involves life threat or serious injury. Burnout is a syndrome which may result from a stressful and/or unpleasant work environment. This study will show if the treatment is useful in reducing the symptoms of these conditions. I have been asked to enroll in this study because I have been diagnosed with either Post Traumatic Stress Disorder or report symptoms indicative of burnout.

Duration:

My participation in this study will require a total of 8-10 hours of my time and may last up to four months.
PROCEDURES:

During the course of the study, I will be asked to attend two screening meetings. These meetings will show whether I qualify for the study. I will be asked to meet a researcher at the Cincinnati VA Medical Center. During the first meeting, which will take about 20 minutes, I will be given the Life Events Checklist. I will be asked to show which of the events have happened to me. The second set of questions, The Demographic Questionnaire, will ask for some general information about me. I will then be asked about my feelings toward my work on the Maslach Burnout Inventory. The interviewer will also ask me questions about the way I think of myself and my relationship with others. As a result of all of these questions, I may not qualify to take part in the study. If this happens, I will be provided a list of mental health agencies. This list is to help me find treatment somewhere else if I wish. If I decide to get treatment at one of these places, I have been told that this study will not cover those costs. The researcher is also prepared to provide more help at that time if it is needed.

During the second meeting which will take between 60-90 minutes, I will be interviewed with the Clinician Administered Post Traumatic Stress Disorder Survey for DSM-IV (CAPS-DX) which will ask about my thoughts, feelings and physical responses to the stressful event(s) that happened to me. I will also be asked to answer questions on the Shipley Institute of Living Scale. This is a general measure of my verbal skills. I will then be asked to fill out the Beck Depression Inventory-II (BDI-II) and the State-Trait Anxiety Inventory (State Form) (STAI-S). These forms will ask a number of questions about my feelings. The Coping Resources Inventory (CRI) will ask about the way I cope with stress. I will also be asked about my past and current physical health on the Physical Health Questionnaire. I will then be asked about the number of visits to the doctor that I have made recently. Finally, I will be asked to rate my level of distress.

These tests will determine my eligibility to enroll in the treatment part of the study. Again, as a result of all of these questions, I may not be eligible for this treatment. If this happens, I will be provided a list of mental health agencies so that I may find treatment somewhere else if I wish. If I chose to engage in treatment at another facility, I will have to pay for this therapy myself.

If I qualify for the study, I have been asked to attend four writing treatment sessions. These sessions will take about 40 minutes each. These sessions will take place once a week for one month. I will be asked to write about an experience I have had which continues to cause me distress. My writing will be read by the researcher at the end of each treatment session. My level of distress will be monitored. I will also be asked about my feelings at that time.

I will be asked to come back three more times after treatment is finished for follow-up meetings. Each of these meetings will take 60 to 90 minutes. I will be given four BDI-II’s after the first meeting. I will be asked to complete one BDI-II per week and mail it to the researcher. This is to keep track of my progress after treatment. At the final meeting, a researcher will talk with me about my thoughts and feelings about taking part in this study.

If I would like to get more treatment when I finish the study, I will have to pay for it myself. I have been given a mental health resource sheet, which I may use to find treatment. If any problems arise at any time during the research and I require more help I may contact the researchers. If I am unable to contact a researcher, I understand that I may contact one of the resources on the mental health resource sheet.
EXCLUSION:
I should not participate in this study if any of the following apply to me:
1. I am not at least 18 years old.
2. I am enrolled in any form of psychotherapy for my PTSD or chronic stress symptoms.
3. I am enrolled in another treatment study for my PTSD or chronic stress symptoms.
4. I am experiencing suicidal or homicidal thoughts.
5. I am experiencing hallucinations or delusions.

If I am taking medication for a psychological condition, the dosage has not been changed for the six weeks prior to beginning the study and I do not plan to change the medication dosage during the study. If my doctor changes the dosage, I agree to notify the researcher of this change.

RISKS/DISCOMFORTS:
As in all research there may be risks to the participant that the investigators do not expect. If an accidental injury occurs, appropriate emergency measures will be taken. One possible risk of my participation in this project is that I may be upset by the content of the interview. I may also become upset when writing about my stressful experience. I have been informed that if I have Post Traumatic Stress Disorder, my symptoms may become worse during the course of treatment. However, the researcher is prepared to provide crisis counseling if needed. S/he is also prepared to make a referral if I need further counseling or psychotherapy about this topic. I will be responsible for the cost of therapy if I choose to pursue it.

I have been informed that if any of the questions or assessments are too stressful, I may discontinue at any time. I understand that if I do not complete the assessments or answer certain questions, I may still take part in the study, but my information will not be used in the study results.

There also may be risks and discomforts which are not yet known.

BENEFITS:
One way in which I may benefit from this activity is having the chance to talk and write about the experience(s) I have had. Studies have shown that this may help people who have experienced a stressful event. In addition, others who experience stressful events may benefit from the knowledge that is gained from this research.

ALTERNATIVES:
The following alternative procedure or treatments are available if I choose not to participate in this study:

Traditional psychotherapy, medicine, and behavior therapies are available for treatment of my Post Traumatic Stress Disorder symptoms. I have been told that there are no currently recognized treatments for burnout. I have been given a referral list that I may use if I decide to try a different type of treatment. I have also been made aware that if I choose to receive another treatment during the study I can still take part in the study if I would like.

NEW FINDINGS:
I have been told that I will receive any new information during the course of the study concerning significant treatment findings that may affect my willingness to continue my participation.
CONFIDENTIALITY:
Every effort will be made to maintain the confidentiality of my study records. My name will not appear on any papers on which my study information is recorded. The forms will all be coded and Jennifer Lewis will keep a separate master list with the names of participants and their code numbers. Once the data are collected and analyzed, the master list will be destroyed. All other forms will be retained for three years in a locked file at the Psychology Clinic at Western Michigan University. In addition, this data will accessible to the Institutional Review Board at the University of Cincinnati. The data from the study may be published; however, I will not be identified by name. My identity will remain confidential unless disclosure is required by law. If, during this study, I report that I plan to hurt myself or another person this confidentiality will be broken and appropriate actions will be taken as required by law.

FINANCIAL COSTS TO THE SUBJECT:
Funds are not available to cover the costs of any ongoing medical care and I remain responsible for the cost of non-research related care. Tests, procedures, or other costs incurred solely for the purposes of research will not be my financial responsibility. If I have questions about my medical bill relative to research participation, I may contact Jennifer Lewis.

Department of Veterans Affairs Medical Center (VA) patients may be financially responsible for care at the Department of Veterans Affairs Medical Center. FINANCIAL RESPONSIBILITY IS INDIVIDUALLY DETERMINED BASED UPON LEGISLATIVE CRITERIA.

COMPENSATION IN CASE OF INJURY:
If I am injured as a result of research, I will contact Jennifer Lewis at 513-861-3100 extension 4719 or the Chairman of the Institutional Review Board at 513-558-5259. The University of Cincinnati Medical Center makes decisions concerning reimbursement for medical treatment for injuries occurring during or caused by participation in biomedical or behavioral research. In the event I become ill or injured as a direct result of my participation in the research study, necessary medical care will be made available to me. The University, at its discretion, will pay medical expenses necessary to treat such injury (1) to the extent I am not otherwise reimbursed by my medical or hospital insurance, or by third party or governmental programs providing such coverage, and (2) provided I have used the study treatment as directed by the study director in accordance with the study protocol. Financial compensation for such things as lost wages, disability or discomfort due to injury during research is not routinely available.

PAYMENTS TO PARTICIPANTS:
I have been told that I will receive no payment for my participation in this study.

RIGHT TO REFUSE OR WITHDRAW:
It has been explained to me that my participation is voluntary and I may refuse to participate, or may discontinue my participation AT ANY TIME, without penalty or loss of benefits to which I am otherwise entitled. I have been told that the investigator has the right to withdraw me from the study AT ANY TIME. I have been told that my withdrawal from the study may be for reasons related solely to me (e.g., not following study-related directions from the Investigator; a serious adverse reaction) or because the entire study has been terminated.

OFFER TO ANSWER QUESTIONS:
This study has been explained to my satisfaction by _____________ and my questions were answered. If I have any other questions about this study, I may call Jennifer Lewis at 513-861-3100, extension 4719.

If I have any questions about my rights as a research subject, I may call the IRB Chairperson at 513-558-5259.

IF RESEARCH RELATED INJURY OCCURS, I WILL CALL Jennifer Lewis at 513-861-3100 extension 4719.

LEGAL RIGHTS:
Nothing in this consent form waives any legal right I may have nor does it release the investigator, the institution, or its agents from liability or negligence.

I HAVE READ THE INFORMATION PROVIDED ABOVE. I VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY. AFTER IT IS SIGNED, I WILL RECEIVE A COPY OF THIS CONSENT FORM.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board at Western Michigan University as indicated by the stamped date and signature of the board chair in the upper right corner. Subjects should not sign this form if the corner does not show a stamped date and signature on each page. My signature below shows that I have read the purpose and requirements of the study and that I agree to take part.

Subject Signature

Date

Subject Name (Please Print)

For Research use: Subject Number

Signature or Title of Person Obtaining Consent and Identification of Role in Study

Date
Appendix H

Personality Questionnaire
## Personality Questionnaire

<table>
<thead>
<tr>
<th>Q#</th>
<th>Not at all (0)</th>
<th>Sometimes (1)</th>
<th>Frequently (2)</th>
<th>How often do you find yourself:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td></td>
<td></td>
<td></td>
<td>Being preoccupied with details, rules, lists, order, organization or schedules to the extent that the major point of the activity is lost</td>
</tr>
<tr>
<td>2B</td>
<td></td>
<td></td>
<td></td>
<td>Having the idea that someone else can control your thoughts</td>
</tr>
<tr>
<td>3C</td>
<td></td>
<td></td>
<td></td>
<td>Engaging in frantic efforts to avoid real or imagined abandonment (not including self-mutilating or suicidal behavior)</td>
</tr>
<tr>
<td>4A</td>
<td></td>
<td></td>
<td></td>
<td>Showing perfectionism that interferes with task completion (i.e., unable to complete a project because overly strict standards are not met</td>
</tr>
<tr>
<td>5A</td>
<td></td>
<td></td>
<td></td>
<td>Being overconscientious, scrupulous, and inflexible about matters of morality, ethics, or values (not accounted for by cultural or religious identification)</td>
</tr>
<tr>
<td>6B</td>
<td></td>
<td></td>
<td></td>
<td>Hearing voices that other people do not hear</td>
</tr>
<tr>
<td>7C</td>
<td></td>
<td></td>
<td></td>
<td>Having a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluing the other person</td>
</tr>
<tr>
<td>8A</td>
<td></td>
<td></td>
<td></td>
<td>Being reluctant to delegate tasks or to work with others unless they submit to exactly your way of doing things</td>
</tr>
<tr>
<td>9B</td>
<td></td>
<td></td>
<td></td>
<td>Believing that other people are aware of your private thoughts</td>
</tr>
<tr>
<td>10A</td>
<td></td>
<td></td>
<td></td>
<td>Showing rigidity and stubbornness</td>
</tr>
<tr>
<td>11C</td>
<td></td>
<td></td>
<td></td>
<td>Engaging in recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior</td>
</tr>
<tr>
<td>12C</td>
<td></td>
<td></td>
<td></td>
<td>Exhibiting emotional instability due to a distinct reactivity of mood- mood swings (i.e., intense episodic depressed mood, irritability, or anxiety usually lasting a few hours and rarely more than a few days)</td>
</tr>
<tr>
<td>13C</td>
<td></td>
<td></td>
<td></td>
<td>Having chronic feelings of emptiness</td>
</tr>
<tr>
<td>14B</td>
<td></td>
<td></td>
<td></td>
<td>Having thoughts that are not your own</td>
</tr>
<tr>
<td>15A</td>
<td></td>
<td></td>
<td></td>
<td>Having to repeat the same actions such as touching, counting or washing</td>
</tr>
<tr>
<td>16B</td>
<td></td>
<td></td>
<td></td>
<td>Having thoughts about sex that bother you a lot</td>
</tr>
<tr>
<td>17B</td>
<td></td>
<td></td>
<td></td>
<td>Having the idea that you should be punished for your sins</td>
</tr>
<tr>
<td>18C</td>
<td></td>
<td></td>
<td></td>
<td>Having inappropriate, intense anger or difficulty controlling anger (frequent displays of temper, constant anger, recurrent physical fights)</td>
</tr>
</tbody>
</table>

A = OCPD, B = Psy; C = BPD
Appendix I

Mental Health Resources (Kalamazoo, MI)
Michigan Community Mental Health Services Programs

Allegan County CMH
3285 122nd Avenue
P.O. Drawer 130
Allegan, MI 49010
(616) 673-6617
24-Hour Emergency: (616) 673-6617

Barry County CMH
915 West Green Street, Suite 201
Hastings, MI 49058
(616) 948-8041
24-Hour Emergency: (800) 442-7315

Berrien Mental Health Authority (formerly Berrien County CMH)
1485 M-139, P.O. Box 547
Benton Harbor, MI 49023
(616) 925-0585
24-Hour Emergency: (616) 925-0585

Behavioral Health Systems of Calhoun County
140 West Michigan Avenue
Battle Creek, MI 49017
(616) 966-1460
24-Hour Emergency: (616) 966-1456

Gryphon Place
1104 S. Westnedge Avenue
Kalamazoo, MI 49008
(616) 381-1510
24-Hour Emergency: (616) 381-HELP

Kalamazoo County CMH
3299 Gull Road, P.O. Box 63
Nazareth, MI 49074
(616) 373-5220
24-Hour Emergency: (616) 373-5220

Kalamazoo Consultation Center
920 John Street
Kalamazoo, MI 49001
(616) 343-6109

Van Buren County CMH
801 Hazen Street, Suite C
P.O. Box 249
Paw Paw, MI 49079
(616) 657-7702
24-Hour Emergency: (800) 922-1418
Appendix J

Mental Health Resources (Cincinnati, OH)
EMERGENCY HELP (24 HOUR)
9-1-1

Crisis Intervention:

UNIVERSITY HOSPITAL PSYCHIATRIC EMERGENCY SERVICES
(513) 584-8577
234 Goodman, Cincinnati, OH
24 hour psychiatric emergency care; suicidal crisis intervention

Rape/Domestic Violence Hotlines:

WOMEN HELPING WOMEN
(513) 872-9259
216 East 9th Street, 3rd Floor, Cincinnati, OH
No fee-free services; crisis counseling; individual counseling; court advocates for sexual assault, domestic violence, and stalking

WOMEN'S CRISIS CENTER
(859) 491-3335
835 Madison Avenue, Covington, KY
No fee-free services; services to victims of domestic violence; individual and group counseling; court advocates; safe shelter

Battered Women’s Shelter/Crisis Helpline:

YWCA
1-800-618-6523
OR (513) 863-7099
crisis intervention; screening; referral

YWCA OF HAMILTON
(513) 856-9800
244 Dayton Street, Hamilton, OH
Offers housing on sliding fee; support groups; referrals to domestic violence shelters such as Dove House

Cincinnati Area

Mental Health

Resources
This brochure is presented to assist you in finding alternative mental health treatment in the event you experience difficulties during the study and are unable to contact the researcher for assistance. It may also be used as a starting point if you decide to seek alternative treatment and discontinue your participation in the study. It is not intended to be a comprehensive list of mental health facilities in the area nor is it intended to promote one service over another.

Counseling/Psychological Services:

FAMILY SERVICES OF CINCINNATI
(513) 381-6300
Multiple facilities throughout the area; Sliding fee based on income and number of people in household; $5 minimum pmt; adults, children, family therapy; anger management groups, parenting classes, crisis counseling; outpatient substance abuse counseling

Also offers services in Sharonville, Eastgate, Hyde Park, Covington

XAVIER UNIVERSITY
PSYCHOLOGICAL SERVICES CENTER
(513) 745-3531
3818 Winding Way (off Dana Avenue)
Sliding fee; student therapists; individuals, couples, families, children

CATHOLIC SERVICES OF BUTLER COUNTY
(513) 863-6129
140 North 5th Street, Hamilton, OH
Sliding fee based on income and # people in household; individual, couples, family, and child therapy; parent aid program; home visits; parenting classes; adoption services

LIFESPAN, INC. OF HAMILTON
(FORMERLY FAMILY SERVICES)
(513) 867-7545
11 Buckeye Street, Hamilton, OH
Sliding fee based on income; individual, family, and child therapy; crisis counseling

CLERMONT COUNSELING CENTER
(513) 248-0421
512 High Street, Milford, OH
Sliding fee based on income; individual, couples, and family therapy (no child therapy); domestic violence group therapy

MIAMI UNIVERSITY PSYCHOLOGY CLINIC
1-513-529-2423
18 Benton Hall, High Street; Oxford, OH
$10/visit with sliding fee available; student therapists addressing a range of mental health issues; crisis counseling, ADHD evaluations

COMPREHENSIVE COUNSELING SERVICES
1-513-424-0921
1659 South Breiel Blvd; Middletown, OH
Service for Butler County residents only: sliding fee based on household income; Facility treats all mental health issues; Offers individual, couple, and family therapy; Offers drug and alcohol treatment
Appendix K

Subjective Units of Distress (SUDs) Rating Sheet
SUDs Rating Sheet

Subject #: ______________________

Initial SUDs at Pretest: ______________________

SUDs at Treatment #1: ______________________

SUDs at Treatment #2: ______________________

SUDs at Treatment #3: ______________________

SUDs at Treatment #4: ______________________

SUDs at Post-test: ______________________

"On a scale from 1 to 10, with 10 being the most distress you have ever experienced, and 1 being no distress at all (or totally calm), how would you rate your present level of distress?"
Appendix L

Depression Screener
Depression Screener

A- Five or more of the following symptoms during the same 2 week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

1. depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful)

2. markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)

3. significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day

4. insomnia or hypersomnia nearly every day

5. psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

6. fatigue or loss of energy nearly every day

7. feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)

8. diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or observed by others)

9. recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or specific plan for committing suicide

B. Symptoms do not meet criteria for a mixed episode

C. Symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

D. Symptoms not due to direct physiological effects of a substance (drug abuse or medication) or GMC (e.g., hypothyroidism)

E. Symptoms not better accounted for by bereavement (sx longer than 2 months following loss of loved one)

--- Meets criteria for MDD- refer for medication evaluation and continue with assessments.

--- Does not meet criteria for MDD. Continue with assessments.
Appendix M

Physical Health Questionnaire
Physical Health Questionnaire

Your name will not appear on this questionnaire, so please answer as honestly and accurately as possible. Thank you for your time.

1) Have you ever suffered from any of the following health conditions or symptoms? Please circle all that apply to you.
2) To the best of your recollection, please indicate how long ago the condition(s) or symptom(s) developed (please circle the appropriate time length).
3) How much distress has the condition(s) or symptom(s) caused you? Please circle the appropriate distress level.

<table>
<thead>
<tr>
<th>Conditions/Symptoms</th>
<th>How long ago did this health issue develop?</th>
<th>Amount of distress it caused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weeks Months Years Other None Slight Moderate Extreme</td>
<td></td>
</tr>
<tr>
<td>Headaches</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Seizures</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Neurological Problems</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Back Pain</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Gastrointestinal Problems</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Ulcer</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Cancer</td>
<td>1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10</td>
<td>0 1 2 3</td>
</tr>
</tbody>
</table>
# Health Questionnaire (Continued)

<table>
<thead>
<tr>
<th>Conditions/Symptoms</th>
<th>How long ago did this health issue develop?</th>
<th>Amount of distress it caused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weeks</td>
<td>Months</td>
</tr>
<tr>
<td>Chest Pains</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Fatigue</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Stroke</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Audiolgical Problems</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Weight Loss (unintentional)</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Chronic Pain</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Arthritis</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Nausea</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Skin Rashes</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Asthma</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Sexual Dysfunction</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
</tbody>
</table>
4) If you circled any of the health issues above, please list the condition and indicate how long each condition and/or symptom persisted by circling the appropriate time length.

<table>
<thead>
<tr>
<th>Conditions/Symptoms</th>
<th>Weeks</th>
<th>Months</th>
<th>Years</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Still Present</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Still Present</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Still Present</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Still Present</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Still Present</td>
</tr>
</tbody>
</table>

5) Were any of these health conditions or symptoms diagnosed and/or treated by a physician?
   Yes____________________  No____________________

6) If you answered YES to #5, to which health conditions were you referring?

Condition/Symptom:________________________
Approximate date of diagnosis (month & year):________________________
Health Questionnaire (Continued)

7) Were any of the health conditions or symptoms related to the traumatic stressor(s) you experienced?
   Yes ________  No ________  Not sure ________

8) If you answered YES to #7, to which health conditions were you referring?
   Condition/Symptom:
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________
   ___________________________________________________________

9) Do you currently smoke?    Yes ________  No, but I used to ________  No, I have never smoked ________

10) If you currently smoke/used to smoke, how long did you smoke and how many packs per day did/do you smoke?
    Length of time smoking ________  Number of packs/day ________

11) Do you consume alcohol? Yes ________  No, but I used to ________  No ________

12) If you currently consume alcohol/used to consume alcohol, how often did/do you?
    ____ Less than once a month
    ____ Once a month
    ____ Several times a month
    ____ Once a week
    ____ Several times a week
    ____ Every day
    ____ Other (please specify) ____________________________
Appendix N

Health Center Visits Questionnaires
Health Center Visits for Illness  
(Pre-test)

In the past two months, how many times have you been to a medical facility (doctor’s office, community clinic or university health center) for illness? Illness is defined as any presenting complaint that could be attributed to an acute infection or other internal cause related to injury. Please note: regular check-ups, health prevention (e.g., flu shots) or maintenance (allergy shots), or other routine tests (PAP smears) are not counted as illness visits. More than one visit to the physician for the same complaint in an 8-day period should be considered as a single visit.

Please circle the number of visits:

1 visit 2 visits 3 visits 4 visits More (specify) _____
Health Center Visits for Illness
(Post-test)

Since your pre-test assessment, how many times have you been to a medical facility (doctor’s office, community clinic or university health center) for illness? Illness is defined as any presenting complaint that could be attributed to an acute infection or other internal cause related to injury. Please note: regular check-ups, health prevention (e.g., flu shots) or maintenance (allergy shots), or other routine tests (PAP smears) are not counted as illness visits. More than one visit to the physician for the same complaint in an 8-day period should be considered as a single visit.

Please circle the number of visits:

1 visit  2 visits  3 visits  4 visits  More (specify) ___
Since you had your last appointment with us, how many times have you been to a medical facility (doctor's office, community clinic or university health center) for illness? Illness is defined as any presenting complaint that could be attributed to an acute infection or other internal cause related to injury. Please note: regular check-ups, health prevention (e.g., flu shots) or maintenance (allergy shots), or other routine tests (PAP smears) are not counted as illness visits. More than one visit to the physician for the same complaint in an 8-day period should be considered as a single visit.

Please circle the number of visits:

1 visit  2 visits  3 visits  4 visits  More (specify) _____
Since your last appointment with us, how many times have you been to a medical facility (doctor’s office, community clinic or university health center) for illness? Illness is defined as any presenting complaint that could be attributed to an acute infection or other internal cause related to injury. Please note: regular check-ups, health prevention (e.g., flu shots) or maintenance (allergy shots), or other routine tests (PAP smears) are not counted as illness visits. More than one visit to the physician for the same complaint in an 8-day period should be considered as a single visit.

Please circle the number of visits:

1 visit  2 visits  3 visits  4 visits  More (specify) ___
Appendix O

Appointment Reminder Script
Scripts for phoning study participants with reminders

(1) Before each treatment session:
"Hi, this is (name of researcher that is calling). I’m calling to remind you of your scheduled appointment tomorrow (date), at (time). We have you schedule to meet with (name of researcher that is overseeing therapy session). Does that time still work for you?

If participant indicates that he/she will be unable to make it, researcher will respond with:

"Is there another time that would be more convenient for you to come in?"

If participant indicates that there is not another time, researcher will respond with:

"Would you like to discontinue your participation in this study?"

If participant indicates that he/she would like to discontinue participation, the researcher will respond with" 

"Okay, well, Thank You for your time. Good bye."

If participant indicates that he/she will attend the prescheduled time, the researcher will respond with:

"Okay, we will see you tomorrow at (time). Thank you, Good-bye.

(2) To remind participants to send BDI-II’s in between post-test and follow-up sessions:

"Hi this is (name of researcher that is calling). I am just calling to remind you of the weekly mail-in of the BDI-II in conjunction with the writing therapy study in which you are participating. Thank you for your time."
Appendix P

Standardized Writing Instructions
Standardized Writing Instructions

“During each of the four writing days I want you to write about the traumatic and upsetting experience you discussed with the interviewer. Please write about this same topic for all 4 days. It is most important that you write about your deepest thoughts and feelings. Ideally, whatever you write about should deal with an event or experience that you have not talked with others about in detail.

Again, we thank you for your participation in this study. Do you have any questions before you begin writing?”
Appendix Q

Debriefing Script
DEBRIEFING SCRIPT

► Conduct the debriefing immediately after completing Follow up 2.
► Read the italicized portions of this document to the participant.
► Make notes of the participants’ responses on the Debriefing Script (Participant Comments) sheet.

"Now that you have completed the study, I would like to go over a few things with you. We call this the “Debriefing” portion of the study. I would like to give you a description of the study, tell you about some of the ways we hope the research will benefit you and/or others, and give you the opportunity to ask any questions or express any concerns you may have about the study with me today.”

Description and Purpose:

“A number of studies have suggested that writing about traumatic experiences may have significant mental and physical health benefits.

In this study, we examined whether the writing treatment would be effective in reducing symptoms of PTSD such as unwanted memories, difficulty sleeping and concentrating, irritability or angry outbursts. For the group with burnout, we wanted to see if writing about their work experiences would reduce their stress, improve their attitude about their work or increase their positive feelings about work.

We gave you a number of assessments before the treatment sessions, and then followed the treatment with the same assessments. By comparing the scores on these sets of assessments, we were able to determine whether the treatment was effective in reducing these symptoms.”

Benefits of Research:

“Research indicates that writing therapy is effective in reducing physical health problems and increasing positive feelings. Participants in this study may benefit by a decrease in their self-reported symptoms of post traumatic stress disorder. Decreases in the reported levels of burnout should result following treatment as well. In addition, this study will contribute to the base of information available on treatments of populations with varying degrees of stress related symptoms.”

Common Reactions to this Treatment:

“When writing about traumatic or stressful experiences, it is common to have an increase in unpleasant or unwanted memories and/or thoughts about these experiences. You may also have experienced an increase in negative feelings during the course of the treatment study. Research indicates that these negative feelings are usually short lived. During the course of the study these negative feelings are often replaced by a sense of well-being and a more positive outlook. These results may be experienced in addition to the decrease in symptoms associated with PTSD or burnout.”

“However each individual is different and your experiences may have been somewhat different from those of other people. We would be interested in your experiences in particular. Do you have any comments, suggestions, or questions now that the study is completed?”
DEBRIEFING SCRIPT
(Participant Comments)

Participant Number: ________________________
Debriefer: ________________________
Date: ________________________

Please make detailed notes about the comments, questions, or experiences the participant brings up.

________________________________________________________________________
________________________________________________________________________
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________________________________________________________________________
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We are also offering to send copies of the final project results to participants if they are interested:

"Would you be interested in receiving a copy of the final results of the study when it is completed? This may take a year or more. If you would like to provide us with an address, we will mail those results to you when the project is completed."

Name: ________________________
Address: ________________________
City: ________________________ State: ________________________ Zip: ________________________

"Finally, we would like to thank you for your participation in this study. Your willingness to share your intimate thoughts, feelings, and experiences is greatly appreciated and without you this research would not have been possible. Thank you again for being a part of this study."
Appendix R

Master List for Participant Contact
## PARTICIPANT STATUS LIST

<table>
<thead>
<tr>
<th>Subj #</th>
<th>Name</th>
<th>Phone</th>
<th>Intake</th>
<th>Pretest</th>
<th>TX1</th>
<th>TX2</th>
<th>TX3</th>
<th>TX4</th>
<th>Posttest</th>
<th>Follow-up 1</th>
<th>Follow-up 2</th>
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</table>
Appendix S

Study Overview
# Effects of Writing Therapy for PTSD and Chronic Stress

## STUDY OVERVIEW

<table>
<thead>
<tr>
<th>Recruitment</th>
<th>Intake (30-45 minutes)</th>
<th>Pretest (1 ½ - 2 hours)</th>
<th>Treatments (45 minutes)</th>
<th>1 week Post-test (60-90 minutes)</th>
<th>1 &amp; 2 Month Follow-up (60-90 minutes)</th>
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<tbody>
<tr>
<td>Newspaper advertisements</td>
<td>Informed Consent</td>
<td>Shipley Institute of Living Scale</td>
<td>4 weekly sessions; ½ hour each</td>
<td>CAPS-DX</td>
<td>CAPS-DX</td>
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<tr>
<td>Requests for referrals</td>
<td>Life Events Checklist</td>
<td>CAPS-DX</td>
<td>BDI-II administered at the end of each tx session</td>
<td>BDI-II (provide 4 add’l with SASE)</td>
<td>BDI-II (provide 4 add’l with SASE)</td>
</tr>
<tr>
<td>Public postings</td>
<td>Personality Questionnaire</td>
<td>SUDS Rating wrt present level of discomfort about the traumatic event</td>
<td>SUDS Rating wrt present level of discomfort about the traumatic event</td>
<td>SUDS Rating wrt present level of discomfort about the traumatic event</td>
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<tr>
<td>XU Classrooms</td>
<td>(MBI) Demographic Questionnaire</td>
<td>STAI-S</td>
<td>STAI-S administered at the end of each tx session</td>
<td>STAI-S</td>
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<tr>
<td></td>
<td>Maslach Burnout Inventory</td>
<td>BDI-II Depression Screen</td>
<td>(Participants phoned 24 hours before tx session as reminder)</td>
<td>Maslach Burnout Inventory</td>
<td>Maslach Burnout Inventory</td>
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<td></td>
<td>Provide Mental Health Resource Sheet</td>
<td>Physical Health Questionnaire</td>
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<td></td>
<td>Question about clinic or Dr. office visits</td>
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<td>Question about clinic or Dr. office visits</td>
<td>Question about clinic or Dr. office visits</td>
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<tr>
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<td>Coping Resources Inventory</td>
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<td>Coping Resources Inventory</td>
<td>Final Debriefing</td>
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<td>(Informed of qualification for study)</td>
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</table>
Appendix T

WMU HSIRB Approval Form
Date: 4 June 1999

To: Richard Spates, Principal Investigator
    Jennifer Lewis, Student Investigator for dissertation

From: Sylvia Culp, Chair

Re: HSIRB Project Number 99-04-13

This letter will serve as confirmation that your research project entitled "Effects of Writing Therapy Across PTSD, Subclinical PTSD and Chronic Stress" has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 4 June 2000
Appendix U

Xavier University IRB Approval Form
December 17, 2001

Jennifer E. Lewis
1178 Herschel Avenue
Cincinnati, OH 45208

Dear Ms. Lewis,

Your protocol #0178-4, *Effects of Writing Therapy across PTSD, Subclinical PTSD, and Chronic Stress*, was received on November 30, 2001. It was reviewed and approved by the Xavier University IRB on December 17, 2001. The brochures and ads were also approved.

Please fill out and return the enclosed Status/Final Report form at the conclusion of your study or one-year from this date. This form will be available on XU’s web site shortly.

If there are adverse events or modifications, please notify the IRB immediately.

We wish you every success with your research.

Sincerely,

Robert C. Baumiller, S.J.
IRB Chair and Administrator

Enc: Final Status Report

CC: Karl Stukenberg, Ph.D.
Appendix V

University of Cincinnati IRB Approval Form
UNIVERSITY OF CINCINNATI MEDICAL CENTER
INSTITUTIONAL REVIEW BOARD
NOTIFICATION FORM

PRINCIPAL INVESTIGATOR: Jennifer Lewis, MA
SUB-INVESTIGATOR(S): Megan Murray, Ph.D.

PROTOCOL: 02-2-6-7--"Effects of Writing Therapy Across PTSD and Chronic Stress"

XXX *APPROVED - Initial _x_ Full Board _x_ Expedited _
(Approval includes informed consent document and advertising, if applicable)

Sponsor:
DATE: May 15, 2002

The approval for this research activity expires on: May 15, 2003

1. If the study involves a drug, you must complete the Pharmacy Committee Drug Information Sheet (available at the In-Patient Pharmacy, University Hospital).

2. You are required to immediately report to the Institutional Review Board: 1) any serious adverse event, or 2) any non-serious event which is both related to the study and is unexpected.

3. The period of approval of this research project is stated above. A progress report form must be filed with the Institutional Review Board on at least an annual basis, and sometimes more frequently at the discretion of the Board. If the progress report is not returned by the specified date, your department head will be notified.

4. There may be no change or addition to the project, or changes of the investigators involved, without prior approval of the IRB.

5. If this protocol has not been initiated within two years of this date, you will be required to resubmit the study for reconsideration by the Institutional Review Board. However, this regulation is not intended to negate the requirement that a progress report be filed with the IRB office on at least an annual basis.

6. Notification of approval by the Institutional Review Board does not necessarily indicate approval by other committees of the Medical Center with the exception of Radiation Safety.

7. You are required to modify this study, subject to IRB approval, if subsequent information regarding any drug, device or procedure utilized in the study is received from the manufacturer or any other reliable source, that could reasonably increase or alter potential harm to subjects. The informed consent statement must be modified to include this new information or an addendum must be prepared as a means to assure subject notification. In cases where the subject has completed the study, the modification or addendum is only necessary if the additional information received could impact the subjects in the future.

DHHS Assurance No. M1138
Identification No. 01

*The attached consent has been approved by the IRB. Please copy this ICS document and use for all subjects entered into the study.
Appendix W

Cincinnati VAMC Research and Development Approval Form
Date: May 23, 2002

From: Chairman, R&D Committee

Subj: Research Protocol

To: Jennifer E. Lewis, MA

1. Your protocol entitled "Effects of Writing Therapy Across PTSD and Chronic Stress" was reviewed by the Research and Development Committee on March 12, 2002 and a motion was made and seconded to make the protocol acceptable with receipt of training certification and receipt of IRB letter of approval and stamp dated informed consent form. You have fulfilled the requested requirement; you now have full committee approval.

2. If your protocol involves human subjects, VA policy requires that signed information consent statements be made a permanent part of their medical records. Furthermore, it is required that if investigational drugs are used these drugs and a list of the principal investigator's authorized designees prescribing the drug be placed in the Pharmacy prior to the initiation of your study (this requires the completion of form VA 10-9012).

3. In the case of human subjects, it is your responsibility to provide this office with a copy of the approval from the University of Cincinnati Committee on Human Research (if you have already done so, please disregard). Upon receipt of this approval, you may initiate your proposal.

4. The approval of this protocol is contingent on the related activity or activities not adversely affecting, displacing, or otherwise occupying priorities that would exclude the developing of VA-funded and approved activities.

5. Suggestions/comments from the reviewers may be attached.

6. If we may be of any further assistance to you, please feel free to call the Research Office at 475-6328.

Kenneth Wagner, Ph.D.


