

WOUNDED WARRIORS: PREDICTORS OF TREATMENT OUTCOME FOR MALE
VETERANS WITH COMBAT-RELATED POSTTRAUMATIC STRESS DISORDER

by

CRYSTAL RAEQUEL MITCHELL ANDERSON

(Under the Direction of Cheryl D. Dozier)

ABSTRACT

This study examined predictors of treatment outcome for combat veterans in a group-based exposure therapy. The study compared Black and White injured combat veterans with PTSD and non-injured combat veterans with PTSD. A secondary data analysis was performed on a group of 102 veterans participating in a group-based exposure therapy. The majority of veterans were from the Vietnam War Era (1961-1975). The sample consisted of veterans age 33 and older. The study revealed no significant differences in treatment outcome based on injury or race. The study concludes by suggesting implications for social work practice, research, and policy.

INDEX WORDS: Posttraumatic Stress Disorder, Combat-related PTSD, veteran, Department of Veteran's Affairs, combat-related injury, exposure therapy, race, mental health disparities, social work

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DEDICATION

This dissertation is lovingly dedicated first to my mother, Jean E. Hart, who prepared me for this long journey. My mother's support has been unwavering. Her belief in my abilities has been steadfast. She continued to pray for me, which sustained me through this process. I also dedicate this work to my loving and supportive husband, Charles P. Anderson. He has been my backbone throughout this writing process. He supported me through every shout, laughter, tear, and grumble. I love you both beyond words can express. To my cousins (sons), Amir and Armon Franklin whom I could not love more had I been their biological mother. And last, but definitely not least, I dedicate this to my darling cousin, Kiera Lashawn Mitchell. There is no limit to what you can achieve.

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"The sisters and brothers that you meet give you the materials which your character uses to build itself. It is said that some people are born great, others achieve it, some have it thrust upon them. In truth, the ways in which your character is built have to do with all three of those. Those around you, those you choose, and those who choose you."

-- *Maya Angelou*

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GLOSSARY OF ABBREVIATED TERMS

AHRQ – Agency for Healthcare Research and Quality

APA – American Psychiatric Association

CAPS – Clinician Administered PTSD Scale

CBT – Cognitive Behavioral Therapy

CGI-I – Clinical Global Impression-Improvement

DES – Dissociative Experience Scale

DHHS – Department of Health and Human Services

DSM – Diagnostic and Statistical Manual of Mental Disorders

DSM- IV CF – Diagnostic and Statistical Manual of Mental Disorders, Cultural Formulation

ESP – Evidence Synthesis Pilot Project

GBET – Group-Based Exposure Therapy

NHDR – National Health Disparities Report

NHQR – National Healthcare Quality Report

NVVRs – National Vietnam Veteran’s Readjustment Survey

PCL-M – PTSD Checklist Military Version

PCT- Posttraumatic Clinical Team

PSF – PTSD Status Form

PTSD – Posttraumatic Stress Disorder

QUERI – Quality Enhancement Research Initiative

SA - Substance Abuse

SES – Socioeconomic Status

SPSS – Statistical Package for Social Sciences, Software by SPSS, Inc.

SSRI – Selective Serotonin Reuptake Inhibitors

SUD Substance Use Disorder

VA – Veterans Administration

VA HSR& D – Veterans Affairs Human Subjects and Research Development

CHAPTER 1

Introduction

Chapter 1 provides an overview of a quantitative exploratory study. The study explored the effectiveness of prolonged exposure therapy, a trauma-focused therapy that involves confrontation of feared stimuli, in reducing symptoms of Posttraumatic Stress Disorder (PTSD) in United States (U.S.) combat veterans. Symptoms of PTSD can include, but are not limited to, flashbacks of the originating trauma, social withdrawal and avoidance, emotional numbing, and hyperarousal (American Psychiatric Association, 1994). Kulka and colleagues (1990) established that Vietnam veterans injured in combat had PTSD rates two to three times higher than among those who returned uninjured. Additionally, Magruder et al. (2004) found that within the last 15 years, there has been a 20% increase in the number of veterans seeking treatment and diagnosed with combat-related PTSD. The data gathered offers new information to mental health providers within the Department of Veterans Affairs (VA) (e.g., social workers, psychiatrists, psychologists, etc.) to support the development of programs for reducing symptoms of PTSD and improving quality of life for U.S. combat veterans. Upon their return home, veterans who experienced war may experience difficulties readjusting to civilian life. The importance of treating PTSD is crucial as a public health concern for the health and security of U.S. combat veterans, which also impacts their families, and the community at large.

Chapter 1 provides a brief introduction of posttraumatic stress disorder, the problem statement, significance of the study, and the research questions explored within this study. In addition, the theoretical framework and definition of terms is included to establish context for the

study. The results of the current study could possibly augment the professional body of literature addressing treatments for PTSD in U.S. combat veterans, with implications for social work practice.

Background

In the past decade, an enormous amount of literature has been amassed on PTSD, an anxiety disorder that may result from exposure to various types of traumatic events such as assault, rape, disaster, combat, and terrorism (Schnurr et al., 2007). PTSD is characterized by a myriad of symptoms including intrusive memories and avoiding reminders of the traumatic event, emotional numbing, and hyperarousal (American Psychiatric Association, 2000). The disorder is associated with severe physical health functioning (Deykin et al., 2001), loss of job productivity (Kessler & Frank, 1997), intimate partner violence (Orcutt, King, & King, 2003), and a high comorbidity with other psychiatric disorders (e.g., substance abuse or dependence, depression, other anxiety disorders, and chronic pain) (Brady, Killeen, Brewerton, & Lucerini, 2000; Breslau, 2001; Shipherd et al., 2007). As a result of this chronicity, individuals experiencing symptoms consistent with PTSD utilize a greater amount of healthcare resources than those without symptoms of PTSD (Deykin et al., 2001; Kramer, Booth, Han, & Williams, 2003; Stein, McQuaid, Pedrelli, Lenox, & McCahill, 2000 as cited in Bolton et al., 2004). Estimates of the lifetime prevalence of PTSD in the general U.S. population range from 5-6% for men and 10-12% for women (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Shipherd et al., 2007). For men and woman who have served in the U.S. military, the prevalence of PTSD is over 2% more than the general population. Further, because of greater exposure to combat situations, men and women serving in the Marines and Army are nearly four times more likely to

report PTSD than those enlisted in the Navy or Air Force (Hoge, Auchterlonie, & Milliken, 2006).

The National Vietnam Veteran's Readjustment Study (NVVRS) found that a substantial number of Vietnam veterans suffered from a variety of psychological problems while experiencing a wide-range of life adjustment problems (Price, 2006). According to Price (2006), nearly 25% of Vietnam combat veterans experience persistent PTSD symptoms. Grinage (2003) also reported that although the lifetime prevalence of PTSD in Vietnam War veterans is approximately 30%, about 50% of these veterans had clinically significant symptoms of PTSD. Dohrenwend et al. (2006) contend that thousands of Vietnam veterans have suffered for over 30 yrs. They report that veterans have suffered from nightmares and images of dead or injured comrades while attempting to escape the triggers of these flashbacks. In medical settings, estimates of PTSD range from 12% to 20%, with the higher percentage among VA ambulatory care patients, for whom PTSD is one of the most prevalent mental health diagnoses (Hankin, Spiro, Miller, & Kazis, 1999). The rates of PTSD are higher among veterans with higher incidences of trauma exposure (e.g., combat veterans) (Shipherd et al., 2007), and nearly 15% of veterans meet criteria for PTSD several decades after combat exposure (Kulka, 1988, 1990 as cited in Shipherd et al., 2007). These prevalence rates suggest that effective clinical treatments to reduce PTSD among military veterans must be identified and addressed.

Problem Statement

Combat veterans diagnosed with PTSD may display symptoms that include, but are not limited to, flashbacks of the originating trauma, social withdrawal and avoidance, emotional numbing, and hyperarousal (American Psychiatric Association DSM-IV, 1994). Rosenheck and Stolar (2000) suggested that treatments for PTSD are most effective when guided by evidence-

based practices. Evidence from recent studies bolsters support for pharmacological interventions as well as exposure-based psychotherapies (Benedek, Friedman, Zatzick, & Ursano, 2009). Other studies of PTSD treatment have focused on various types of trauma including rape, sexual assault, interpersonal violence, motor vehicle accidents, terrorism, natural disasters, secondary trauma, childhood trauma, and non-injured combat-related trauma in veterans (Davidson et al., 2005; Friedman et al., 2007; Marshall et al., 2007; Stein, Ipser, & Seedat, 2006; Stein, van der Kolk, Austin, Fayyad, & Clary, 2006).

Davidson et al. (2005), Marshall et al. (2007), and Stein et al. (2006) demonstrated examples of recent pharmacological interventions for PTSD. Davidson et al. compared the relapse rates of 57 (non-combat) patients who were blindly randomized to continue receiving fluoxetine (mean dosage= 42.1 mg/day) or a placebo after initially responding to six months of open-label fluoxetine. Relapse rates were 22% for fluoxetine compared with 50% for placebo ($p = .02$), and time to relapse on fluoxetine was longer than on placebo ($p = .02$). Equally important, Marshall et al. (2007) reported the treatment efficacy of paroxetine for symptoms and related characteristics of chronic PTSD. After one week of insignificant improvement on the placebo, fifty-two mostly minority adult patients were randomized to receive the continued placebo or flexibly dosed paroxetine (maximum 60 mg/day by week seven). After 10 weeks, patients treated with paroxetine had a significantly greater response to treatment, as rated by the Clinical Global Impression-Improvement (CGI-I scale). They were also observed to have a significantly greater reduction in total scores on the Clinician-Administered PTSD Scale (CAPS) and the Dissociative Experience Scale (DES). Self-reported interpersonal problems were also significantly decreased. Finally, Stein et al. (2006) reviewed 35 short-term randomized

controlled trials involving 4,597 participants. In 17 of the 35 trials, compared to the placebo groups, symptom severity was significantly reduced in the medication groups.

In the same way that pharmacological studies have shown promise for PTSD treatment, efficacy was established in recent studies of exposure-based therapies (Chard, 2005; Monson et al., 2006; and Schnurr et al., 2007). The first example was demonstrated in a controlled study by Chard (2005) who examined the effectiveness of cognitive processing therapy in 71 adult sexual abuse survivors with PTSD. The control was a waitlisted group of eligible participants.

Participants were assessed pre and post treatment, three months after treatment, and one year after treatment using the CAPS and a variety of other clinician-administered rating scales. Their analysis demonstrated that cognitive processing therapy was superior to the waitlist in reducing PTSD symptoms and that these reductions were maintained for at least a year.

Another example was demonstrated in a study by Monson et al. (2006), who reported the results of a wait-listed controlled study of cognitive processing therapy in 60 combat veterans. At the completion of the study, 40% of those in the intention-to-treat group receiving cognitive processing therapy no longer met criteria for a PTSD diagnosis, and 50% had a reliable decrease in their PTSD symptoms. Finally, Schnurr et al. (2007) studied prolonged exposure therapy in a randomized controlled trial of 277 female veterans and nine active duty personnel across 12 sites (nine Veterans Affairs hospitals, two Veterans Affairs counseling centers, and one military hospital) specializing in medical treatment for military veterans. The veterans were randomly assigned to participate in 10 weekly sessions of either prolonged exposure therapy (N= 141) which focused on past trauma or present-centered therapy (N= 143) which focused on present stressors. Patients were assessed pre and post treatment, and then three and six months after treatment. Schnurr et al. (2007) found that upon completion of treatment, 41% of participants in

the prolonged exposure therapy group no longer met the criteria for PTSD, compared with 27.8% of participants in present-centered therapy. The prolonged exposure therapy group was also more likely to achieve full remission (15.2% compared with 6.9%) at posttreatment. The results were maintained at three and six-month follow-up.

The previous highlighted studies suggest that future research should focus on standardized definitions of treatment outcome and remission, efficacy of exposure therapy within groups vs. individual and multi-ethnic studies to demonstrate efficacy across varied populations. This study will add to the literature on group-based efficacy and may demonstrate efficacy across race. Moreover, two recent studies of PTSD treatment found that veterans with combat-related PTSD with physical injury experienced higher levels of anxiety and depressive symptoms than non-injured combat veterans, making studies aimed at testing the effectiveness of treatment for PTSD in this population an important research priority (Grieger et al., 2006; Koren, Norman, Cohen, Berman, & Klein, 2005).

Just as treatment efficacy was determined an important research priority, so too are clinical practice guidelines for PTSD. Clinical practice guidelines for treatment of PTSD recommend Serotonin Reuptake Inhibitors (SSRI) and Cognitive Behavioral Therapy (CBT) as primary treatments (Ursano et al., 2004). Unlike SSRIs which were not developed to treat PTSD, CBT has effectively treated PTSD in veteran and non-veteran populations (Brewin & Holmes, 2003; Foa & Rothbaum, 1998). In CBT, the patient and therapist jointly focus on the correction of distorted thoughts and improvement of affect and behavior. Symptomatic improvements then lead to improved functional ability in the patient (Gaudiano, 2008). CBT has been effective in the treatment of a variety of psychological diagnoses and symptoms like anxiety disorders, chronic pain, and depression. Borkovec and Costello (1993) conducted a study comparing CBT

and relaxation for treatment of anxiety disorders. They found that CBT facilitated and maintained ongoing symptom reduction. Ehlers and Clark (2008) conducted four randomized controlled trials and two dissemination studies that showed CBT as an acceptable and effective form of treatment for PTSD. CBT treatment success is usually a combination of behavioral interventions and cognitive processing or restructuring, in the form of monitoring, identifying, or challenging problematic thoughts (Horrell, 2008).

Rothbaum et al. (2000) divided the general class of cognitive behavioral treatments for PTSD into skills-focused or trauma-focused therapies. Examples of skills focused therapy include assertiveness training, inoculation training, and dialectical behavior therapy. Further examples of trauma-focused therapy include prolonged exposure therapy and cognitive processing therapy. Prolonged exposure therapy, a trauma-focused approach that involves confrontation of feared memories, thoughts, images, places, and situations, has been proven an effective treatment for several anxiety disorders (Hembree et al., 2003). Regardless of the specific form of CBT utilized, overall success can be effected by factors such as social support, marital status, clinical severity, duration of symptoms, socioeconomic status, and ethnic status (Blendon et al., 2007; Hembree et al., 2003; Ikin et al., 2004).

This dissertation study was conducted using secondary data from a larger study, “A Field Test of Group Based Exposure Therapy with 102 Veterans with War-Related Posttraumatic Stress Disorder”, of veterans participating in group-based exposure therapy (Ready et al., 2008). The current study examined prolonged exposure therapy, an effective form of CBT, in U.S. military veterans at the Atlanta VA Medical Center. Veterans with a combat-related injury were compared with non-injured veterans to determine the impact of prolonged exposure therapy on symptoms of PTSD.

Purpose of the Study

The purpose of the study was to explore the effectiveness of prolonged exposure therapy in reducing symptoms of PTSD in Black and White U.S. injured vs. non-injured combat veterans. Kulka and colleagues (1990) established that injured Vietnam veterans had two to three times higher rates of PTSD than those who returned uninjured. Additionally, Magruder et al. (2004) found that within the last 15 years, there has been a 20% increase in the number of veterans seeking treatment and being diagnosed with combat-related PTSD. For the purpose of this study, a combat veteran is an individual who has firsthand experience of the violent and traumatic events of war.

A secondary data analysis was appropriate for this study for several reasons. First, the original data collected included the variables intended for this study (race, injury, and combat-related PTSD). Second, the original data were analyzed for treatment outcome. This study analyzed the data for predictors of treatment outcome through examination of additional research questions. Third, the researcher avoided the intrusiveness of data collection and the possibility of inflicting harm to a vulnerable population (persons with mental illness). Finally, within the social work field, examination of this existing data for the continued substantiation of this intensive treatment protocol provided an important element of service delivery.

In sum, this study explored if prolonged exposure therapy is effective in reducing symptoms of PTSD in injured U.S. combat veterans. Data from the *Field Test of 102 Veterans* (Ready et al., 2008) were analyzed to explore whether combat-related injury and race had an effect on treatment outcome following group-based exposure therapy. This secondary data analysis provided an opportunity to explore several significant outcomes.

Significance of the Study

Data from this study may offer new information to mental health providers (e.g., social workers, psychiatrists, psychologists, etc.) within the Veterans Health Administration (VHA) and community Vet Centers to support the development of strategies for reducing symptoms of PTSD and improving quality of life in U.S. combat veterans. Reducing symptoms of PTSD may improve quality of life (Dohrenwend et al., 2006). Identification of effective therapies may also lead to adoption of evidence-based practices within all mental health specialties of the VA (Ready et al., 2008). This is of particular importance as the VA is mandated to implement the Uniform Services Handbook for Mental Health. The handbook specifies that all mental health service delivery must be evidence-based (Department of Veterans Affairs, 2006).

This study underscores the need for continued research on combat-related injury, mental health disparities, and the effects on PTSD, and thus has the potential to produce four significant outcomes. First, the study may demonstrate that veterans without combat-related injury and PTSD have a greater chance of treatment success with group-based exposure therapy. This finding would enable mental health professionals to prepare appropriate service delivery for wounded veterans anticipated to return home from the Iraq and Afghanistan war. This preparation could include developing intensive therapy models; identifying early intervention strategies for soldiers returning from war; and developing and implementing treatments targeted for injured combat veterans.

Such research is also potentially valuable to VA social workers as it relates to an important VA initiative. In 1998, the VA's Health Services Research & Development Service (HSR&D) initiated the Quality Enhancement Research Initiative (QUERI) (VA QUERI, 1998). The QUERI mission is to enhance the quality and outcomes of VA healthcare by systematically

implementing clinical research findings and evidence-based recommendations into routine clinical practice (VA QUERI, 1998). The QUERI utilizes six processes to facilitate the implementation of research findings and evidence-based clinical practices to achieve better health care outcomes for veterans (VA QUERI, 1998). This study will utilize the steps in the QUERI process as follows: 1) the study identified combat-related PTSD and the effect of injury vs. non-injury as a high-risk and high-volume problem; 2) the study explored whether group-based exposure therapy is a best practice for PTSD within the veteran population; 3) this study defined practice patterns, outcomes throughout several VA healthcare systems, and current variations of best practices. This information will be discussed in the context of the study in Chapter 5; 4) the study results may identify group-based exposure therapy (GBET), a manualized treatment program for PTSD, as an intervention which promotes best practices; 5) the study will document that best practices improve outcome; and 6) the study would document any decrease in PTSD symptoms, which would be associated with decreased impairment in activities of daily living.

Second, the study may help identify predictors of treatment outcome with group-based exposure therapy (GBET). The ability to identify predictors of treatment outcome with this type of therapy has benefits to the National VA Healthcare system. GBET was developed by Atlanta VA clinicians for veterans receiving treatment within the posttraumatic clinical team. GBET has been their primary mode of treatment for the past four years. It would be prudent to identify which veterans would likely benefit from this treatment. At this time, a “one-size fits all approach” has been implemented. Furthermore, social workers must be able to identify, create, and utilize empirically-based, evidence-driven practices to ensure patients have the opportunity to benefit from sound treatment. As more veterans are returning from Iraq and Afghanistan, and

more Vietnam veterans are being diagnosed with PTSD, information regarding the effect of PTSD and treatment efficacy is of the utmost importance (Pyszczynski, Solomon, & Greenberg, 2003). Data from this study will offer new information to VA mental health providers (e.g., social workers, psychiatrists, psychologists, etc.), the Veterans Health Administration (VHA) and community Vet Centers to assist in developing effective treatments for injured and non-injured combat veterans. The identification of predictors of treatment outcome will assist professionals with developing and implementing best practices in their respective settings.

Third, this study may identify race as a possible indicator of treatment outcome. To this end, the National Association of Social Workers (NASW) Code of Ethics (*NASW Code of Ethics*, 1999) implores social workers on cultural competency and diversity, integrity of the profession, and evaluation and research: “Social workers should have a knowledge base of their clients’ cultures and be able to demonstrate competence in the provision of services that are sensitive to clients’ cultures and to the differences among people and cultural groups” (1.05b). Therefore, if race was determined as an indicator of treatment outcome, interventions may need modification for cultural sensitivity and review of treatment mode of delivery.

Finally, the current study draws upon recommendations outlined in the National Health Disparities Report (NHDR) (AHRQ, 2006) and the Evidence Synthesis Pilot Project (ESP) (VA HSR&D, 2007) which both acknowledge the relevance of continually addressing health care disparities in research. These reports recommend that (1) disparities must be tracked to determine the extent that healthcare providers and facilities provide evidence-based treatments, and (2) outcome studies must explore the potential source of the health disparities within the VA system. This study may present valuable information related to health disparities within the VA system. At present, the available literature does not adequately address health disparities within a

specialized VA PTSD program. In addition, this study examines PTSD, combat-related injury, and the effects of race on treatment outcome. This information will generate future research designed to improve equity in VA healthcare.

Research Questions and Hypotheses

This study explored the use of group-based exposure therapy in a convenience sample of U.S. combat veterans diagnosed with PTSD and being treated at the VA Medical Center in Atlanta, Georgia. To accomplish this end, the following research questions guided the study:

1. What effect does combat-related injury have on PTSD symptom severity following group-based exposure therapy?

It was hypothesized that group-based exposure therapy would be less effective in reducing symptoms of PTSD in veterans with combat-related injury than in non-injured combat veterans.

2. Are there racial differences in the effect of group-based exposure therapy among veterans with a combat-related injury?

It was hypothesized that group-based exposure therapy would be more effective in reducing symptoms of PTSD in White veterans with combat-related injury than in Black veterans with combat-related injury.

Definition of Terms

For the purposes of this study, a number of key terms were defined to facilitate appropriate measurement and understanding of important constructs related to this study.

Posttraumatic Stress Disorder (PTSD). PTSD is an anxiety disorder that mirrors symptoms of generalized anxiety disorder and depressive symptoms. It is defined as meeting the DSM-IV, Axis-I diagnostic criteria for documented combat-related PTSD as a primary diagnosis

(American Psychiatric Association, 2000). This definition lends to a more concrete and clinical measure of PTSD than veteran self-report.

Prolonged Exposure Therapy was defined as trauma-focused therapy that involves confrontation of feared memories, thoughts, images, places, and situations (Hembree et al., 2003). Prolonged Exposure Therapy includes individual and group formats. An example of a group format is *Group-based Exposure Therapy (GBET)*, a manualized treatment utilized at the Atlanta VA Medical Center.

Combat-related Injury was defined based on VA criteria to differentiate between an undocumented, self-report of injury. This definition also identifies the type of injury being considered (as other injuries could be considered “minor” and not identified as combat-related). Therefore, Combat-related injury as defined by the *Federal Benefits for Veterans, Dependents and Survivors* handbook (Department of Veterans Affairs, 2009a), is an injury obtained during any one of the following circumstances: training that simulates war (e.g., exercises, field training); hazardous duty (e.g., flight, diving, parachute duty); an instrumentality of war (e.g., combat vehicles, weapons, Agent Orange); and armed conflict (e.g., gunshot wounds, Purple Heart award for military personnel wounded in action) (Department of Veterans Affairs, 2009a, p. 33). For the purposes of this research, the injury must be documented either with the Purple Heart award; medical evacuation from a combat zone; or other documentation of injury (diagnosis of physical injury, report by physician) in the medical records (Department of Veterans Affairs, 2009a, p. 33).

Mental Health Disparities. The term “mental health disparities” has been represented in the research through various disciplines. The definition of mental health disparities varies throughout previous research. It is therefore important to provide the definition utilized in this

study. Mental health disparities refer to differences in health care processes or mental health outcomes between population groups (as defined by race) specifically, whether those differences are avoidable or unjust (Blendon et al., 2007).

Race. It was also important to identify the definition of race for this study. As race has been debated as a social construct vs. a biological construct this study defines race as self-identified by the categories used on the demographic National Center for PTSD Status Form (PSF). Racial categories have also varied across the span of the last 100 years (U.S. Census, 2000). The categories used on the National Center for PTSD Status Form are as follows: White, non-Hispanic; Black, non-Hispanic; Hispanic, White; Hispanic, Black; American Indian/Native Alaskan; Asian; Pacific Islander and; Unknown/Other (National Center for PTSD, 1990).

Summary

The purpose of Chapter 1 was to introduce the reader to the topic of PTSD, its effects and consequences of non-treatment. Key terms were operationally defined within the context of this study. In addition, an argument was made for the identification of evidence-based treatments for this special population. Chapter 1 also provides a synopsis of the importance of identifying effective treatment outcomes for PTSD as a public health concern. Chapter 2 provides an in-depth review of the literature supporting this research. This chapter provides an overview of the history of the conceptualization of PTSD, illustrating the instrumental part society and war played in the conceptualization. Combat-related PTSD and its relationship to combat-related injury, group-based exposure therapy, and racial disparities in mental health were further explored to illustrate the contribution of this study to the social work literature.

Chapter 3 describes the Parent Study from which the secondary data analysis was drawn and provides a description of the methods used for the present study (sample selection, data

collection, measures, and analysis). Chapter 4 summarizes the study results and links study aims and questions to the data, and Chapter 5 includes a discussion on strengths and limitations of the study, demographics of the study, variables under investigation, and the implications for social work practice, research, and policy.

CHAPTER 2

Literature Review

The purpose of this chapter is to review the body of literature that informed the research questions of this study. The study sought to answer the following research questions: 1) What effect does combat-related injury have on PTSD symptom severity following group-based exposure therapy?; 2) Are there racial differences in the effect of group-based exposure therapy among veterans with a combat-related injury?

This chapter provides the literature review on which the study was founded. As such, this chapter is divided into three specific sections: 1) Posttraumatic Stress Disorder (PTSD); 2) Cognitive Behavioral Therapy and 3) Health Disparities. The first section provides a greater understanding of PTSD including history of the diagnosis, causes, predictors, prevalence rates and the relationship to physical bodily injury amongst wounded veterans. The second section focuses on treatments of PTSD which include the arena of Cognitive Behavioral Therapy and more specifically, Exposure Therapy. Finally, the last section of the chapter is devoted to Health Disparities. This section will include general information related to health disparities, followed by a review of disparities within the Department of Veteran Affairs Medical Centers.

The researcher conducted a comprehensive literature review of peer reviewed journal articles, books, dissertations, and reports. Online searches via Galileo at the University of Georgia were conducted. Academic Search Complete; CSA Social Sciences Collection; Ebsco; Elsevier SD Freedom Collection; Medline; Ovid; ProQuest; PsycInfo; and PubMed were the primary databases searched (see Appendix A; Highlighted Studies). Various descriptors and

combinations for descriptors were used including: Posttraumatic Stress Disorder (PTSD), combat-related PTSD, combat-related injury, veteran, substance abuse, depression, Cognitive Behavioral Therapy, Exposure Therapy, health disparities, Blacks, and treatment outcome.

Posttraumatic Stress Disorder

Posttraumatic Stress Disorder (PTSD) now exists as a formalized and clearly defined diagnosis. This section provides an overview of the evolution of scholarly understanding of PTSD. A brief review of the historical, political, and social impact on the conceptualization of PTSD is included.

Historical Overview of PTSD

This study focused on combat-related PTSD. As such, the following timeline of war periods (Exhibit 1) provides a historical background during the conceptualization of PTSD.

Exhibit 1. Timeline of War Periods

Under the United States Law, VA recognizes these war periods (Department of Veteran's Affairs, 2009a):

Mexican Border Period: May 9, 1916 through April 5, 1917, for veterans who served in Mexico, on its borders or in adjacent waters.

World War I: April 6, 1917 through November 11, 1918; veterans serving in Russia, April 6, 1917 through April 1, 1920; extended through July 1, 1921 for veterans who had at least one day of service between April 6, 1917- November 11, 1918.

World War II: December 7, 1941 through December 31, 1946.

Korean War: June 27, 1950 through January 31, 1955.

Vietnam War: Aug 5, 1964 (February 28, 1961 for veterans who served “in country” before Aug. 5, 1964) through May 7, 1975.

Gulf War: August 2, 1990 through a date to be set by law or Presidential Proclamation.

The official diagnosis of posttraumatic stress disorder was a significant acknowledgement that traumatic events could produce clinical disorders within individuals otherwise undiagnosed. The formal declaration of the long-lasting and severe responses to trauma validated the experiences of affected individuals (Lasiuk & Hegadoren, 2006). To appreciate the degree to which the conceptualization of PTSD has progressed, a chronology of the history of PTSD is summarized in Exhibit 2.

Exhibit 2. *History of PTSD Timeline*

1861 – Dr. Waller Lewis (physician to Her Majesty’s Post Office) reported a syndrome (called “Railway Spine or Postconcussion Syndrome”) he observed among traveling Post Office employees involved in railway crashes.

1870 – Arthur Meyers coined “a soldier’s heart”- a disorder often found in combat soldiers that included extreme fatigue, dyspnea, palpitations, sweating, and tremors.

1871 – Da Costa – Army surgeon in the American Civil War that elaborated on Meyers work. Called “irritable heart”, “effort syndrome”, and “DaCosta’s syndrome”, this disorder was presumed to be a strictly biological response to the stress of battle.

1875 – Physician’s attribute psychological result of Railway Spine to organic causes.

- 1875 – Page and Oppenheim believed problems were of a psychological origin.
- 1887 – Charcot studied “hysteria” among women patients- concluded that many of the somatic symptoms were psychological in origin since they could be relieved through hypnosis.
- 1887 – Janet (student of Charcot) hypothesizes psychological analyses: psychologically traumatized individuals are incapable of integrating memories of painful events and the intense emotions associated with them into narrative memory (distressing memory and emotions remain dissociated from consciousness).
- 1887 – Freud and Bruer research conclusions about hysteria: many symptoms ameliorated when traumatic memories and emotions were integrated and put into words. Freud and Bruer called this “abreaction” or “catharsis”, later settled on term “psychoanalysis”.
- 1889- Oppenheim renamed the syndrome “Traumatic Neurosis”; first time the surgical term “trauma” known to be used in psychiatry.
- 1896 – Freud published “The Aetiology of Hysteria”- hypothesized that one or more occurrences of premature sexual experiences occur- he later denounced this hypothesis.
- 1915- World War I- “shell shock” introduced by military psychiatrist, Charles Samuel Meyers. Meyers recognizes symptoms in soldiers not directly engaged in combat- distinguished this as “shell concussion”.
- 1918- End of World War I- War Neurosis and Hysteria grouped together under “Psychic Trauma”.
- 1941- Kardiner- American psychiatrist who coined “war neurosis”- amnesia from the

traumatic event while behaving as if they are still in the midst of it.

1944 – Spiegel, American psychiatrist, evaluated the situation of troops in Tunisia- concluded that the primary factor mediating a soldier's ability to cope with trauma of combat was the support of the combat group.

1947- Kardiner and Speigel argued that the strongest protection against the terror of combat was the degree of relatedness among the soldier, his immediate fighting unit, and their leader.

1952- DSM-I Diagnosis of *Gross Stress Reaction* – In response to survivors of World War I- for those experiencing severe physical demands or extreme stress such as combat or in a civilian catastrophe.

1962- Buchenwald Syndrome documented in concentration camp survivors.

1968- APA omits Gross Stress Reaction and introduces Transient Situational Disturbance in the DSM-II.

1970's- Vietnam veterans banded together to lobby the federal government for compensation.

1974- Burgess and Holmstrom introduce *Rape Trauma Syndrome*.

1975- Horowitz and Solomon studied veterans who served in Southeast Asia- resulted in their introduction of *Delayed Stress Syndrome*.

1980- DSM-III Task of the original working group was to define a set of criteria for PTSD. Classified as Anxiety Disorder.

1987- DSM-III R- Revisions added.

1992- ICD 10 establishes different criteria for posttraumatic reaction than DSM-III-R.

1994- DSM-IV established. Included *Acute Stress Disorder* (ASD) -new diagnostic

category

1995- Large comorbidity study of gender differences in types of trauma by Kessler et al.

2000- DESNOS- Disorder of Extreme Stress Not Otherwise Specified established in
DSM-IV- TR.

Some of the earliest clinical references to the effects of psychological trauma date back to nineteenth century Britain (Lasiuk & Hegadoren, 2006). During that time, railway was a primary mode of travel. Train travel was both physically and psychologically challenging due to shaking railway cars and passengers' knowledge of high incidences of railroad crashes. As a result of these crashes, legal and medical concerns began to surface about the health of railway passengers and employees. Judges and physicians became perplexed when attempting to establish valid complaints. Injured railway passengers and employees reported severe disabilities without physical signs of injury. Although lacking physical proof, physicians dubbed the condition "railway spine" and attributed it to organic causes. However, noted psychiatrists, Page and Oppenheim, believed "railway spine" was of psychological origin (Van der Kolk, 1996).

Debates on railway spine and its origins brought out some interesting concepts. In the late nineteenth century, hysteria became a major focus (Herman, 1997; Van der Kolk et al., 1996) as a condition of various mental and physical illnesses. At the time, hysteria was a poorly defined condition attributed to women. Physicians began speculating that the symptoms of railway spine were similar to the symptoms of hysteria. Some of the symptoms of hysteria included nervousness, insomnia, agitation, fluid retention, and shortness of breath (Marlowe, 2000). Physicians, at that time, recognized that many of the symptoms of railway spine were similar to those of hysteria. It was also common for many unknown ailments to be diagnosed as hysteria in

women (Marlowe, 2000).

Other investigative efforts were focused on the psychological effects of war. In 1870, another term of interest was introduced by Arthur Meyers. A “soldier’s heart” described a condition that included sweating, fatigue, palpitations, tremors, and occasional blackouts seen in combat soldiers. Meyer’s work was elaborated by DaCosta (1871), an American Civil War army surgeon. DaCosta named the condition “irritable heart syndrome” with the presumption that the condition was a biological response to the stress of the combat (Birmes, Hatton, Brunet, & Schmitt, 2003; Moreau & Zisook, 2002).

In 1887, Charcot, a neurologist, studied the symptoms of hysteria among his female patients. He noted that many of the symptoms were relieved through hypnosis (Herman, 1997; Van der Kolk et al., 1996). Janet, one of Charcot’s students, also observed that the same patients seemed to experience altered states of consciousness when reminded of the trauma. This led them to suggest a connection between hysteria and dissociation. At the same time, Sigmund Freud and his colleague, Joseph Bruer, reached similar conclusions. They determined that many of the symptoms of hysteria could be improved when the traumatic memory and the associated emotions were discussed. Freud later used the term “psychoanalysis” to describe this process (Herman, 1997).

As the years progressed, military psychiatrist, Charles Samuel Meyers (1915) coined the term “shell shock” to describe the effects of direct combat- weeping and crying uncontrollably, being catatonic, and loss of memory, and inability to feel. Not surprisingly, Meyers also identified the same symptoms in soldiers not directly engaged in combat, which he called “shell concussion”. Meyers utilized his term “shell shock” to illustrate the effects of trench warfare. Trench warfare was a form of warfare that combatants had fortified positions and armed dugouts,

opposing each other along a front (Lasiuk & Hegadoren, 2006). This concept of “shell shock” led to further exploration of the effects of war.

Adam Kardiner (1941), a psychiatrist who studied with Freud explored psychoanalytic theory to explain his understanding of “war neurosis”. Dr. Kardiner’s work provided the basis for the DSM-III formulation of PTSD. Kardiner found that soldiers suffering from war neurosis often reacted as though still at war, although their memory of the traumatic event was depleted (Lasiuk & Hegadoren, 2006). This finding was significant as it identified that removal of the event did not stop suffering. This suffering caused many psychiatric casualties of the war. The psychiatric causality was a loss of the soldier’s ability to perform in battle due to unstable mental health (Lasiuk & Hegadoren, 2006).

As a result of the economic costs of psychiatric casualties during World War I, the U.S. Military implemented psychiatric screenings to screen out service personnel psychologically unfit for battle (Marlowe, 2000). However, the military soon realized that a satisfactory screening alone could not guarantee the absence of development of psychological symptoms. This provided recognition that the traumatic event could alter psychological and physiological behavior, despite a person’s biology or personal inadequacies (Lasiuk & Hegadoren, 2006).

As these new ideas about psychological trauma were developing, Herbert Spiegel, psychiatrist, evaluated troops (1944) in Tunisia. He found a soldier’s ability to cope with trauma was directly related to the support of his combat group. Spiegel (1944) found that soldier’s with minimal or absent group affiliation had an increased risk for psychological damage from combat. He noted greater risk where lack of trust and/or communication failed to exist between the combat group and its immediate leadership (Marlowe, 2000). Kardiner and Spiegel later argued that a supportive relationship between the soldier, their immediate fighting unit, and their

leader was the best protection against the trauma of combat. As a result, psychiatrists were delegated to provide services situated near the fronts of battle (mobile army hospitals).

Psychiatrist provided brief treatments with the expectation that soldiers would return to their units upon resolution of the immediate problem (Marlowe, 2000). The acknowledgement of the influence of “person in environment” and the effects of interpersonal relationships in mental illness witnessed a paradigm shift in psychiatric doctrine. This led to clinicians and researchers studying the experiences of Holocaust survivors (Krystal, 1968; Nathan, Etinger, & Winnik, 1963), survivors of rape (Burgess & Holmstrom, 1974), battered children (Kempe & Kempe, 1978), and Vietnam veterans (Figley, 1978).

In the 1970’s Vietnam veterans lobbied the federal government for compensation for the trauma endured in combat. This caused a resurgence of mental health professionals studying the effects of exposure to traumatic events. The third revision of the DSM (American Psychiatric Association, 1980) was developed to include civilian and military trauma under the PTSD diagnosis. Since the development of the DSM-III (American Psychiatric Association, 1980) posttraumatic stress disorder has undergone a series of refinements (American Psychiatric Association, 1987, 1994, 2000), with the last substantial revision appearing in the DSM-IV (American Psychiatric Association, 1994). The concept that psychological trauma could produce apparent physical disabilities became generally recognized. This history denotes that PTSD was initially conceptualized as neurologically based, later psychological causation was identified and finally it was described in terms of an anxiety disorder. The literature indicates that consideration was given to the effects of trauma first being neurologically based, then psychological causation, to a conversion disorder, and finally described in terms of an anxiety disorder.

In summary, PTSD, its definition, features, and criteria, has been through substantive

changes. For social workers to effectively treat PTSD, a basic understanding of the concept is needed. Due to PTSD being once misunderstood, it is safe to assume that it was also misdiagnosed. Social workers must be mindful of the history of PTSD which illustrates the rationale for the current diagnostic criteria.

PTSD DSM-IV-TR Diagnostic Criteria

The inclusion of PTSD in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III), (American Psychiatric Association, 1980) noted the formal recognition of a syndrome linked to traumatic events, without predisposition for another disorder. The criteria for the diagnosis specify factors concerning the victim's perception of the trauma as well as the duration and impact of associated symptoms. These symptoms are grouped into three clusters: re-experiencing the event (e.g., intrusive thoughts), avoidance and numbing (e.g., restricted affect), and hyperarousal (e.g., marked sleep disturbance and hypervigilance) (Zimering, Caddell, Fairbank, & Keane, 1993).

Criteria for this diagnosis is satisfied when the person has the following symptoms or experiences: exposure to an actual or perceived threat, feelings of intense fear or helplessness, or at least one re-experiencing symptom, at least three avoidance and numbing symptoms, and at least two-hyperarousal symptoms. Symptoms must be experienced for more than one month, significantly disrupting normal daily activities (social, occupational, or other functioning) (Grinage, 2003). Moreover, symptoms lasting more than three months indicate an acute condition. The criteria also accounts for delayed onset, when the person begins experiencing symptoms six months or more following the traumatic event (Grinage, 2003). In addition, the diagnostic criteria for PTSD were initially validated with Vietnam veterans (Zimering, Caddell, Fairbank, & Keane, 1993).

Combat-Related PTSD and Physical Injury

McCann and Pearlman (1990) defined traumatic events from the perspective of the individual who experiences it. These are events that occur outside of the individual's normal circumstances that s/he does not feel capable of handling and therefore causes an emotional and psychological disruption in their ability to function. After experiencing a traumatic event, the traumatized person with PTSD experiences intrusive memories of the event, hyperarousal, and emotional numbing, while trying to avoid reminders of the event (American Psychiatric Association, 2000).

The literature provides many predictors that contribute to the inability of an individual to recover from the trauma that leads to the development of chronic PTSD. The most powerful predictors are: experiencing a previous trauma (Ellis, Atkeson, & Calhoun, 1981; Resick, 1993; as cited in Hembree et al., 2004); the degree of the trauma in terms of injury or fatality (Gireli, Resick, Marhoefer-Dvorak & Hutter, 1986; Kilpatrick et al., 1989; Resick, 1986 as cited in Hembree et al., 2004); and a prior experience of sexual trauma (Foa, Riggs, Massie, & Yarczower, 1995; Kilpatrick et al., 1989; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992).

Throughout the past two decades, the relationship between psychological and physical injuries has received more attention. One example is the recognition of the emotional and mental consequences of physical injuries that result from a traumatic event (O'Donnell, Creamer, Bryant, Schnyder, & Shalev, 2003). The traditional perspective posits that physical injury is a protective factor against the development of posttraumatic stress disorder (Ulman & Brothers, 1987). This position is based on the belief that the physical injury is a distraction of sorts and therefore decreases the likelihood of emotional and psychological discord about the traumatic event (Koren et al., 2005). Another factor is that physical injury will often remove the individual

from the stressful situation and therefore the source of possibly psychological distress. This factor is supported by Merbaum and Hefez's 1976 study which found that soldiers with bodily injuries exhibited minimal, if any, psychological disturbances.

Despite this traditional understanding about the relationship between PTSD and physical injury, a number of studies with injured trauma survivors are posing a challenge to this school of thought. Research involving wounded Vietnam veterans found that these soldiers had higher rates (two to three times) of PTSD than uninjured soldiers (Kulka et al., 1990; Pittman, Altman, & Macklin, 1989). Moderate to high rates of PTSD have also been found among survivors of other types of traumatic events that have left the victims with physical injuries (e.g., automobile accidents) (Ursano et al., 1999; Koren, Arnon, & Klein, 1999; Blanchard et al., 1996), burn injuries (Perry, Difede, Musgni, Frances, & Jacobsberg, 1992), criminal assault (Kilpatrick et al., 1989), and terrorism (Shalev, 1992). The prevalence rate of PTSD in the participants in these studies varied from 11% to 40% (Blanchard et al., 1996; Mayou, Bryant, & Duthie, 1993; Perry et al., 1992). Research involving survivors of mild brain injuries has show similar rates of PTSD (Bryant & Harvey 1998). The association between of PTSD and severity of injury has been found to be positive in some studies (Koren et al., 2005; Michaels et al., 1999), but not in others (Pittman et al., 1989; Mellman, Bustamante, Fins, & Esposito, 2001).

In more recent research, Koren et al. (2005) studied the effect of physical injury on PTSD, depression and anxiety symptoms. Their findings suggest that combat-related PTSD with injury has been found more difficult to treat. Struggling with PTSD and having a physical injury compounds feelings of fear and anxiety. Combat-injured soldiers with PTSD might experience a fear of dying due to injury. The fear of death also exacerbates PTSD symptoms (Koren et al., 2005). Specifically, they found that injured soldiers had significantly higher correlations between

PTSD and anxiety symptoms ($r = .65$, $df = 58$, $p < .0001$) and depression ($r = .75$, $df = 58$, $p < .0001$) than the noninjured comparison group ($r = -.28$ and $r = .06$, respectively). Additional findings showed that higher levels of anxiety and depressive symptoms were also related to physical injury. Correlations between these psychological disorders was significantly related to presence or absence of PTSD. Koren et al.'s findings posit that PTSD and psychiatric comorbidity are interrelated in trauma survivors and that PTSD lessens this correlation after a traumatic injury.

Koren et al. (2005) endeavored to determine how physical injury contributes to the development of PTSD. Consistent with most of the recent literature (Kulka et al., 1990; Michaels et al., 1999), Koren et al.'s findings support the view that bodily injury is a risk factor rather than a protective factor for PTSD. Some data also suggest that the likelihood of developing PTSD after a traumatic injury is eight times higher than when no trauma has occurred. Despite the significance of this ratio, the figure is believed to be an underestimate (Koren et al., 2005).

Peritraumatic dissociation, the occurrence of dissociative symptoms during or shortly after exposure to a traumatic event, may be a risk factor between physical injury and PTSD (Shalev, Peri, Canetti, & Schreiber 1996). In one study, injured participants (both with and without PTSD) reported lower levels of peritraumatic dissociation than their noninjured counterparts. When researchers controlled for peritraumatic dissociation, the differences between the injured and noninjured groups significantly decreased on all PTSD and other clinical measures. Thus, injured persons might be at higher risk for dissociation. Conversely, persons who are more likely to experience stress related dissociation might be more injury prone (Shalev et al., 1996).

Grieger and colleagues (2006) were among the first to report rates of PTSD and depression among soldiers who were wounded or injured during combat duty in Iraq or Afghanistan. Their study examined these rates and risk factors at three data points after soldiers arrived at a U.S.

tertiary hospital (1 month, 4 months, and 7 months). At the first data point, a positive screening result of 7% was found to be similar to baseline rates in nonexposed soldiers. At 4 and 7 months however, the rates of PTSD (12%) and depression (9%) were similar to those found in returning combat soldiers who had more minor injuries (Hoge et al., 2004). Consequently, while there were small increases at the second two data points, the majority of soldiers with PTSD or depression at 7 months did not meet the criteria for either condition 1 month following their injuries (Grieger et al., 2006).

The physical wounds that soldiers suffer during combat cause both physical and psychological distress. The physical wounds tend to follow other combat-related traumatic experiences (e.g., being in the war zone and fighting beside friends and comrades who are wounded or killed). The various factors associated with the physical and psychological distress that comes with physical injuries result in an intricate process from injury to recovery (Grieger, 2006).

As seen in Grieger's (2006) findings, there were lower initial rates of PTSD and depression. Though more research needs to be done in this area, some of the factors that may be related to these lower initial rates are the social and medical support that is received (including medications and the focus on recovery). Grieger (2006) found a later onset of symptoms in a substantial number of soldiers. Factors that may be related to these findings are soldier's ongoing physical problems, concern over health care, anticipation of returning home and starting/finding work, as well as pending disability determinations (Frueh et al., 2003).

In previous wars, soldiers who have experienced injury and those who have been exposed to more combat typically have higher rates of PTSD (Kang, Natelson, Mahen, Lee, & Murphy, 2003; Kulka et al., 1990; Ikin et al., 2004). For example, a study involving Israeli soldiers found

that 16.7% of those injured showed signs of PTSD 15 months after their injuries as compared to 2.5% of soldiers with no injuries and similar combat experiences (Koren et al., 2005). Shalev and colleagues (1992) found additional factors associated with the increased risk for PTSD with bodily injury. First, when experiencing bodily injury, the individual is likely to feel more of a threat to his/her life during the traumatic experience.

The extent of the danger that the individual feels may better predict the development of PTSD than the severity of the actual traumatic event. Their findings further intimate that the individual's increased feelings of danger is not necessarily related to the extensiveness of their injuries. This finding is consistent with previous studies (Pittman et al., 1989; Michaels et al., 1999) that suggest that bodily injury affects an individual's sense of danger through other related factors (e.g., how the individual assessing their own ability to handle the traumatic event) (Koren et al., 2005).

In light of these findings, they chose to compare the frequency and intensity of PTSD symptoms in the injured and noninjured groups, rather than studying PTSD as a formal diagnosis. They found that those in the injured group, scored significantly higher on all clinical scales than the noninjured group. Intergroup differences were generally consistent on Clinician-Administered PTSD scale subscales (on the three PTSD cluster scores - reexperiencing, avoidance, and hyperarousal). There was however, a slightly larger effect on the hyperarousal subscale (Koren et al., 2005).

Injury and PTSD have been studied in other populations as well. In patients admitted to trauma centers, PTSD rates 12 months after injury have ranged from 2% to 30% (O'Donnell et al., 2004; Zatzick et al., 2002; Schnyder, Moergeli, Klaghofer, & Buddeberg, 2001; Carty, O'Donnell, & Creamer 2006). Research indicates that the course of PTSD in this population is

highly variable. For example, it is likely that 50% of patients who are diagnosed with depression or PTSD at 3 months may no longer have the symptoms of either condition at 12 months (O'Donnell et al., 2004). Research has also shown conflicting results - 50% of patients diagnosed with PTSD at 12 months may not have had reported the symptoms to receive this diagnosis when assessed after the injury (Carty et al., 2006).

Despite the variability found in studies of PTSD among injured populations, as the literature on this topic continues to grow, more scholars are suggesting that traumatic injury may increase the risk of PTSD, rather than reduce it. Though some areas have shown promise, more research is needed in this area. A research design that includes matched case-control of injured and noninjured survivors of the same trauma may provide invaluable insight to the relationship between PTSD and injured populations (Koren et al., 2005). Although the focus of this research is on veterans with combat-related PTSD, attention must be given to comorbidities related to PTSD.

Depression

Although the literature suggests a substantial comorbidity between PTSD and depression (Beck, Grant, Clapp & Palyo, 2009; Benda & House, 2003; Ehrling, Ehlers, & Glucksman, 2006; Karatzias, Power, Brown & McGoldrick, 2009), depression alone is also a specific consequence of trauma. Upon experiencing stressful or traumatic events, an individual may exhibit negative and self-devaluative thoughts, decreased affect and sad mood (Ehrling et al., 2006). Intrusive sensory memories are also common in depression. As depressive symptoms increase, those affected have an increased ability to imagine negative events but a decreased ability to imagine positive future events (Karatzias et al., 2009).

While depression and PTSD often occur simultaneously, the nature of the conditions varies. Major depressive disorders are characterized by a cyclical course whereas PTSD is more persistent and unremitting. Thus, a person suffering from PTSD is likely to have bouts of depression throughout the treatment process. Further complicating diagnoses and treatment, depression and PTSD also share many of the same symptoms – loss of interest, estrangement from others, low affect, insomnia, difficulty concentrating, anger, and guilt (Schillaci et al., 2009). Campbell et al. (2007) found that comorbid PTSD was associated with worse depression and increased health care utilization. Common treatment of PTSD involves using imagery and reliving the traumatic events, this treatment however is connected to increased depression in the affected individual (Karatzias et al., 2009).

Individuals who suffer from PTSD have a reduced quality of life in a variety of areas – physical, occupational, social, and psychological. Depression can also affect these areas of one's life, but is more often associated with significant interpersonal dysfunction in particular (Beck et al., 2009). Beck et al. (2009) studied the influence of depressive symptoms on the interpersonal effects of PTSD in intimate friends, intimate partners, family, and general social functioning. They found that depression significantly effects levels of distress related to PTSD symptoms (Beck et al., 2009). These findings are similar to other studies that focus on comorbidities of depression and PTSD, despite the specific population and traumas under investigation.

Other studies were done with military veterans. In general, veterans who suffer from PTSD have more unstable self-esteem, higher negative affect and lower positive affect (Kashdan, Uswatte, Steger & Julian, 2006). Benda and House (2003) noted gender differences in veterans who suffer from PTSD. Childhood abuse is a major predictor of PTSD in both males and females. For females, the abuse often results in self-depreciating messages which affects their

self-identity. Ultimately, these messages lead to dysfunctional interpersonal relationships, low self-esteem, depression and fearfulness. For males, PTSD is related more to issues of self-efficacy and resilience and manifests in aggressive behaviors toward self and others, substance use and suicidal thoughts (Benda & House, 2003). Depression exacerbates the PTSD and manifests itself in different ways.

Another population studied in terms of comorbidities of PTSD are refugees, often non-soldiers who have also been effected by war. Blair (2000) studied Cambodian refugees who survived the Khoma Rouge regime. The traumas associated with their experiences included deprivation, physical injury or torture, incarceration, and witnessing killing or torture. Blair (2000) found the risk of major depression was increased among this population due to recent stressors and stressors that occurred after the traumatic events. Blair (2000) also found that high levels of trauma were associated with high levels of major depression and PTSD. As major depression sometimes leads to suicidal thoughts, the risk factors of suicide must be addressed.

Suicidal Ideation

Research shows that some traumatic events (e.g., sexual abuse, rape, domestic violence and combat trauma) generally increase a person's risk of suicide (Ben-Ya'acov & Amir, 2004; Barraclough & Hughes, 1987; Fontana & Rosenhack, 1995; Kotler, Iancu, Effroni, & Amir, 2001). Because of this increased risk, untreated symptoms of PTSD may lead to depression and ultimately, suicide (Brady et al., 2000; Breslau, 2001; Hudenko, 2008). Corroborating studies attribute the high levels of intrusive memories as the primary predictor of the increased risk for suicide (Bullman & Kang, 1995; Hendin & Haas, 1991; Fontana & Rosenhack, 1995). Additionally, low levels of avoidance and high levels of arousal symptoms are factors related to increased suicide risk. There are however, other research studies that claim that the increased risk

of suicide can be attributed to psychiatric conditions rather than untreated PTSD symptoms (Brent et al., 1993; Kotler et al, 2001; Qin, Agerbo, & Mortensen, 2002).

As previously mentioned, combat trauma is one of the traumatic events that is related to increased risk of suicide (Fontana & Rosenhack, 1995). U.S. veterans have an increased risk of suicide when compared with the general population (Kaplan et al., 2007). Veteran suicides are more likely older men with diminished supports, medical and psychiatric conditions, and availability and knowledge of firearms (Kaplan et al.). Other contributing factors of increased suicide risk are alcohol abuse, family history of suicide, poor social environment, possession of firearms, and the presence of medical and psychiatric conditions (including combat-related PTSD) (Amir, Kaplan, Effroni, & Kotler, 1999; Bullman & Kang, 1995; Conwell et. al. 1996; Qin, Agerbo, & Mortensen, 2002). Of veterans with combat related PTSD, those with the highest risk of suicide have experienced multiple combat-related injuries and/or been hospitalized as a result of combat-related wounds (Hudenko, 2008). This finding suggests that suicide risk in veterans with combat-related PTSD is influenced by the severity of the injury and the number of times it occurred.

Due to this suicidal risk in veterans with PTSD, service providers must ensure that veterans are aware of and provide the most efficacious treatment available. When combat veterans return to their U.S. homes, they should expect to receive the most effective treatments for PTSD and benefit from research on the most efficacious treatments. Families of combat veterans should have comfort in knowing that their loved ones are being accurately diagnosed and treated.

Social Disorders/Dysfunctions

As with depressive disorders and other anxiety disorders, sufferers of PTSD also tend to isolate from family, friends, and other social supports. Veterans specifically report difficulty adjusting to civilian life, often feeling alienated after returning home. These feelings of alienation might be exacerbated in Vietnam veterans because of how the Vietnam War is perceived in the U.S. Vietnam veterans returning home after fighting in this unpopular war, often recall being called “baby killers” and spat upon. In these cases, isolation seemed safer than rejoining an unaccepting and often hostile hometown (Jordan et al., 1992). Along with isolation, substance abuse also became a method of self-medicating for Vietnam era PTSD sufferers.

Substance Abuse

Clinical psychologists and social workers in the field of mental health have known for quite some time about the incontrovertible relationship between PTSD and substance abuse (SA). This relationship is supported by empirically-based research on co-morbid PTSD/SA issues from the last ten to fifteen years. Substance abuse includes alcohol dependence, dependence on uncontrolled substances, and prescription medication abuse. While incidences of SA and co-morbid PTSD tend to be high, veterans with combat-related PTSD are especially replete with SA and SA-related issues (Rotunda, O’Farrel, Murphy, & Babey, 2008). This same observation was echoed by Dedert et al. (2009); Back, Waldrop, and Brady (2009); and Cacciola, Koppenhaver, Alterman, and McKay (2009). Sobell & Sobell (2007) also comment on the prevalence of PTSD and SA. Their research indicates that PTSD and SA occurrences are higher in treatment settings than in the general community.

Additionally, there have been observations that delineate specific characteristics of behavior with this population. For example, a high correlation exists between individuals

suffering from PTSD/SA and the increased risk for suicide (Sobell & Sobell, 2007; Back et al., 2009; Cacciola et al., 2009). Individuals (i.e., veterans) with co-morbid PTSD/SA issues also tend to partake in more self-destructive behaviors and activities (Back et al., 2009; Rotunda et al., 2008). Research also suggests higher rates of admission into intensive, inpatient psychiatric care among those with PTSD/SA issues (Cacciola et al., 2009). Given the above observations regarding the population with a co-morbid PTSD/SA diagnosis, these individuals generally experience longer hospitalizations and overall poorer mental health treatment outcomes. Specifically, those with this diagnosis experience SA-related relapses more frequently than those who carry a PTSD diagnosis alone or Substance Use Disorder (SUD) diagnosis alone.

Additionally, patients who carry a PTSD diagnosis, a SUD diagnosis, and an additional Axis I diagnosis (e.g., Major Depressive Disorder) tend to have the worst treatment outcomes when compared to patients with less complicated mental health diagnosis such as uncomplicated PTSD or Major Depressive Disorder (Cacciola et al., 2009). For those with PTSD/SA, the response to any kind of mental health treatment regimen also tended to be poorer; they experienced greater overall psychological distress; and had less employment. Cacciola et al. (2009) also stated that those with the PTSD/SUD/Axis I combination also experienced greater medical severity, meaning that this group also had greater and/or more severe medical issues along with their PTSD/SUD/Axis I disorder. These findings support Dedert et al.'s (2009) work that states that up to 31% of veterans have a lifetime prevalence of PTSD and those who present for mental health treatment often have co-morbid PTSD, SA, and/or Major Depressive Disorder. As veterans lifetime prevalence of PTSD is significant, others are effected by their trauma. The concept of secondary trauma is briefly discussed.

Secondary Trauma

The concept of Secondary Traumatic Stress (STS) has been well documented by social work researchers (Bride, 2007; Figley, 1978; 1995; 2002). Secondary Traumatic Stress refers to the secondary experience of traumatization by a someone close to the traumatized person. Figley (1983) also used the terms “compassion fatigue”, “compassion stress”, and “secondary victimization” to describe the same concept. This stress can be experienced by family, friends, social service personnel and others intimately involved with the traumatized person, causing a significant disruption in their own lives (Bride, 2007).

The effect of PTSD on the families of veterans is well documented. For example, as has been noted, veterans with combat-related PTSD have been found to have more difficulty controlling anger and maintaining a stable mood. Jordan et al. (1992) found that families of veterans with combat-related PTSD were extremely chaotic, disturbed, and severely unhappy. Their findings also suggest that veterans with PTSD have greater levels of violence in their homes and their children tend to have behavioral problems (Jordan et al., 1992). As PTSD clearly effects the traumatized person and others around them, effective treatments must be identified.

Treatment Modalities for PTSD

Cognitive Behavioral Therapy

One major treatment approach for PTSD is Cognitive Behavioral Therapy (CBT). The basic tenet of CBT is that erroneous processing of information results in maladaptive behaviors and negative emotions (Gaudiano, 2008). In this treatment approach, the patient and therapist focus on working towards established goals and solving problems. The aim of treatment is to correct the patient’s distorted thoughts and produce improvements in his/her affect and behavior.

As symptoms improve, the patient is able to better function in his/her daily life (Gaudiano, 2008).

Cognitive behavioral treatments are comprised of numerous interventions that are effective for treating a number of psychological diagnoses and symptoms (e.g., anxiety disorders, depression, pain management, etc.). CBT treatment success is usually a combination of behavioral interventions and cognitive processing or restructuring, in the form of monitoring, identifying, or challenging problematic thoughts (Horrell, 2008). CBT can be administered individually or in groups. CBT is also affected by various factors including social support, marital status, clinical severity, duration of symptoms, socioeconomic status, and ethnic status (Horrell, 2008).

Exposure Therapy

The general class of cognitive behavioral treatments for PTSD has been separated into trauma focused and skills-focused therapies (Rothbaum et al., 2000 as cited in Monson et al., 2005). Trauma-focused therapy includes approaches such as prolonged exposure therapy and cognitive processing therapy while skills-focused therapy includes approaches such as stress inoculation training and assertiveness training. In prolonged exposure therapy, persons confront feared situations, objects, memories, and images. Prolonged exposure therapies have been labeled terms to explain the process of prolonged exposure therapy utilized. These terms include imaginal exposure, in vivo exposure, flooding, virtual reality exposure, and prolonged exposure (Rothbaum & Foa, 1999).

The purpose of all types of exposure methods is to assist anxious persons to confront the stimuli that evokes fear. The aim of exposure is to identify and reduce the fear or anxiety. Exposure therapy programs typically consist of other forms of training such as psychoeducation or relaxation training. These other forms of training are often used preliminarily to build up to

the exposure (Foa & Rothbaum, 1998).

For chronic PTSD in the veteran population, the exposure often involves having the person confront their traumatic memories in imagination, as well as with situations and objects in vivo. When the veteran confronts the traumatic memory in imagination, he relives the experience, as well as associated emotions and thoughts. When the veteran experiences in vivo exposure he confronts situations, activities, or objects that may evoke trauma-related anxiety but are not dangerous. Such exposure has been hypothesized to facilitate the veteran's ability to emotionally process the traumatic event and to change the faulty cognitions that cause the PTSD (Foa & Rothbaum, 1998).

The primary component of exposure therapy is working with the person to confront the feared stimuli until this fear dissipates. As discussed, there are a variety of ways to implement exposure therapy with trauma survivors. The approach that Foa and Rothbaum (1998) used involves the patient reliving the trauma experience by describing it verbally, and often repeatedly, in present tense for 45-60 minutes. The therapist encourages the patient to use detail with an emphasis on sensory memories (e.g., smells and sounds) as well as their thoughts and feelings (Astin & Rothbaum, 2000).

Foa and Rothbaum (1998) noted seven specific benefits to using exposure therapy to treat PTSD. First, exposure therapy reduces the level of fear associated with other components of the trauma memory. It also counteracts the patient's belief that their anxiety is permanent. Second, exposure therapy prevents the patient from avoiding the trauma memory. Third, exposure therapy provides a safe and therapeutic environment for the patient to rehearse the trauma memory; therefore incorporating the safety information into the traumatic memory. Fourth, exposure therapy helps the patient distinguish the traumatic event from other potentially

threatening events. The event in question then is seen as a specific incident rather than evidence of a dangerous world or an inadequate self. Fifth, successful exposure therapy allows the patient to practice mastery and courage during times of difficulty. Additionally, the reflection on the traumatic event allows the patient to see their previous (often negative) perception does not mirror the reality of the situation. Finally, repeated reliving of the traumatic event allows the patient to formulate a more organized memory of the event, which is easier to integrate with the rest of their memory system. In summary, exposure therapy is believed to have several separate effects. Some of these effects are relatively automatic (e.g., a reduction in anxiety and change in memory structure) while others are more strategic (e.g., positive reassessment of actions and events (Brewin & Holmes, 2003).

Selective Serotonin Reuptake Inhibitors

Selective Serotonin Reuptake Inhibitors (SSRIs) are antidepressants that changed the serotonin levels in the brain. At this time, the U.S. Food and Drug Administration has approved the use of Paroxetine and Sertraline for the treatment of PTSD. Sertraline was initially formulated to treat depression. However, it has been found effective in the treatment of anxiety disorders. The effectiveness of Sertraline for the PTSD treatment was investigated in three small uncontrolled clinical trials (Brady et al., 1995; Kline et al., 1994; Rothbaum et al., 1996) and again in two large, flexible dose studies (Baker et al., 1998; Davidson, 1997). Positive results were reported in those five studies. Sertraline was also evaluated in an open trial of 19 Vietnam Veterans (Kline, 1994). The participants previously tried other antidepressants with unsuccessful results. Twelve of the nineteen participants reported symptom reduction for PTSD, depression, anxiety, and global functioning. More recent studies have also shown Sertraline effective in preventing relapse of symptoms of PTSD (Davidson et al., 2001, as cited in Grinage, 2003).

Treatment Efficacy

Cognitive behavioral treatments have shown effectiveness at improving chronic PTSD in survivors of different types of trauma (Chemtob, Tolin, van der Kolk, & Pittman, 2000; Rothbaum, Meadows, Resick, & Foy, 2000 as cited in Hembree, Street, Riggs, and Foa, 2004). CBT has been established as an effective treatment for PTSD (Rothbaum et al., 2000). CBT has also been shown effective at ameliorating chronic PTSD in survivors of a variety of traumas. To illustrate the effects of exposure therapy, cognitive behavioral treatment efficacy must be reviewed. The treatment approaches with significant empirical support in reducing PTSD symptoms include cognitive therapy, exposure therapy, stress inoculation training, and eye movement desensitization and reprocessing (EMDR) (Hembree et al., 2004).

Although the results of various studies have differed on the overall effectiveness of particular forms of cognitive behavior therapy, they have revealed few differences in outcomes relative to different forms of CBT except when considering exposure-based therapy (Foa et al., 1999; Marks, Lovell, Noshirvani, Livanou & Thrasher, 1998; Resick, Nishith, Weaver, Astin, & Feuer, 2002 as cited in Monson et al., 2005). The International Group on Depression and Anxiety, a group of internationally recognized experts, provided a consensus statement for exposure as a primary psychosocial intervention and the single most important treatment strategy for PTSD symptoms (Ballenger et al., 2000; 2004).

In the late eighties and early nineties, the first controlled studies were documented on prolonged exposure and the effect on PTSD symptoms with male Vietnam veterans (Rothbaum & Foa, 1999). One of the first studies was conducted in by Cooper and Clum (1989). In their study, all patients received prolonged exposure therapy in addition to weekly individual and group therapy. Another study conducted by Keane et al., 1989, compared patients receiving

prolonged exposure therapy to waitlisted patients. In a third study (Boudewyns & Hyer, 1990), all patients received a group treatment program with fifty percent receiving additional prolonged exposure and the remaining patients receiving traditional psychotherapy on an individual and weekly basis (Boudewyns & Hyer, 1990; Boudewyns et al., 1990).

All three studies found some benefits for the experimental group as compared to the control group; however, they obtained a small effect size. Specifically, the Cooper and Clum (1989) study resulted in reduced PTSD symptoms after prolonged exposure, with minimal effect on trait anxiety or depression. However, in the Keane (1989) study, therapists seemed to inflate the reduction of symptoms for the experimental group. The experimental group reported less reduction of symptoms on the self-report measure. In contrast, the experimental group rated themselves as more improved on general psychopathology measures than did those on the wait list (control group). In the third study, at three month follow-up, Boudewyns & Hyer (1990) found the exposure group more improved on the Veterans Adjustment Scale (VAS) with no group differences on psychophysiological measures. In sum, all three studies found some benefit to prolonged exposure patients compared to the control group.

More recent studies also support the efficacy of exposure therapy. Taylor et al., 2003 compared efficacy, speed, and adverse effects of three PTSD treatments; Eye Movement Desensitization and Reprocessing (EMDR), Prolonged Exposure, and Relaxation Training. They found that treatments did not differ in symptom worsening, in the effects of numbing and hyperarousal symptoms, or in drop-out rates. However, prolonged exposure resulted in significantly larger reductions in reexperiencing and avoidance when compared with EMDR and Relaxation. Prolonged exposure also yielded faster results (reducing avoidance), and yielded a greater degree of participants who no longer met the criteria for PTSD post-treatment. Although

EMDR and Relaxation did not differ in efficacy or speed, all three treatments found a reduction in anger, guilt, and depression.

Yet another study shows efficacy for prolonged exposure therapy. Foa et al., 2005, conducted a study of 171 sexually assaulted women with chronic PTSD randomly assigned to prolonged exposure only, prolonged exposure and cognitive restructuring, and/or waitlist group. Their findings included a reduction in PTSD and depression in both treatment groups when compared with the waitlist group. Prolonged exposure was effective without the addition of cognitive restructuring. Cognitive restructuring did not effect the treatment outcome. Another interesting finding was that therapists with CBT experience yielded the same results as therapists without CBT experience prior to this study.

For example, one study reports that successful exposure treatment is related to the first activation of the fear and the continual reliving of it both in session and between sessions (Brewin & Holmes, 2003). Other studies that support the initial activation as a predictor for outcome, measured outcome based on facial expressions or increased heart rate (Foa et al., 1995; Pittman et al., 1996 as cited in Brewin and Holmes, 2003). In contrast, after controlling for symptom severity, Van Minnen and Hageraars (2002), found no significant association between fear activation and improvement (Brewin & Holmes, 2003).

Support for treatment efficacy of exposure therapy for PTSD has been found in additional studies. Richards et al. (1994) conducted a study treating participants with PTSD with a total of eight sessions of exposure therapy. Some of the participants began with four sessions of imaginal exposure therapy and ended with four sessions of in vivo exposure. Other participants were provided with four sessions of in vivo exposure first, followed by the imaginal exposure therapy. They found that participants showed considerable improvement in both treatment conditions.

The criteria for PTSD was no longer met at post-treatment and one-year follow-up. They found the in vivo exposure was more effective whether used first or last in treatment.

Marks et al. (1998) conducted a study of outpatients with PTSD that resulted from various traumas. They found that exposure or cognitive therapy and a combination of both were equally successful in decreasing PTSD symptoms post-treatment and at 6 month follow-up.

In light of the treatment efficacy findings for exposure therapy, research also indicates under-utilization in practice. Practitioners may be apprehensive about prolonged exposure due to the belief that symptoms might be exacerbated and therefore cause a high drop-out rate or program incompleteness. However, Foa, Zoellner, Feeny, Hembree, and Alvarez-Conrad (2002) conducted a study to examine symptom exacerbation in 76 women with chronic PTSD. Upon introduction to imaginal exposure therapy, PTSD symptoms were exacerbated by 10.5%, while 21.1% had increased anxiety and 9.2% had increased depression. However, the introduction to imaginal exposure therapy caused only a temporary increase in symptoms. This slight increase did not ultimately impact treatment outcome. Participants who experienced this exacerbation of symptoms all had significant reduction in symptoms after imaginal exposure was complete (Foa et al., 2002). The drop-out rate also had no relationship to the exacerbation of symptoms. This is a significant finding, providing evidence that symptom exacerbation does not jeopardize treatment. This finding might also encourage therapists to not hesitantly discontinue treatment due to initial increased symptoms.

The results from the studies discussed above consistently support the efficacy of imaginal and in vivo exposure for the treatment of PTSD resulting from a variety of traumas. In general, these studies are well-controlled, leading to strong conclusions. Exposure therapy tends to be relatively short-term and well-tolerated, even by very impaired individuals, and thus should be

considered a treatment option in many cases of PTSD (Boudewyns & Hyer, 1990; Foa et al., 2002; Foa et al., 2005; Taylor et al., 2003).

Emotional Processing Theory

As the literature suggests exposure therapy is a best treatment approach for PTSD, it is important to focus on how exposure therapy is accomplished. It has long been suggested that anxiety disorders indicate a maladaptive fear structure in memory (Foa & Kozak, 1986; Foa et al., 1989). Memory fear structure refers to the meaning of stimuli and response. The trauma-related information is believed to activate the memory structure. Individuals with PTSD are thought to hold large numbers of stimuli and response presentations; therefore causing the traumatic memory to be readily accessed. As a result, these individuals experience PTSD symptoms. Emotional Processing Theory suggests that successful treatment must involve correction of the maladaptive components of the fear structure (Foa & Kozak, 1986). Exposure procedures activate the trauma memory by confronting the patient with trauma related information (Rothbaum & Foa, 1999).

Nash and Baker (2005) also reviewed models of combat stress injury (PTSD). They report that theories of stress injury help to answer questions about causation, individual risk, and resiliency. As a learning theory perspective, they report although Emotional Processing Theory supports prolonged exposure therapy, it does not account for other types of stress injuries, not caused by specific horrific events. The theory also does not specifically address race, culture, or ethnicity and the possible impact on processing of events. To this end, a review on health disparities is provided in the following section.

Health Disparities

This study also seeks to explore whether race is a mitigating factor in relationship among combat-related injury, PTSD, and effectiveness of treatment. Health disparities refers to disproportionate rates of morbidity, mortality, and healthcare access among population groups defined by a variety of factors that include socioeconomic status, gender, residence, and race or ethnicity. The literature reveals that numerous studies have confirmed the existence of serious disparities in healthcare and health outcomes among racial and ethnic minorities (Blendon et al., 2007). The 2003 Institute of Medicine report, for example, concluded these studies have shown the existence of health disparities in the experiences of minorities (e.g., Blacks, Hispanic Americans, Asian Americans, and Native Americans) in terms of health care quality and access (Blendon et al., 2007). In addition, the public health research establishment is committed to understanding health disparities in the United States (Woolf, Johnson, Fryer, Rust, & Satcher, 2004; Dressler, Oths, & Gravelee, 2005) and around the world (Almeida-Filho et al., 2003). The primary goal of the Healthy People 2010 initiative, a program of the National Institutes of Health (NIH), is reducing health disparities and thus improving public health in the United States (U.S. Department of Health and Human Services, 2000).

The Agency for Healthcare Research and Quality (AHRQ) releases a yearly National Healthcare Disparities Report (NHDR) on behalf of the U.S. Department of Health and Human Services (HHS). The primary purpose of the NHDR is to track disparities related to quality of and access to health care. Healthcare quality is quantified by determining the extent to which health care personnel and hospitals provide evidence-based care for specific services as well as the outcomes of the care provided. The measures of healthcare quality are organized around four dimensions: effectiveness, patient safety, timeliness, and patient centeredness (USDHHS, 2001).

Within this frame, the four stages of care for patients are: staying healthy, getting better, living with illness and disability, and coping with the end of life (Blendon, Brodie, Benson, Altman, & Buhr, 2006). Healthcare access is quantified by assessing the ease with which patients are able to get needed healthcare as well as their actual use of these services. The measures of healthcare access fall into two dimensions: facilitators and barriers of care and health care utilization (USDHHS, 2001). The NHDR's companion report, the National Healthcare Quality Report (NHQR), uses the same quality measures as the NHDR to offer a comprehensive overview of the quality of healthcare in America. While both the NHDR and the NHQR measure healthcare quality and track changes over time, each report has a specific orientation (i.e., the summary of the quality of healthcare and disparities related to quality and access) (USDHHS, 2001).

The U.S. Department of Health and Human Services (USDHHS) supports research on health disparities that examine the disproportionate rates of incidence, prevalence, and mortality of diseases and other negative health conditions among specific populations in the United States. Understanding general health disparities is complex, but when the focus is narrowed to mental health, issues such as racial and ethnic bias, stigma and other social cultural factors contribute to further entangle disparities. A 2001 report by the U.S. Surgeon General (USDHHS, 2001) which reviewed disparities in mental health, concluded that race, ethnicity, and culture are vital considerations when assessing the prevalence of mental disorders, the costs of mental illness, utilization of psychiatric services, and the unmet mental health needs of racial and ethnic minorities. The 2003 reports of the President's New Freedom Commission on Mental Health seem to support these conclusions as evidenced by its challenge to the nation to improve the mental health system by eliminating disparities in mental health services (Boyce & Cain, 2007).

Healthy People 2010, developed by the U.S. Department of Health and Human Services

(HHS), is another federal initiative created to address disparities in mental and physical health. This broad health promotion and disease prevention initiative was designed to be implemented nationwide during the first decade of the twenty-first century. Through a rigorous, national consensus process, HHS identified 955 specific objectives and sub-objectives to improve the nation's health and established baseline values of specific targets to be achieved by 2010. Healthy People 2010 strives to attain two overarching goals: (1) increasing life expectancy and improving quality of life, and (2) eliminating health disparities based on such characteristics as race, ethnicity, sex, and income or education (Keppel, Bilheimer, & Gurley, 2007).

History of Health Disparities

Health disparities involving race and ethnicity have increasingly become an area of focus for research and intervention in the United States. There is some disagreement regarding the degree to which health disparities are related to access issues (e.g., differential rates of insurance) rather than institutional and/or individual racism (Bloche, 2005). This debate about the underlying causes of health disparities is influenced by diverse interpretations of existing data. For example, the degree to which health disparities can be accounted for by racism continues to be debated. This debate is evidenced by the sharp criticism (Epstein, 2005 as cited in Boris, 2006) seen in response to the Institute of Medicine's Task Force report that suggests that racial injustice influences disproportionate health outcomes in the U.S. (Smedley, Stith, & Nelson, 2003 as cited in Boris, 2006).

While the focus on health disparity research is important, researchers must take into consideration the history of racism in the United States and the impact this history has on ethnic minority's views of disparity research, despite their positive intentions. For example, literature suggests that Blacks have a general mistrust of the research process, particularly when conducted

by primarily White scientists. As such, when planning research trials both in the U.S. and abroad, cultural divisions stemming from the history of racial oppression in the U.S. should be addressed in the planning stages (Hussain-Gambles, Atkin, & Leese, 2004 as cited in Boris 2006). Only then, can health disparities be adequately researched and ultimately addressed and eliminated.

Social and historical factors have also led to continued disparities among racial/ethnic groups in terms of socioeconomic status and experiences of discrimination. For example, poverty disproportionately affects racial and ethnic minorities. In 2007, the poverty rate for Whites was 8.2 percent, compared with 24.5 percent for Blacks, 23.2 percent for American Indians and Alaskan Natives, 21.5 percent for Hispanics, and 10.2 percent for Asian Americans (U.S. Census Bureau, 2008). In general, those who live in poverty, regardless of race or ethnicity, have poorer health than those who do not (Krieger 1993; Yen & Syme, 1999). Furthermore, those who fall in the lowest socioeconomic classes are two to three times more likely than those in higher socioeconomic classes to have a mental disorder (Muntaner et al., 1998; Krieger, 1993). These significant differences in socioeconomic status (SES) have caused debate among scholars about whether low SES alone can explain disparities in both physical and mental health between racial/ethnic minorities and Whites. This debate has yielded literature that provides compelling evidence to suggest that SES alone does not adequately explain these disparities (Miranda, Nakamura, & Bernal, 2003).

It is important to note that racial and ethnic disparities exist in many other aspects of American life. For example, Blacks, Hispanics, American Indians, Pacific Islanders, and subgroups therein disproportionately fall into lower socioeconomic categories, attend lower quality schools and work in poorer-paying jobs. These disparities can be traced to several factors, including the history of legalized segregation and discrimination and its enduring legacy that

allows discrimination to continue to occur for people of color (Dressler, Oths & Gravlee, 2005). For example, studies involving mortgage lending, housing, and employment practices were conducted using ethnic minority and White “testers”. The results of these studies demonstrate the persistent discrimination against Blacks and Hispanics as the White “testers” were consistently favored. These studies illustrate the ways in which American social and economic life continues to be influenced by race and ethnicity, with minorities disadvantaged relative to Whites. Furthermore, these findings intimate that the experiences of ethnic minorities in other areas of their lives are likely to affect their perceptions and responses in the healthcare setting (Smedley et al., 2003).

Hines-Martin, Malone, Kim and Brown-Piper (2003) also identified three types of barriers to mental health access among low-income Blacks: individual (e.g., stigma, knowledge deficits), institutional (e.g. lengthy paperwork, difficult enrollment process), and cultural (e.g. family tradition). An example of culture or family tradition is found in the Black community. Traditionally, the Black view of church and faith encourages reliance on faith to handle life’s difficulties, including mental illness (Snowden, 2001; Taylor & Chatters, 1986). In subjects with PTSD, the fear of family and community disapproval were highly endorsed cultural barriers. The denial of mental illness to avoid personal embarrassment was found (Cooper-Patrick, Brown, & Palenchar, 1995; Gary, 2005). In the same way, families may become stigmatized when a relative requires psychiatric care (Gary, 2005).

One approach to racial disparities begins with the recognition that the lived experience of racial minorities is rooted within a complex history and culture. While common factors that place groups at risk for negative mental health outcomes exist, these factors cannot account for ethnic disparities alone. Rather, the influence of these factors may vary across groups, which requires a

holistic approach to truly understand mental health. The aim then is to find evidence of variation across groups, which may suggest the need for unique group interventions. Finally, it is important to note that cultural resources that are found within groups may improve mental health or diminish the effects of certain stressors that have more adverse effects for other groups (Chang, 2003).

Race, though not a biological category, has significant social meaning (Krieger et al., 1999; Williams et al., 1997 as cited in Miranda et al., 2003). Some have argued that the concept of race is particularly significant when specific racial minority groups are treated as inferior and given disproportionate access to power and other valued resources. Certainly, the long and painful history of socially sanctioned racial discrimination and segregation in the United States reinforce these “social differences” (Takaki, 1993). Ancestors of Blacks were forcibly brought to the United States from Africa as slaves and subsequently treated as possessions. The Indian Removal Act of 1830 forced American Indians off their land and onto government established reservations, often in remote areas of the country that lacked natural resources and economic opportunities. The Chinese Exclusion Act of 1883 banned immigration from China to the U.S. and denied citizenship to Chinese Americans until it was repealed in 1952. Finally, many Mexican Americans, Puerto Ricans, and Pacific Islanders became U.S. citizens through American conquest of the lands they inhabited. In addition to these historic examples, the creation of government sanctioned ethnic categories have likely influenced current social definitions of race and ethnicity (Miranda et al., 2003).

In summary, many scholars would argue that racial categorization is rooted in racism and that it is the construct of racism that helps explain racial and ethnic health inequities. By racism, scholars are referring to an ideology of inferiority that is often used to justify unequal treatment

(discrimination) of specific social groups who are defined as inferior by both individuals and social institutions. An important question facing researchers investigating racial and ethnic health inequities is explaining how racial discrimination translates into ill health among disenfranchised Americans (Oliver & Muntaner, 2005).

Theoretical Explanations for Disparities

Dressler et al. (2005) summarized five theoretical models that propose to explain health disparities between Black and Whites. The first two models focus on genetic components and behavior. The Racial-Genetic Model attempts to explain disparities by focusing on genetic variants that may be distributed differently across racial groups. The Health-Behavior Model focuses on destructive or unhealthy behaviors that individuals voluntarily engage in (e.g., overeating, smoking, use of drugs and alcohol). Dressler et al. conclude that these two models are not adequate explanations for racial and ethnic health disparities. The final three models are based on the influence of socioeconomic, psychosocial stress, and structural issues and offer more promise in providing explanations for health disparities.

The Socioeconomic Model involves an examination of race and socioeconomic status (SES). Although research has shown that controlling for SES lessens disparity, it does not account completely for them and more research is needed. The Psychosocial Stress Model focuses on racism at the interpersonal and institutional level. An advantage of this model is that it integrates the experiences of Blacks and considers how their unique experiences lead to stressors that are associated with health and disease. Finally, the Structural-Constructivist Model incorporates the dual nature of human existence for Blacks – the external social structure that all people live in as well as the reality of existing in this social structure as an ethnic minority. Like the previous model, this model incorporates the unique experiences of Blacks, but goes a step

further and acknowledges racial stratification in our society and its implications for health issues (Dressler et al., 2005).

Additional explanations of health disparities can be gleaned from the major findings of the United States Surgeon General's report (Kristofco, Stewart, & Vega, 2007). The report found that 1) Cultural and social factors contribute to the causation of mental illness, and the contribution varies by disorder; 2) Ethnic and racial minorities in the United States face a social and economic environment of inequality that includes greater exposure to racism, discrimination, violence, and poverty; 3) People in the lowest strata of income, education, and occupation (SES) are about two to three times more likely than those in the highest strata to have a mental disorder; 4) Racism and discrimination are stressful events that adversely affect health and mental health, placing minorities at risk for mental disorders such as depression and anxiety; 5) Mistrust of the mental health system and of providers is an important reason deterring minorities from seeking treatment and 6) The cultures of racial and ethnic minorities alter the types of mental health services they need. Clinical environments that do not respect, or are incompatible with, the cultures of the people they serve may deter minorities from using services and receiving appropriate care. The mistrust that minorities have are reinforced by evidence, direct and indirect, of clinician bias and stereotyping. Dr. David Satcher, former U.S. Surgeon General, has been a leader on ethnic disparities, within general and mental health. His report asserted that racial and ethnic minorities bare a great burden from unmet health needs and thus suffer a greater loss to their overall health and productivity (USDHHS, 2001). With this object in mind, a review of outcome studies of health disparities is provided.

Outcome Studies of Health Disparities

Population-based studies show that in the United States, Blacks receive roughly half of as many outpatient mental health services (including medication and therapy and in primary and specialty care settings) than Whites (Lasser, Himmelstein, Woolhandler, McCormick, & Bor, 2002). The participatory and interactive nature of mental health interventions are highly influenced by the patient's perception of trust in and with their provider(s). If the patient perceives discrimination on the part of the provider, the patient may be less likely to engage in the interactive exchange that psychotherapeutic intervention relies upon. Cooper-Patrick et al. (1999) found that Blacks generally rated their health care visits as less participatory than Whites, even when basic demographic factors, health status, and length of relationship with the physician were controlled. The findings also indicate that patients who shared the same race or ethnicity as their physician rated their visits as significantly more participatory than those who were a different race than their physician.

Another example is found in the Matt and Navarro (1997) review of 63 meta-analyses of psychotherapy effects published between 1977 and 1991. They found that only 5 metaanalyses included information on client ethnicity, and this was likely a result of the fact that few treatment studies include these data. They also found that racial discrepancies among Whites and ethnic minorities are present in the quality of psychotherapy services delivered. For example, ethnic minorities are more likely to discontinue treatment (Organista, Munoz, & Gonzalez, 1994), more likely to be misdiagnosed with Schizophrenia (Garb, 1998), and less likely to be given proper treatment when they do present for therapy (U.S. Department of Health and Human Services, 2001). Another important related issue is the relevance of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association) diagnostic criteria for ethnically

and culturally diverse groups (Horrell, 2008). Some researchers have suggested a change to the most current diagnostic system may be necessary to address the varied needs and circumstances of ethnic minorities (Ritsher, Struening, Hellman, & Guardino, 2002). Differences in the delivery of mental health services, the paucity of research on effective interventions for ethnic minorities, and disagreement over the relevance of the current diagnostic categories for these individuals present a significant problem for the ethnic minority community and practitioners who deliver services to this population (Horrell, 2008).

In a study of treatment for depression, Blacks and Whites had similar responses to psychotherapy and medication, but Blacks displayed less improvement in their ability to comfortably function in the community (Brown, Schulberg, Sacco, Perel, & Houck, 1999). Additionally, findings from a 1996 telephone and mail survey suggest that Blacks were less likely than Whites to receive evidence-based care for depression or anxiety (Wang, Berglund, Olfsø & Kessler, 2004). All of these studies support the summary that Chang (2003) provided after reviewing and comparing the outcomes of several studies of depression among Blacks and Whites. In her summary, Chang (2003) noted that while Blacks are no longer less likely than Whites to report accessing mental health care, this population tends to rely more heavily on primary care services. This reliance on primary care rather than specialized mental health care, suggests that the quality of treatment that Blacks receive is likely to remain substandard. Additionally, after controlling for other factors, findings also suggest that Blacks were less likely than Whites to receive mental health counseling or psychotherapy for depression, but more likely to receive pharmacotherapy (medication). Interestingly, Chang (2003) also reports that while Blacks are more likely to receive pharmacotherapy, they would rather not take medication

because of possible side effects. One interpretation that Chang (2003) offers is that despite seeking help, Blacks encounter obstacles to obtaining preferred forms of mental health care.

Blacks who suffer from frequent bouts of depression may be underdiagnosed and therefore inadequately managed in the primary care setting (Kristofco et al., 2007). Researchers conducted a study of patient and provider characteristics that are associated with increased risk of nondetection of mental health problems. Their findings showed that Blacks receive an accurate diagnosis of depression less often than Whites, both in the primary care setting and when evaluated for a psychiatric disorder in the emergency room. Additionally, mood disorders are often undiagnosed in Blacks, while schizophrenia is often overdiagnosed (Kristofco et al., 2007).

Another concern that deserves attention is Black men's lack of trust in the mental health system. This is an important topic that should be addressed early in their treatment process (Whaley, 1998; 2001). This lack of trust in the mental health system may effect health seeking behaviors in Black men. There are two factors that are critical to increasing the trust level of Black men. First, there must be an acknowledgement of racial biases in the mental health system. Racial disparities in the hospitalization rates of men, independent of serious mental illness, may reflect biases in clinical judgments about Black men. For example, violent behavior is significant in the decision to hospitalize an individual for mental health problems and because Black men are stereotyped as more violent than other racial groups and women, these perceptions may influence the judgment of mental health providers (Abreu, 1999; Loring & Powell, 1988; Rosenfield, 1984). Because these findings have implications for the mental health treatment of Black men, the second factor to increasing trust is a sincere effort to eliminate racial disparities

in mental health treatment (Whaley, 2004). This effort can include training programs to address the cultural biases and racial stereotypes that mental health providers may have toward Blacks.

Furthermore, a point of disparity identified in several studies was due to the measurement instrument. This disparity is based on the assumption that Blacks and Whites in the United States are significantly different and therefore the same measurement instrument cannot be accurate for both cultural groups (Neighbors et al., 2003). It is, however, unethical to assume that all Black and White Americans are homogenous groups because of their racial/ethnic identification and appearance. Therefore, while both groups may differ in the collective, the same racial differences cannot be assumed in individual cases. To determine differences on an individual level, further investigation must be done to confirm disparity. As such, racial and ethnic groups can occasionally be expected to present and express mental disorders differently. Therefore, in order to ensure a culturally informed assessment, diagnostic procedures must be able to distinguish actual symptoms of psychopathology from the culturally normative experiences of the patient. When providers consider the behaviors within the wider social and cultural context the behavior may not be indicative of mental disorder (Griffith, Neighbors, Johnson, 2009).

Leong, Wagner, and Tata (1995) believed it possible that Black veterans evaluated for PTSD several years ago perceived a need to overreport symptoms in order to get attention and treatment in a hospital setting dominated by White authority figures. Indeed, mistrust of mainstream social institutions is thought to influence the ways in which Black veterans utilize mental health centers, hospitals, and other White dominated health care facilities. Minority veterans who may have perceived the government as discriminating against them during their military service may especially distrust government-supported institutions.

The veteran population is unique as compared to the general population. Veterans also have relatively unlimited access to healthcare resources. Therefore, it is equally important to review outcome studies within the veteran population. A study conducted at a VA outpatient center found race to be a significant factor in the outpatient treatment of PTSD. In this study it was found that Black veterans received less treatment, by several measures, than White veterans. Examination of clinician-veteran racial pairings suggested that black-white differences were at least partially attributable to the problematic racial pairing of White clinicians with Black veterans. Evidence of such problematic racial pairing was observed on only one clinician improvement rating, with White clinicians reporting greater improvement in violent behavior among White veterans than among Black veterans (Rosenheck, Fontana & Cottrol, 1995).

Data from the National Vietnam Veterans Readjustment Study (Kulka et al., 1990), the largest epidemiological study of readjustment problems in Vietnam veterans, indicate that minority combat veterans, especially Blacks and Hispanics, tend to have significantly higher absolute rates of PTSD than White veterans. Evidence also suggests that minority combat veterans with PTSD are more likely to report greater levels of psychological disturbance than their White counterparts (Allen, 1996; Parson, 1985; Penk, Robinowitz, Dorsett, Bell, & Black, 1988). A limited number of studies have investigated the racial/ethnic differences in symptom reporting among combat veterans using standardized psychometric instruments, and conclusions from these studies are mixed. Thus, it is not clear if racial/ethnic differences exist in the expression of the disorder in combat veterans carrying the diagnosis (Frueh, Gold, De Arellano, & Brady, 1997).

Frueh et al. (1997) also utilized the Dissociative Experiences Scale (DES) and a measure of stress experienced in the combat-zone. They found that Black veterans had significantly

greater DES scores than White veterans. However, the investigators also found that Black veterans reported higher levels of combat exposure than White veterans. The researchers concluded that racial/ethnic identification was not a strong predictor in terms of degree of dissociative experiences. They reported that the severity of a veteran's combat exposure was a greater predictor than racial/ethnic identification. Although neither of these studies were conducted with PTSD patients, the participants were combat veterans with the presumption of high rates of PTSD symptoms (Frueh et al.).

Sutker, Davis, Uddo, and Ditta (1995) conducted a study involving veterans (N= 653) of the Persian Gulf War. These veterans underwent psychological debriefing and evaluation within one year after returning from the war. The study found that minority group veterans (primarily Blacks, but also including Hispanics and veterans from other racial groups) exhibited higher scores than Whites on the Beck Depression Inventory (BDI), Mississippi Combat Scale, and PTSD Checklist (PCL). These findings led to the authors' conclusion that racial minorities may be more vulnerable than White veterans to the adverse psychological effect that often accompanies exposure to combat experiences in a war-zone. The veterans who participated in this study were not seeking evaluation or treatment for specific psychological difficulties, but rather were receiving a routine debriefing. As such, the study provides information regarding general psychological sequelae associated with combat, rather than providing information on racial differences in veterans already identified as experiencing psychological distress (Frueh et al., 1997).

As demonstrated by the studies described earlier, the extent and nature of racial differences in veterans with combat-related PTSD remains poorly understood at this point. After relevant factors are controlled (e.g., combat exposure, other traumatic stressors, socioeconomic

status), it is unclear whether Black veterans consistently report greater severity of general psychological distress or differences on specific symptom dimensions such as depression, anxiety, thought disturbance, dissociation, or PTSD as compared to White veterans (Frueh et al.). In addition, *t*-test analyses were conducted on age, education, income, and global assessment of functioning (GAF) scores. The only finding of significance was that White veterans were diagnosed with a Major Depressive Episode significantly more often (80%) than Black veterans (Frueh et al.).

In another study involving veterans with combat-related PTSD the following comorbid diagnoses for racial differences were assessed: anxiety disorders other than PTSD and psychotic disorder, major depressive disorder, bipolar disorder, and substance abuse (current and in remission) (Monneir, Elhai, Frueh, Sauvageot, & McGruder, 2002). The study found no differences on measured demographic variables, nor significant differences on self-report or interview measures of anxiety, depression, or PTSD symptomatology. Additionally, contrary to expectation, there were also no differences on self report measures of dissociation, paranoia, or schizophrenia. The primary finding of difference on self report measures was that Black veterans were significantly more likely than White Veterans to endorse items of unusual mental activity from the MMPI-2. The results from this study suggest that Black and White veterans who have combat-related PTSD do not differ in the manifestation or severity of psychopathology (Monnier et al., 2002). While the veteran self-report measures had few differences, the study revealed differences in clinical diagnosis of psychotic disorders. Black veterans were more likely to be diagnosed with a psychotic disorder than White veterans, regardless of the self-report and MMPI-2 results. Further, in their discussion, Monneir et al. intimate that clinician bias was a factor in the higher diagnoses of psychotic disorders in Black veterans.

Another area of disparity was identified by Frueh et al. (2002) who reported disparities in psychotic and dissociative symptoms. Their findings suggest that the reason Blacks are more likely to be diagnosed with psychosis is due to the way they report their symptoms. For example, Black combat veterans with PTSD endorsed more items than White veterans that suggest positive symptoms of psychosis as well as more items that suggest symptoms of paranoid ideation and dissociation (Frueh et al). There were no racial differences in the self-report items related to PTSD, depression, anxiety, illness severity, psychiatric comorbidity or demographic variables. These findings suggest that racial differences might be related to the way that patients describe their psychotic symptoms rather than to existing phenomenological differences. As such, Frueh et al. concluded that both Blacks and Whites with combat-related PTSD experience psychiatric difficulties and are actually more similar than different.

Consistent with the previous findings, Frueh et al. (1997) found no racial differences on measures of anxiety, depression, or PTSD symptomatology in their study with combat veterans. The study also revealed no racial differences on clinician ratings of global assessment of functioning or on most categories of psychiatric diagnoses. These findings suggest that Black and White combat veterans evaluated for PTSD are similar with regard to reported manifestation or severity of psychopathology (Frueh et al., 1997).

In general, the research suggests that Black and White combat veterans with PTSD do not differ with regard to their experience of psychiatric symptoms. However, Black combat veterans tend to have a somewhat different clinical presentation. This different presentation can lead to inappropriate diagnoses and treatment for Black veterans. In terms of treatment, this may explain the higher likelihood of prescriptions for antipsychotic medicines (White & Faustman, 1989) and

less utilization of professional mental health services than White veterans (Rosenheck & Fontana, 1994).

Equally important, Scurfield and Mackey (2001) argues that important elements of a patient's problem might be overlooked if a clinician only assesses for trauma exposure. Additionally, another important factor to consider is race related stressors such as racial prejudice, stigmatization, and the social and economic effects thereof. They also found that when clinicians neglect to assess for race related stressors, these stressors might mirror PTSD symptoms.

In the preceding examples, researchers found mental health disparities that led to higher diagnoses of psychosis and treatment via pharmacology for Black participants. The disparities were attributed to poorer quality of care by utilizing primary care rather than specialized care (Chang, 2003), clinician bias (Monneir, et al., 2002) and interpretation of patient reported symptomology (Frueh et al., 2002). All of the researchers suggested that further health disparity research be done. Frueh et al. suggests that the etiology of bias lies in the research. They report that bias in research with minority populations may be attributed to any of the following factors, or a combination thereof: cultural or biological differences between racial groups; an artifact of bias on the part of the clinician/rater, patient, or measurement instruments; or the maladaptive responses learned from past experiences (e.g., previous experiences with racism may lead to paranoia) (Frueh et al.).

Disparities in Treatment and Assessment

A limited amount of empirically-based cognitive behavioral treatments have been tested with ethnic minority individuals despite the large population of ethnic minorities in the United

States (Horrell, 2008). First, a review of the DSM as it relates to cultural challenges, is offered. Next, issues of cultural competency are addressed.

DSM diagnosis. Studies of clinicians using semi-structured instruments along with the careful application of criteria published in the most recent Diagnostic and Statistical Manual (DSM) of the American Psychiatric Association typically found no race differences in diagnosis. Taken together, these findings have been interpreted as evidence of misdiagnosis, a situation that can have deleterious impact on treatment outcome for patients. Although misdiagnosis is certainly a plausible explanation for such results, it does not clarify why clinicians implementing the same set of diagnostic criteria on the same patients often come to divergent diagnostic conclusions (Neighbors, Trierweiler, Ford, & Muroff, 2003).

Despite improvements, DSM-IV (American Psychiatric Association, 1994) is also criticized from a cultural standpoint (Mezzich et al., 1996; Tseng, 1996). Only greater specificity regarding the development of a reasonable strategy for implementing DSM criteria across racial and ethnic groups will address these criticisms (Fabrega, 1996; Kleinman, 1996; Lukoff, Lu, & Turner, 1992). Another study reviewed racial differences in diagnoses made by clinicians using a semi-structured instrument and DSM criteria. No differences were found for depression while Blacks were somewhat more likely to be diagnosed with schizophrenia, while Whites were more likely to receive a diagnosis of bipolar disorder (Neighbors et al., 2003). The regression model used suggested that the contrast between schizophrenia and bipolar disorder was a major contributor to this race effect. The results do not support the conclusion that race differences in diagnostic categories are completely eliminated by the use of a semi-structured diagnostic instrument. Such findings make it more difficult to attribute these patterns to misdiagnosis,

although this remains a plausible explanation. Instead, these findings highlight the critical importance of clinical judgment in cross-cultural diagnosis (Neighbors et al., 2003).

The descriptive nature of the DSM can be deceiving. The listing and specificity of the criteria make psychiatric classification appear straightforward and reliable. Given the necessity of expert subjectivity in psychiatric diagnosis, culturally knowledgeable clinicians must be afforded the flexibility necessary to use their clinical skills. In short, psychiatric diagnosis with respect to assumed racial and ethnic differences must become more ethnographic (Castillo, 1997). Until more procedures are widely adopted by the clinical professions, the root causes of those racial disparities that concern researchers and policy makers may not be discovered.

In 1991, the NIMH supported formation of a group on culture and diagnosis to advise the DSM-IV Task Force on cultural modifications to the manual. The DSM-IV Cultural Formulation (CF) is a clinical supplement located within the DSM. The group was composed mainly of anthropologists and cross cultural psychiatrists (Alcaron, 1995). The purpose of CF is to decrease the negative effects of bias by encouraging clinicians to describe and incorporate the patient's ethnic identity, explanations of illness, social environment, and level of functioning in diagnosis and treatment. The CF also highlights the challenge of evaluating patients from different ethnic groups when the clinician is of a different race or ethnicity. Creating the CF is a positive move, but research is needed on how the CF has been operationalized in the clinical setting to produce diagnoses (Alarcon et al., 2002). While formal research is lacking, case reports and discussions concerning the CF is available (Alarcon et al.).

Therefore, despite the indictment of clinical judgment as the culprit in race and diagnosis, in order to implement effectively DSM-IV's Cultural Formulation (American Psychiatric Association, 1994), clinicians must also be afforded the flexibility necessary to exceed the

narrow focus on symptoms and probe for cultural contextual information. Allowing too much individual freedom in clinical procedures was criticized for allowing ethnocentric bias to contaminate the diagnostic process. Interestingly, allowing clinician discretion in the diagnostic process seems to decrease the probability of misdiagnosis (Neighbors et al., 2003). Thus, it is not surprising that responses to racial discrimination by Blacks are often not viewed as severe enough to indicate post-traumatic stress disorder (PTSD). Even in those instances in which Blacks are objects of discrimination and describe symptoms consistent with PTSD, their symptoms may be dismissed or trivialized because of the view that the stressors are not catastrophic enough, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM), to warrant a diagnosis of PTSD (Butts, 2002).

Racial and ethnic discrimination produce psychic trauma, and Blacks subjected to discrimination frequently respond with symptoms consistent with a diagnosis of PTSD. The symptoms described fall into three categories: (1) reexperiencing criteria, such as distressing dreams and flashbacks; (2) avoidance criteria, such as affective restriction and the avoidance of thoughts or feelings associated with the trauma; and (3) arousal criteria, such as insomnia, hypervigilance, and startle reactions. The symptoms reported by Blacks in the wake of discriminatory acts are subjectively perceived and may be felt as extreme and as annihilative, and described in catastrophic terms. Thus, it is surprising that discriminatory acts are not included among the stressors cited as causative of PTSD in the DSM-IV of the American Psychiatric Association (Butts, 2002).

Cultural competency. The need for better health professions' education in regard to cultural competence has been documented (Shaya & Gbarayor, 2006). The educational concerns identified include recruitment and retention of minority healthcare professional faculty and

students, recruitment of faculty with cultural diversity expertise, and additional faculty development on cultural competence (Shaya & Gbarayor, 2006). Although culture has a role in the healthcare system, minority patients typically receive healthcare from systems mainly organized by and staffed with majority group members (Brach & Fraser, 2000).

Cultural competency is defined in a variety of ways. Kristofoco et al., 2007 defines cultural competency as congruent behaviors, attitudes, and policies that join in a system, agency, or among professionals, enabling that entity to work effectively in cross-cultural situations. Cultural competency is also defined as a set of skills learned by healthcare professionals to communicate information from clinician to patient in a respectful and effective manner (Kristofoco et al., 2007).

In particular, clinician's differential treatment of Black and White patients has been argued as an unconscious process (Schulman et al., 1999). However, the importance of racial issues has been continually emphasized at professional meetings, in special issues published by high profile journals, in numerous books and reports, and by the organizations representing the clinical professions. It is hard to imagine a highly qualified clinician making a decision about a Black patient (or a patient of any other ethnic group) with no conscious consideration of how the person's race (or gender, age, or socioeconomic position) might influence the clinical encounter (Neighbors et al., 1999). There is also evidence suggesting that culturally competent techniques will reduce racial and ethnic disparities as well (Brach & Fraser, 2000).

Health Disparities in the Department of Veteran Affairs Medical Centers

Numerous studies have demonstrated racial and ethnic healthcare disparities in the United States. These disparities have also been demonstrated in the Veterans Affairs Healthcare System, where financial barriers have been minimized (VA HSR&D, 2007). The Department of

Veterans Affairs (VA) publicizes a commitment to high quality and equitable care with the goal of eliminating racial and ethnic disparities in healthcare. The Evidence Synthesis Pilot Program (ESP) was created to identify and address these disparities within the VA system. This process was initiated by healthcare professionals and researchers within the VA systematically reviewing evidence on disparities within the system. The objectives of the ESP were as follows: 1) determine prevalence of racial and ethnic disparities by clinical area within the VA; 2) describe all that is known about the sources of those disparities; and 3) qualitatively synthesize that knowledge to determine future research aimed at improving equity in VA health care (VA HSR&D, 2007).

According to the ESP, disparities in VA practice research has shown inconsistent patterns of findings. For example, studies comparing utilization and outcomes of mental health care based on veteran race do not reveal consistent patterns. Overall, the quality of inpatient and residential treatment for mental illness and substance abuse was similar across racial groups, however, disparities were detected more in outpatient settings. Preliminary studies investigating the effect of the racial environment on mental health outcomes suggest that Black veterans may benefit from having a same race clinician, and from being in a same race treatment group. These findings were considered preliminary and warrant validation in future studies (VA HSR&D, 2007). The ESP found disparities exist in all clinical areas. However, disparities seem to be more consistently observed for processes that entail more risk or require more intensive decision making, communication, or effort on the part of patients and/or providers (e.g., surgery, invasive procedures and medication adherence). In general, disparities in the VA effect more Blacks and Hispanics. White veterans tend to use more non-VA care than others do (VA HSR&D, 2007).

The ESP also identified seven potential sources of racial/ethnic disparities: 1) Veteran medical knowledge and information sources: Non-White and White veterans differ in their degree of familiarity with and knowledge about medical interventions; 2) Veterans trust and skepticism: Minority veterans tend to harbor less trust and more skepticism about the benefits of medical interventions, relative to their risks. These perceptions appear to be influenced by lack of familiarity with medical interventions, by historically or personally experienced discrimination, and for some Black veterans in particular, by a reliance on religious and spiritual avenues for coping with illness as opposed to medical therapies; 3) Racial/cultural milieu: Some have suggested that a more racially and culturally congruent healthcare environment (including racially concordant healthcare providers) for minority veterans may elevate trust, reduce skepticism, and enhance the acceptability of care; 4) Patient Participation: Several studies suggest that non-white veterans are less active participants in their care as compared to white veterans. Non-White veterans tend to ask fewer questions of their providers, who in turn provide less information. This could possibly lower investment by both parties in following recommended treatment plans; 5) Clinician Judgment: Studies suggest that clinicians' diagnostic and therapeutic decision-making varies by veteran race; 6) Veteran social support and resources: Non-White veterans may have fewer social supports and external resources to help both illness management and decision-making; and 7) Healthcare facility characteristics: Some disparities are at least partly explained by the fact that minority and White veterans tend to receive care at different VA Medical Centers. In some cases, VA Medical Centers that disproportionately serve minority veterans have fewer available services or overall lower quality of care. The potential source of disparities remains unexplored (VA HSR&D, 2007) although the Department of

Veterans Affairs reports a commitment to high quality and equitable care with the goal of eliminating racial and ethnic disparities in healthcare.

Summary

Racial disparities are detrimental to the health and well-being of all people of color. The enduring legacy of slavery and segregation serve to further confound the problems experienced by Blacks in particular. In this section, racial disparities were introduced as one manifestation of this enduring legacy. The preceding discussion has addressed health disparities in particular and how these disparities interact with, and are impacted by other disparities. The section also included a description of the VA's model to attempt to explain these disparities. The conceptual model for this study is located in Appendix B. While it is important to understand why disparities exist, efforts and attention must also be given to eliminating these disparities. In the next section, the methods used to address the study aims are presented.

This study explored the relationship between combat-related PTSD, combat-related injury, and race among veterans in a group-based exposure therapy. The literature review reveals the serious adverse effects of PTSD and the effect on public health. The Veterans Administration, community supports, and other mental health care organizations would benefit from the results of this study. Veterans are not only served in the VA, but often receive care in other institutions. Veterans must be afforded care based on best practice methods. This study contributes to the knowledge of best practices for combat injured veterans with PTSD.

CHAPTER 3

Methods

This chapter presents the research design and methodology used to address the Research Questions presented in Chapter 2. In this chapter, information about the original study is presented. Next, information about the sample is presented and the measure used in the analysis is described. Information about the measure includes items or an example of scale items, response category, and psychometric characteristics (i.e., validity, reliability information) as appropriate. After the discussion about the measures, power analysis and missing values issues are discussed. Finally, the analysis for addressing the research questions is presented.

A Field Test of Group-Based Exposure Therapy

This dissertation study was conducted using secondary data from a larger study, *A Field Test of Group Based Exposure Therapy with 102 Veterans with War-Related Posttraumatic Stress Disorder* (Ready et al., 2008). Although practice guidelines establish support for exposure therapy for the treatment of PTSD, the Rosen et al., 2004 survey, reports that exposure therapy is minimally used in the Department of Veterans Affairs (Rosen et al. 2004). The ongoing specialized VA PTSD program at the Atlanta VA sought to address this gap in evidence-based services.

To this end, the Posttraumatic Stress Clinical Team (PCT) at the Atlanta VA created a manualized treatment of group-based exposure therapy (GBET) utilizing components of the Transcend Program (Donovan, Padin-Rivera, & Kowaliw, 2001) trauma-focused group therapy (TFGT) (Schnurr et al., 2003); and an Australian PTSD program (Humphreys, Westerink,

Giarrantano, & Brooks, 1999); and a decade of techniques developed within the specialized VA PTSD program (Lorenz et al., 2006). The Transcend Program is a manualized treatment program which integrates cognitive-behavioral skills training, peer support, substance abuse relapse prevention, and constructivist theory approaches (Donovan et al., 2001). Trauma-focused group therapy combines direct exposure therapy, other cognitive behavioral approaches, psychoeducation, and peer support (Schnurr et al., 2003). The manualization of the treatment supported uniformity among group facilitators as the manual provides systematic instructions for facilitators. However, these instructions did not include information on addressing any ethnocultural issues. The PCT believed that this manualization would also provide opportunities for non-experienced facilitators to obtain the same results as more experienced facilitators.

The clinical staff developed GBET with the goal of improving outcomes after finding no efficacy for their previous group treatments (Ready et al., 2008). The PCT conducted an unfunded program evaluation study. Initially, they received 791 referrals for the GBET program. Fifty-two percent of referred patients could not be reached due to incorrect phone and addresses. However, 379 patients were contacted, of which 282 expressed interest in the program. Upon initial assessment, 107 did not meet the diagnostic criteria for war-related PTSD as a primary diagnosis. Another 56 were excluded due to active substance abuse or dependence. The open trial began with 102 veterans (Ready et al.). It is important to note that shortly after the start of the Iraq War (March 2003) the PCT experienced a significant increase in the number of referrals (Ready et al.).

The researchers posit that many war veterans experienced increased and/or similar PTSD symptoms as a response to television coverage of the war. This might account for the increased and similar PTSD symptoms. The ongoing trial included 93 Vietnam veterans, four Gulf War

veterans, two Iraq War (OIF) veterans, one Korean War veteran, one veteran in the Korean Demilitarized Zone in 1967, and one veteran on a mission in Haiti (1994-1995). All were male except one female nurse. Fifty-three participants (52%) were Black, forty-five (44%) were White, and four (4%) were Hispanic. The age ranges were from 33-78. There were only three dropouts. The inclusion criteria included participants with combat-related PTSD (as measured by CAPS and self-report measures, documentation of combat exposure on official military discharge documents, e.g., DD214 or other supporting documents), participants with a minimum of 6 months sobriety, and participants with a passing urine drug screen before the second interview (Ready et al., 2008).

GBET screening consisted of two interviews, first with a PCT non-physician clinician (licensed clinical social worker or psychologist) and second with a PCT psychiatrist. Prior to the appointment with the PCT psychiatrist, all participants were administered a urine drug screen. Those with negative results were scheduled for the second interview (Ready et al., 2008). GBET consisted of three-hour group therapy sessions, twice weekly for 16 to 18 weeks depending on group size. The groups were divided into cohorts of 10 participants. GBET was comprised of three phases: didactic training group building phase, exposure therapy phase, and a grief/guilt and a relapse prevention phase (Ready et al.).

The first 4-5 weeks of treatment included teaching stress management skills and building group cohesion. An alumni group discussed the value of participation with the new cohort. Participants were provided with basic information on PTSD symptoms and stress management. There was a particular focus on avoidance and how this helps maintain symptoms. Group cohesion was encouraged by the connection of past cohorts with new cohorts, with members required to have between session phone contact. The exposure component included group

members completing 30-minute presentations about premilitary and prewar histories (Ready et al., 2008).

During the next 8-9 weeks, the new cohort provided lunch for an alumni group which contributed to a sense of community. Outlines were provided for the first written and verbal war trauma presentations and each patient had 2.5 hrs to present to the group. The outline included arrival in the war zone, combat exposure, first kill (where applicable), and most stressful combat experiences. After the first war trauma presentation, patients were interviewed about their homecoming experience. The narrative plays an important role in treatment. The idea is to create a narrative with a beginning, arrival in war zone, middle (war traumas), and end (return to family). The presentations were audiocassette recorded and group members were required to listen to tapes at least 10 times between sessions. In an effort to provide on-going assessment, at the beginning of each session, patients discussed their response to treatment (e.g. effect of listening to tapes between sessions). The PCT staff dealt with negative responses to treatment and encouraged continued listening to the tapes. The patient also completed a 1 hr presentation about their most traumatic war experiences, which was also recorded and listened to 10 times. In total, patients experience 60 or more hours of exposure during GBET (3 or more hours of their own war-trauma presentations, 30 or more hours listening to recording of their own war-trauma presentations, and 27 or more hours of hearing other patients' war trauma presentations) (Ready et al., 2008).

The final 3 weeks addressed guilt, grief, and relapse prevention. It included an imagined funeral for a comrade, healing ceremony by chaplain, homecoming party given by alumni group, and recorded feedback from group members to each other. Graduation day included a certificate of completion and gold-colored medal pins. The graduates are encouraged to talk to others with

the gold-pin, building on the sense of community. In addition, monthly support groups were held for the significant others of past and current GBET participants (Ready et al., 2008).

Research Design

This research consists of secondary data analysis collected from the sample of 102 war veterans drawn from a *Field Test of Group-Based Exposure Therapy (GBET) with War-related PTSD* (Ready et al., 2008) as described in the previous section. The study used a pre-experimental, single group design in which the outcome variable examined was PTSD symptom severity. Symptom severity was operationalized as the participant scores on the total Clinician-Administered PTSD Scale (CAPS) scores (see Appendix C; CAPS Instrument). The intervention was prolonged exposure therapy in the group format of GBET. Although participants in the original study were assessed at pre, post, and six months following treatment, the present study examined two waves of data that were collected at pretreatment and posttreatment because the present study was concerned with treatment effect.

A graphic representation of the research design is as follows:

$$O_1 \quad X \quad O_2$$

In this design, O_1 represents the initial assessment point or pre-test, when the first wave of data were collected. The CAPS was administered in the first interview. Group-Based Exposure Therapy (Intervention) is represented by the symbol X. It should be noted that the 16-18 week intervention is ongoing within the specialized VA program. Wave Two is represented in the model as O_2 . Data here (CAPS) were collected post intervention (within two weeks of each final group).

Data Collection

The secondary data were provided to the researcher within a SPSS database file. The database included participants pre and post test CAPS scores, gender, and age. The other variables in this study were collected thru a computerized chart review of participant's records for injury status, draft status, military branch of service, and months in the war zone. Injury status was verified as related to Posttraumatic Stress Disorder thru review of the trauma narrative in the participant's chart.

Sample

A sample of 102 veterans enrolled in treatment for the initial parent study. This researcher used the CAPS scores of veterans with sufficient data (both pre and post-test scores), and meeting other inclusionary criteria (race as defined per study). The inclusion criteria included valid pre and post CAPS scores (where a sum of the frequency and intensity scores could attain the total score), male veterans with and without combat-related injury, Blacks, and Whites. The exclusion criteria included missing pre and/or post test CAPS scores, and race identified other than Black or White.

Upon applying the inclusionary criteria to the sample, a total of 12 veterans were removed from the sample. There were four veterans removed from the sample, based on race. There was one female veteran removed from the sample. Another four veterans were excluded due to missing CAPS posttest scores. Although a total CAPS score was available, an additional three veterans were excluded due to missing the sum of the frequency and intensity scores on the CAPS. Therefore, the validity of the total scores for three veterans could not be measured. Included in the final sample were veterans with scores for the outcome variable (CAPS) and for whom independent/predictor variables were available. This provided a final N= 90. Mean age

and age range for the total sample was 56.42 (SD= 5.06) and 33-78 yrs. respectively. The sample was all male. In terms of race, the largest group was Black (N= 51), followed by White (N= 39). The final sample included 81 Vietnam veterans, four Gulf War veterans, two Iraq War (OIF) veterans, one Korean War veteran, one veteran in the Korean Demilitarized Zone in 1967, and one veteran on a mission in Haiti (1994-1995).

Secondary Data Analysis

Strengths. Several areas of potential for secondary data analysis were identified in the field of social work (Sales, Fevoia, & Lichtenwaiter, 2006). First, this analysis was completed with an institutionally supported research study on a social problem that offered a quality data source for this social work investigator. The social work investigator was provided full support from the institution (see Appendix D, Letter of Support). Second, access to data archives via computer enhanced the ability to analyze all data sets with computer software. Third, this student's research training is directly transferable to the researcher's post-educational work setting. After program completion, this will result in continued research on this important problem. Finally, the researcher avoided the intrusiveness of data collection and the likelihood of harming a vulnerable population (mentally ill persons) (Sales et al., 2006).

Equally important to note, within the discussion of strengths of secondary analysis, is that the National Institutes of Health (NIH) modified its policy of encouraging data sharing to requiring that applications for large budget research proposals include the plan for data access, storage, and sharing (NIH, 2002). This requirement underscores the importance of secondary data analysis in all research. Additionally, some scientific journals and several professional organizations (e.g., American Psychological Association, American Sociological Association)

encourage and/or require researchers to archive data used for presentations and publications (NIH, 2003).

Limitations. Conversely, a discussion of the limitations of secondary data analysis warrants attention. This researcher was not intimately engaged in the original procedures used for collection and coding of data. This lends to difficulty in assessing any failings, biases, or errors in the process. This researcher was also secondarily informed of the level of training for interviewers and the specifics of information presented to potential participants during recruitment for the parent study. Therefore, interrater reliability was not determined by this researcher (Sales et al., 2006).

A further example of a study limitation was missing data within the database. The researcher could not verify initial responses, and therefore must account for missing data. The range of questions that could be investigated was limited based on the availability of data. Moreover, although secondary data analysis was appealing for accessibility, learning the measures and coding, the nuances of the data files, merging data from different file sets, and manipulation of the large data files required the researcher to acquire training otherwise not required for other types of analyses (Hofferth, 2005; Sales et al., 2006).

In conclusion, the researcher addressed most study limitations. The limitation of not collecting and coding data for accuracy was addressed as the original collection of data included first and second raters for interrater reliability. The limitations of missing data were addressed by excluding scores that could not be verified. Although the range of questions that could be investigated was limited, the researcher thoroughly reviewed the published study concerning questions already addressed with the collected data. The researcher also met with the principal investigator of the original study to discuss sample size, variables of interest, and the benefit of

secondary data analysis. The researcher independently chose questions not addressed by the initial study that would provide insight for future program implementation. This researcher also received guidance from a VA statistician. The statistician provided the data set, feedback, and review of the SPSS analysis. The researcher was responsible for the SPSS analysis with input from the statistician.

The researcher also could have used a larger sample, as the initial field study collected data for an additional 108 veterans. A cross sectional comparison of data could have obtained an N= 210. For the additional 108 veterans, the Posttraumatic Stress Checklist Military Version (PCL-M); Weathers, Litz, Herman, Huska and Keane 1993 was administered in substitution for the CAPS as test administration time impacted the choice of instrument- PCL (requiring approximately 5-10 minutes) and CAPS (requiring approximately 45-60 minutes). Therefore, a valid comparison of scores was severely compromised due to the PCT substituting the CAPS for the PCL-M to measure PTSD symptom severity. As the CAPS is considered the gold standard for measuring PTSD symptom severity, this researcher chose to analyze data where CAPS scores were available. The researcher could not substantiate that total CAPS and total PCL-M scores could equally be compared.

Human Subjects Approval

All participants volunteered for the original study and gave written informed consent prior to the original data collection (see Appendix E; Consent Form). The study was conducted at the Atlanta VA Medical Center. Approval from the Emory Institutional Review Board as well as the Atlanta VA Medical Center's Human Subjects and Research and Development Committee (HSRD) was obtained for the original study. This researcher was also approved as an additional researcher for the ongoing study by the Emory University Institutional Review Board and the

Atlanta VA Medical Center's Human Subjects and Research and Development Committee (HSRD)(see Appendix F; Emory/VA Approval). In addition, this study was approved and overseen by the University of Georgia Institutional Review Board (Project # 2009-10684-0; Appendix G).

Instruments/Selection of Variables

Demographics. The Computerized Patient Record System (CPRS) is the VA's electronic patient medical record system. The veterans had earlier given informed consent for this electronic access. CPRS was used to verify the independent variables: participant's race and injury status, as well as the categorical variables: branch of service, draft status, years in service, and months in war zone. This researcher identified and coded the variables for data input. The data input was checked and re-checked by this researcher. Table 1 demonstrates the variables and coding for data input.

Clinician Administered PTSD Scale. The dependent variable for this study is PTSD symptom severity. PTSD symptom severity was operationalized as the total score on the CAPS. The CAPS is considered the "gold standard" in PTSD assessment (Blake et al., 1995). Developed in 1990 at the National Center for Posttraumatic Stress Disorder, it was designed for administration by clinical researchers and clinicians. However, the CAPS can also be administered by other trained paraprofessionals. The full CAPS can be administered in 45-60 minutes, however, it is unnecessary to administer all parts (e.g., associated symptoms) (Blake et al.). Table 2 presents sample CAPS items.

Table 1

Variables Measured

Variable	Type	Coding
Gender	Categorical	1= Male 2= Female
Race	Independent	1= Black 2= White
Injury	Independent	0= No Injury 1= Injury
Military Branch	Categorical	1= Army 2= Navy 3= Marines 4= Air Force 5= Coast Guard
Injury Type	Categorical	1= Gunshot Injury 2= Head Injury 3= Shrapnel Injury 4= Tinnitus 5= Fire Injury 6=Medical Evacuation 7= Explosive Injury 8= Unknown 9=Other
Draft	Categorical	0= Not Drafted 1=Draft
War Zone	Categorical	1= Vietnam 2=Korean War/DMZ 3=Persian Gulf 4=Iraq War

Table 2

Sample Items on CAPS (NCPTSD, 1990)

Questions	Response Categories
1) How much difficulty did you have recalling important parts of (EVENT)?	0 None 1 Mild, minimal difficulty 2 Moderate, some difficulty, could recall with effort 3 Severe, considerable difficulty, even with effort 4 Extreme, completely unable to recall important aspects of event
2) Have you ever tried to avoid thoughts or feelings about (EVENT)?	0 Never 1 Once or Twice 2 Once or Twice a week 3 Several times a week 4 Daily or almost every day
3) Have you suddenly acted or felt as if (EVENT) were happening again?	0 Never 1 Once or Twice 2 Once or Twice a week 3 Several times a week 4 Daily or almost every day
4) How much effort did you make to avoid(thoughts/feelings/conversations)?	0 None 1 Mild, minimal effort, little or no disruption of activities 2 Moderate, some effort, avoidance definitely present, some disruption of activities 3 Severe, considerable effort, marked avoidance, marked disruption of activities, or involvement in certain activities as avoidant strategy 4 Extreme, drastic attempts at avoidance, unable to continue activities, excessive involvement in certain activities as avoidant state

The CAPS, fundamentally based on the diagnostic criteria initially from the DSM-III R, is now an accurate representation of the criteria in the DSM-IV after undergoing major revisions (Weathers, Keane, & Davidson, 2001). These revisions reflected PTSD criteria changes and formal and informal response from CAPS administrators in a variety of clinical research settings. The revised version of the CAPS assesses all PTSD diagnostic criteria in the DSM-IV. The DSM-IV includes six criterion: Criteria A (exposure to a traumatic event); Criteria B-D are considered core symptom clusters: Criteria B (re-experiencing), Criteria C (persistent avoidance and numbing), and Criteria D (hyperarousal); Criteria E (duration), and Criteria F (functional impairment). The symptoms of guilt and dissociation are also associated with PTSD and assessed by the CAPS (Weathers et al., 2001).

The CAPS is a 30-item structured interview corresponding to the DSM-IV criteria for PTSD. The CAPS can be used to determine a lifetime (chronic) diagnosis of PTSD as well as assess symptoms over the past week or month. A further function of the CAPS is that the items also reveal the influence of PTSD symptoms on social and occupational functioning; any symptom improvement post a former CAPS administration; overall PTSD severity and response validity; and frequency and intensity of associated symptoms including survivor guilt, self-reproach over supposed wrongdoing, gaps in awareness, derealization, and depersonalization (Blake et al., 1995). The CAPS instrument was formulated with standardized questions and probes for each item. CAPS items can also reference no more than three traumatic stressors. The Life Events Checklist is used for identification of experienced traumatic stressors to meet Criteria A (Blake et al.).

Although scoring rules may differ, the most frequently used is counting a symptom present if there is a frequency of 1 or more and an intensity of 2 or more (Blake et al., 1995). The

diagnosis of PTSD is given when there are at least 3 “C” symptoms, 2 “D” symptoms, and 1 “B” symptom, while other diagnostic criteria is also met (Blake et al.). The sum of the frequency and intensity ratings for each symptom are calculated to attain the severity score (Blake et al.).

The CAPS has a number of features that enhance reliability and validity of the assessment (Weathers et al., 2001). First, the CAPS can be used as a continuous measure of PTSD symptom severity or as a dichotomous (present/absent) diagnostic measure. Second, the CAPS permits flexibility in scoring, allowing users to focus on frequency, intensity, or severity ratings for the PTSD syndrome, the three symptom clusters, or for individual symptoms of PTSD. Third, the CAPS includes prompt questions and rating scale anchors that promote uniformity in administration and scoring. This includes initial prompt questions as well as follow-up prompts that anticipate points of confusion and ambiguity regarding PTSD criteria. These enhanced features ensure comparability of scores and standardization across interviewers. Fourth, the CAPS includes all diagnostic criteria for PTSD (Weathers et al.).

Weathers et al. (2001) reviewed the concept of validity. They posit that validation of the CAPS should focus on the evidence that CAPS scores reflect severity of PTSD symptoms for the syndrome as a whole and for symptom clusters and individual symptoms. The CAPS is also valid as the diagnosis also reflects the presence or absence of PTSD.

Psychometric analyses. This section provides psychometric analyses for the standardized measure used for the dependent variable (CAPS). Several psychometric investigations have focused on the CAPS. In a pilot study reporting the initial psychometric data on the CAPS, Blake et al., 1990, administered several instruments to 25 male combat veterans. The instruments used were the CAPS, the Combat Exposure Scale (Keane et al., 1989), the Keane PTSD Scale (PK

Scale) of the MMPI (Keane, Malloy, & Fairbank, 1984), and the Mississippi Scale for Combat-Related PTSD (Keane, Caddell, & Taylor, 1988).

The CAPS was also measured for interrater reliability using a second rater for observation and rating of seven interviews. Exceptional agreement was found between the two raters, with reliability coefficients for scoring on the three symptom clusters ranging from .92 to .99. The raters also displayed exact diagnostic agreement for all seven participants. The internal consistency for all three PTSD symptom clusters had alpha coefficients ranging from .73 to .85. Because interrater reliability was established, there can be confidence in the administration of the CAPS by different researchers during the parent study.

In addition, internal consistency was also found by Hovens et al. (1994). For all 17 core PTSD symptoms, the internal consistency was .89. They also found alphas of .63 for re-experiencing, .78 for avoidance and numbing, and .79 for hyperarousal. Weathers et al. (2001) also investigated the CAPS for assessing older combat veterans. Participants were 125 male World War II and Korean combat veterans. They found that the CAPS had 90% sensitivity, 95% specificity, and 93% efficiency, and a kappa of .75. Internal consistency had alphas of .88 for re-experiencing, .87 for avoidance and numbing, .88 for hyperarousal, and .95 for all 17 core items. Overall, the CAPS has been established to be psychometrically sound for clinical and research applications in the field of traumatic stress.

Furthermore, since its development, the CAPS structured interview has become widely used for diagnosing and measuring the severity of PTSD (Weathers et al., 2001; Elhai, Gray, Kashdan, & Franklin, 2005). Although the CAPS was initially validated on combat veterans, it has now been successfully used with a variety of traumatized populations. It also has excellent reliability with consistent scores across raters and items (Weathers et al.). Regarding validity, the

overwhelming evidence of content validity is based on its development and revision by experts in the field of traumatic stress and its direct correspondence with the DSM-IV diagnostic criteria for PTSD (Weathers et al.). In sum, the CAPS has diagnostic utility, convergent and discriminant validity, and demonstrates sensitivity to clinical change (Weathers et al.).

The reliability of the CAPS was analyzed for this study. Although the CAPS was validated with a population of veterans, the test-retest reliability for this study was $\alpha = .450$. This researcher found alphas of .387 for avoidance/numbing, .488 for reexperiencing, and .458 for hyperarousal. The reliability of the CAPS for this study appeared moderate when compared to past studies using the CAPS. It is important to note that the CAPS was not originally validated with a racially diverse sample (primarily White men). Also, there is a dearth of literature on the reliability of the CAPS with Black participants. Keane, Koulpek, and Weathers (1996) suggested similar psychometric properties for Black and White participants on the CAPS.

Research Questions and Hypotheses

This study explored the use of group-based exposure therapy in a convenience sample of U.S. combat veterans diagnosed with PTSD and being treated at the VA Medical Center in Atlanta, Georgia. To accomplish this end, the following research questions guided the study:

1. What effect does combat-related injury have on PTSD symptom severity following group-based exposure therapy?

It was hypothesized that group-based exposure therapy would be less effective in reducing symptoms of PTSD in veterans with combat-related injury than in non-injured combat veterans.

2. Are there racial differences in the effect of group-based exposure therapy among veterans with a combat-related injury?

It was hypothesized that group-based exposure therapy would be more effective in reducing symptoms of PTSD in White veterans with combat-related injury than in Black veterans with combat-related injury.

Statistical Method

Power Analysis

The power of statistical tests remains crucial in the behavioral sciences. The power of a statistical test refers to the probability that the null hypothesis (H_0) will be rejected given that it is false. Statistical tests without the appropriate power cannot discriminate between the null hypothesis (H_0) and the alternate hypothesis (H_1). The power estimates were calculated using *G*Power 3* software (Faul, Erdfelder, Lang, & Buchner, 2007). *G*Power* was created in 1996 as a stand alone power analysis for statistical tests often used in behavioral and social research. An a priori power analysis was conducted. In this type of analysis, the appropriate sample size was computed as a function of the required power level ($1-\beta$), the standard significance of level $\alpha=.05$, and the suggested medium population effect size (.25) for the test used (Faul et al., 2007; see Exhibit 3). *G*Power* software suggests small, medium, and large effect sizes for specific tests. A medium effect size was chosen because it represents the average size of effects in various fields of study (Connelly, 2008). This is especially important if there is no significance, as the power estimate will inform the researcher of the chances of finding a significant difference should one exist. As evidenced in Exhibit 3, the minimum sample size for the power estimate of .90 was $N=72$.

Exhibit 3. *G*Power3 Results (Faul, Erdfelder, Lang, & Buchner, 2007) copied with permission*

F tests - ANOVA: Repeated measures, within-between interaction

Analysis:	A priori: Compute required sample size		
Input:	Effect size f	=	0.25
	α err prob	=	0.05
	Power (1- β err prob)	=	0.90
	Number of groups	=	6
	Repetitions	=	2
	Corr among rep measures	=	0.5
Output:	Nonsphericity correction ϵ	=	1
	Noncentrality parameter λ	=	18.0000000
	Critical F	=	2.3538090
	Numerator df	=	5.0000000
	Denominator df	=	66.0000000
	Total sample size	=	72
	Actual power	=	0.9017951

The final sample for this study includes 90 veterans. Although the principal investigators of the parent study collected data on an additional 108 veterans, the outcome measure (CAPS) was completely replaced by the Posttraumatic Stress Disorder Checklist (PCL-M). For these additional groups, the PCL-M was administered in substitution for the CAPS as test administration time impacted the choice of instrument, PCL (requiring approximately 10 minutes) and CAPS (requiring about 60 minutes). It was determined that although the instruments both measure PTSD severity, the scoring, subscales, and scale items were too diverse for comparability. In addition, the CAPS is clinician administered, while the PCL-M is a self-report survey.

Due to limited CAPS data, all available data was used as an effort to enhance the ability to detect any statistically significant differences in the variable of interest (CAPS total scores). Of the 90 veterans in the sample, 37 (41%) had been injured, and 53 (59%) had not experienced any combat related injuries. In regards to attrition, CAPS total scores were available at baseline

and posttreatment for 100% of the sample (N= 90). Descriptive statistics also summarize the sociodemographic information.

Mixed Design ANOVA

The method of analysis utilized was the Mixed Design ANOVA. The software used to run the analysis was SPSS for Windows, version 17. The researcher chose the ANOVA given that the independent variables were categorical and the dependent variable was continuous. The term “mixed design ANOVA” can be used to describe the inclusion of a variety of different combinations of independent variables. In this study, it is used to imply a repeated measures model that also includes a factor variable.

To distinguish the different roles of the variables, the repeated measures factor is referred to as a “within-subjects” factor, while the factor comparing groups or categories is the “between-subjects” factor. Specifically, the analysis will review how the between-subjects factor affects, or interacts with, the within-subjects factor (the repeated measures factor). The ANOVA is appropriate when testing variables within a limited set of hypotheses (Lipsey & Wilson, 2001). The first hypothesis was that group-based exposure therapy would be less effective in reducing symptoms of PTSD in veterans with combat-related injury than in non-injured combat veterans. Likewise, the second hypothesis was that group-based exposure therapy would be more effective in reducing symptoms of PTSD in White veterans with combat-related injury than in Black veterans with combat-related injury. Both hypotheses were analyzed with time (pre-treatment CAPS and post-treatment CAPS) being the within subjects independent variable, injury being one between subjects independent variable, and race being the other between subjects independent variable. This is considered a 2x2x2 interaction.

In combining repeated measures ANOVA and factorial ANOVA, the researcher was required to satisfy the requirements and assumptions of both: Mixed design analysis of variance requires that the repeated measure variables be interval level and the between-subject factor be any level that defines groups (dichotomous, nominal, ordinal, or grouped interval) (Demidenko, 2004). There is also a minimum sample size both for the total number of subjects ($10 +$ the number of time periods making up the within-subjects factor) and the minimum number in each cell (Demidenko, 2004). Furthermore, there was an assumption of normality for the repeated measures, an assumption of sphericity for the within-subjects factor for the repeated measures, and the assumption of homogeneity of variance for the between-subjects factor. The results of these assumptions are discussed in Chapter 4.

Missing values. When all but a few respondents responded to every item, the use of listwise deletion was appropriate. Seven cases with missing data (posttest scores) were omitted and analysis run on remaining data. This was completed with no bias to the remaining sample. Listwise deletion has important advantages when it does not cause a substantial decrease in the available sample size for the analysis. Assuming that missing data is completely at random, it leads to unbiased parameter estimates. There are sometimes grounds for treating missing data as one of the available responses. A third option is to yield interpretation of meaning after a careful analysis of the data. In this study, listwise deletion did not significantly reduce the sample size. Rubin and Babbie (1997) suggested that the choice of particular method used for missing data depends on the research situation.

Cases included in the final sample were first chosen using the inclusionary and exclusionary criteria. All Black and White veterans with pre and post scores on the CAPS were included in the sample (4 Hispanic participants excluded, 1 female excluded, and 7 veterans

excluded with missing scores). The database was reviewed to assure there were no significant missing values in the remaining cases. Other values that were not significant such as draft status and months in war zone were acknowledged as missing for a number of cases. Rubin and Babbie (1997) suggested that the choice of particular method used for missing data depends on the research situation.

Summary

This chapter provided information on the sample, measures, and analysis used in this study. The rationale for the analysis was also explained. The following chapter, Chapter 4, presents the results of the analysis.

CHAPTER 4

Results

This study's statistical analysis was conducted using SPSS version 17.0. First, descriptive statistics summarized demographic characteristics including veterans' age, gender, race and injury status, branch of service, draft status, months in war zone, and type of injury. Second, a mixed design ANOVA was conducted to determine whether race and injury had any effect on treatment outcome.

Descriptive Statistics

Descriptive statistics summarized the frequency of veteran's sociodemographic characteristics and military status. First, descriptives are presented according to injured and non-injured status. Next, descriptives are presented according to race.

Sample Characteristics According to Injured and Non-Injured Status

Table 3 presents demographic information regarding the participants according to injured and non-injured status. The military branches of service represented included: Army 68 (76%), Navy 3 (3%), Marines 16 (18%), Air Force 2 (2%), and Coast Guard 1 (1%). There were 37 (41%) injured veterans and 53 (59%) non-injured veterans. Table 3 compares injured and non-injured veterans on age, race, military branch of service, months in the war zone, and Purple Heart receipt. The sample was 100% male, which was expected in this population with 81 Vietnam veterans, four Gulf War veterans, two Iraq War (OIF) veterans, one Korean War veteran, one veteran in the Korean Demilitarized Zone in 1967, and one veteran on a mission in Haiti (1994-1995). The large number of male veterans in this sample is relative to the number of

Table 3

Sample Characteristics According to Injured and Non-injured Status

Variables	Injured Combat Veterans	Non-injured Combat Veterans
Age		
33-49	3 (3.3%)	2 (2.2%)
50-64	33 (36.7%)	51 (56.7%)
65+ older	1 (1.1%)	0 (0%)
Race		
Black	17 (19%)	34 (37%)
White	20 (22%)	19 (22%)
Military Branch of Service		
Army	27 (30%)	41 (45.6%)
Navy	1 (1.1%)	3 (3.3%)
Marines	8 (8.9%)	7 (7.8%)
Air Force	1 (1.1%)	1 (1.1%)
Coast Guard	0 (0%)	1 (1.1%)
Months in Combat Zone		
2-10 mos.	8 (8.9%)	6 (6.7%)
11-18 mos.	40 (44.4%)	20 (22.2%)
19-24 mos.	8 (8.9%)	6 (6.7%)
25+	0 (0%)	1 (1.1%)
		*
Purple Heart Recipients	17 (18.9%)	0

* = Missing Data

male and female veterans in the general population, with 23 million male veterans and 1,824,198 female veterans in the United States and Puerto Rico, (Department of Veteran's Affairs, 2009a).

The age categories of the injured and non-injured veterans resulted in the majority of veterans falling between ages 50-64, with 33 (36.7%) being injured, and 51 (56.7%) being non-injured. The injured Black veterans totaled 17 (46%) with injured White veterans at 20 (54%). The majority of veterans (75.6%) in both injured and non-injured categories were enlisted in the Army, with 27 (30%) injured veterans, and 41 (45.6%) non-injured veterans. The majority of veterans fell into the 11-18 month category for months in the war zone. The injured veterans serving 11-18 mos. in the combat zone were 40 (44%) and the non-injured vets were 20 (22%). This is comparable to the average deployment of 12-18 mos. for U.S. Military Branches (IOM, 2008). There was a smaller percentage of veterans who served for 2-10 mos., with 8 (8.9%) injured veterans, and 7 (7.8%) non-injured veterans. Veterans who served between 19-24 mos., were 8 (8.9%) injured and 6 (6.7%) non-injured. There was one veteran serving over 25 months in a combat zone. The combat zones included in this sample: Vietnam War, Gulf War, Iraq War, Korean War, and DMZ. The Purple Heart recipients equaled 17 (18.9%) of the 37 veterans injured in combat. Figure 1 provides descriptive information on the types of injuries suffered by veterans in this sample. Injuries were divided into nine categories. The categories included: gunshot wound, head injury, shrapnel injury, tinnitus, fire injury, medical evacuation, explosion, unknown, and other (e.g., back, neck, hip injury).

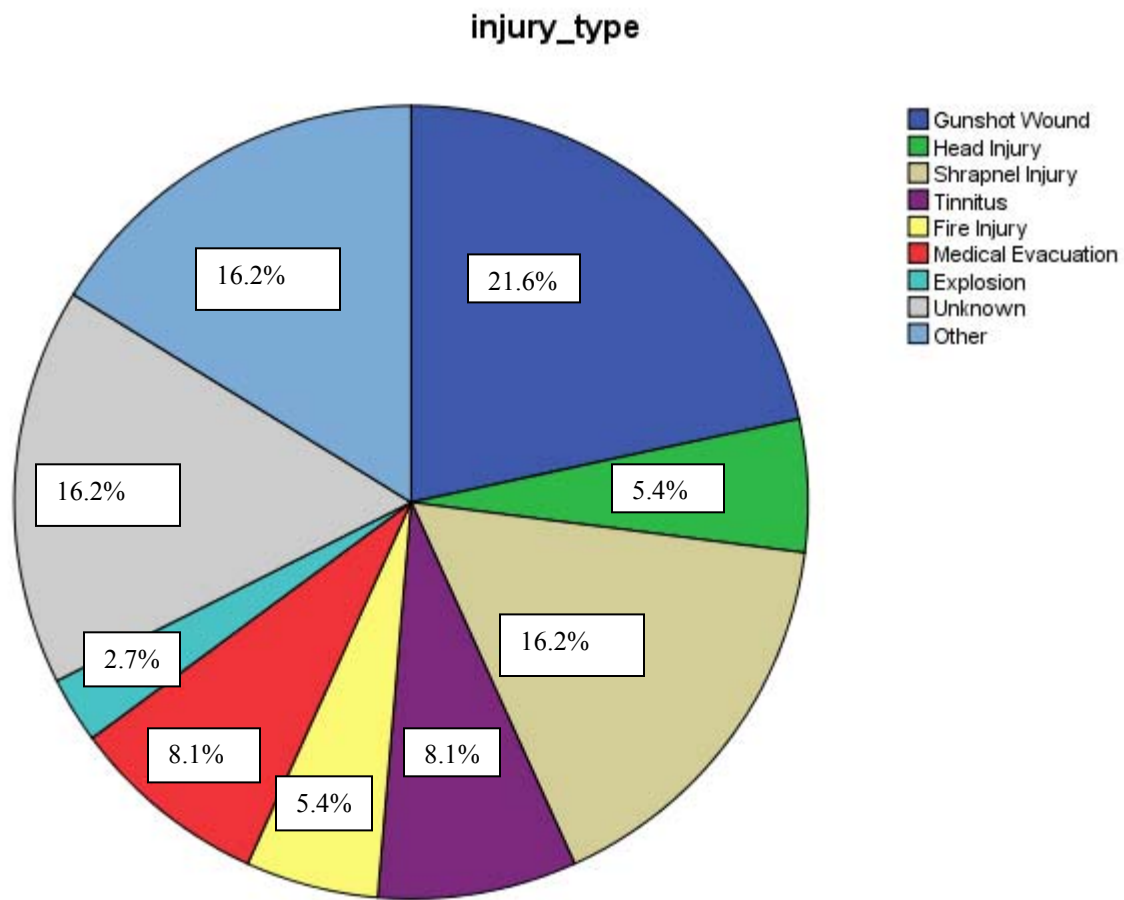


Figure 1. Injury Type

Sample Characteristics According to Race

Table 4 presents participant demographic information according to race as this study examined the relationship between injury, race, and treatment outcome. The table compares Black and White veterans on age, military branch of service, months in the war zone, and Purple Heart receipt. There were 51 Blacks (57%) and 39 Whites (43%). The age categories of the Black and White veterans resulted in the majority of veterans (92.2%) falling between ages 50-

Table 4

Sample Characteristics According to Race

Variables	Black Combat Veterans	White Combat Veterans
Age		
33-49	4 (4.5%)	1 (1.1%)
50-64	45 (50%)	38 (42.2%)
65+ older	1 (1.1%)	1 (1.1%)
Military Branch of Service		
Army	38 (42.2%)	30 (33.3%)
Navy	3 (3.3%)	1 (1.1%)
Marines	9 (10%)	6 (6.7%)
Air Force	1 (1.1%)	1 (1.1%)
Coast Guard	0 (0%)	1 (1.1%)
Months in War Zone		
2-10 mos.	9 (10%)	5 (5.6%)
11-18 mos.	36 (40%)	24 (26.7%)
19-24 mos.	6 (6.7%)	8 (8.9%)
25+	0 (0%)	1 (1.1%)
		*
Purple Heart Recipient	7 (41.2%)	10 (58.8%)

* = Missing Data

64, with 45 (50%) being Black and 38 (42%) being White. The majority of veterans (76%) in both Black and White categories were enlisted in the Army, with 38 (42.2%) Black veterans, and 30 (33.3%) White veterans. The Army, as a military branch of service, holds the largest number of enlistees and veterans. As of September 30, 2009, the total population of U.S. veterans was 10,158,007 Army veterans, 5,208,470 Navy veterans, 4,200,216 Air Force veterans, and 2,426,332 Marine veterans (Department of Veterans Affairs, 2009b). Black veterans were 2,596,869 compared to 18,302,454 White veterans (Department of Veterans Affairs, 2009b). The majority of veterans (67%) fell into the 11-18 month category for months in the war zone. The Black veterans serving 11-18 mos. in the war zone were 36 (40%) and the White veterans were 24 (26.7%). The Purple Heart recipients equaled 17 total recipients, with 7 (41.2%) Black and 10 (58.8%) White recipients. As the Purple Heart is the official honor for wounded combat veterans, the total number of recipients is less than 50% of the total wounded (17 of 37). The Purple Heart distinction was awarded to less than 50% (7 out of 17) of the combat-injured Black veterans.

Mixed Design ANOVA

This study examined the relationship between injury, race, and treatment effect. The first hypothesis was that group-based exposure therapy would be less effective in reducing symptoms of PTSD in veterans with combat-related injury than in non-injured combat veterans. Likewise, the second hypothesis was that group-based exposure therapy would be more effective in reducing symptoms of PTSD in White veterans with combat-related injury than in Black veterans with combat-related injury. To examine veterans' treatment outcome with the injury and race interaction, a 2 (time: pre-treatment CAPS and post-treatment CAPS) x 2 (injury status: injured and non-injured) x 2 (race: Black or White) mixed design ANOVA was conducted, with PTSD Posttreatment Scores (CAPS) as the dependent variable. The interaction with time (pre-

treatment CAPS and post-treatment CAPS) was the within subjects independent variable. The between subjects independent variables were both injury status and race. The ANOVA yielded a main effect for time that was significant ($F(1, 89) = 137.46, p < .05; p = .000$). However, the ANOVA did not yield a significant interaction effect between time, injury, and race ($F(1, 87) = .158, p > .05, p = .692$). This means there was no significant interaction between time, injury, and race on treatment outcome. Contrary to expectations, the three-way interaction for time, injury, and race was not significant. These results suggest that treatment outcome is not effected by injury or race. Therefore, injury status (being injured or not) does not effect treatment outcome (does not make it more difficult or easier to treat). Also, race did not effect treatment outcome. There was no significant difference from pre to post test scores based on veterans' race. In other words, there was no identified disparity in treatment; both Blacks and Whites had the same effect of symptom severity being reduced.

The mean score at pre-test was $M = 90.13$ ($SD = 15.30$) and the mean at posttest was $M = 61.40$ ($SD = 23.99$). The CAPS score which indicates a diagnosis of PTSD is 50. Although participants had a mean score of 61.40 ($SD = 23.99$) at posttest, Schnurr, Friedman, Lavori, & Hsieh (2001) suggest that any CAPS score decrease by at least 10 points is significant. Participants, on average, reduced their scores by approximately 30 points. Because there was no significance found, post hoc comparison tests were not required.

In addition, three assumptions needed to be met for the ANOVA: 1) assumption of normality for the repeated measures, 2) assumption of sphericity for the within-subjects factor for the repeated measures, and 3) assumption of homogeneity of variance for the between-subjects factor (Demidenko, 2004). The assumption of normality was tested with the Kolmogorov-Smirnov (K-S) test. The K-S test indicated the sample was normal with a

significance value for both repeated measures (.728 for the pretest scores and .986 for the posttest scores). The large significance value indicates that the distribution of the CAPS scores does not differ significantly from the normal (George & Mallery, 2008).

The assumption of sphericity relates to the equality of the variances of the differences between levels of the repeated measures factor. Sphericity requires that variances for each set of difference scores are equal. SPSS corrects for violations of sphericity (George & Mallery, 2008). As SPSS offers several corrections to the violation, Greenhouse-Geiser is the most conservative. As sphericity was not met, the Greenhouse-Geiser correction was automatically reported, which changes the degrees of freedom. Sphericity is the assumption of an ANOVA with a repeated measures factor.

Finally, homogeneity of variance was tested with Levene's test statistic. The Levene's test statistic for the pretest was .001, $p = .970$ and 1.006, $p = .312$ for the posttest. There is no reason to assume unequal variances. Descriptive statistics also indicate normality with the Kurtosis and Skewness statistics. The Kurtosis for the pretest scores was -.115, and -.066 for the posttest scores. The Skewness for the pretest scores was -.540 and -.064 for the posttest scores. Kurtosis and Skewness between ± 1 is excellent, while ± 2 is acceptable (George & Mallery, 2008).

Although the study found no significant results, the implication is that group-based exposure therapy might be an effective treatment for veterans with or without combat injury, and regardless to race. A further review of implications is warranted. For this purpose, a discussion of the study findings and implications for social work practice, research, and policy are provided in Chapter 5.

CHAPTER 5

Discussion

The purpose of the study was to explore the effectiveness of prolonged exposure therapy in reducing symptoms of PTSD in Black and White injured vs. non-injured U.S. combat veterans. The study method was a secondary data analysis from data conducted from a larger study entitled, *Field Test of Group Based Exposure Therapy with 102 Veterans with War-Related Posttraumatic Stress Disorder*. As the title implies, this parent study involved veterans participating in group-based exposure therapy (Ready et al., 2008). This final chapter will discuss the findings of the current study in relation to the literature, and provide implications for social work practice, policy, and research.

Significance of the Study

At the beginning of this study, the potential for four significant outcomes was identified. First, the researcher surmised that the study might demonstrate that veterans without combat-related injury and PTSD have a greater chance of treatment success with group-based exposure therapy. Although the study found no significant effect of combat-related injury on treatment outcome, this finding enables mental health professionals to prepare appropriate service delivery for injured and non-injured veterans anticipated to return home from the Iraq and Afghanistan wars (Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF)). The Department of Defense has announced an expected 4000 deployed soldiers returning to the southeast region by January, 2010 with 2000 returning to the state of Georgia. In an effort to serve returning combat veterans, The U.S. Congress enacted a law exempting OEF/OIF combat veterans from

the eligibility requirement for VA healthcare (Department of Veterans Affairs, 2009a). As a result, OEF/OIF combat veterans can receive unlimited access to all VA healthcare resources for up to 5 yrs. post deployment. The PCT as well as other VA mental health departments should prepare by training staff to implement group-based exposure therapy (GBET) for combat veterans diagnosed with PTSD. VA facilities must also identify adequate physical space for programming. According to Fischer (2009), as of March 20, 2009, 43,779 military service members were diagnosed with traumatic brain injury (TBI) between 2003 and 2007. Another 39,365 were diagnosed with PTSD. As of February 2009, 10,937 soldiers were wounded in action and required medical evacuation (Fischer, 2009). Consequently, these soldiers will increasingly seek treatment services at VA Medical Centers. GBET could be used as an early intervention strategy for injured or non-injured soldiers returning from war.

Second, within this study, injury and race were not predictors of treatment outcome with GBET. The GBET program was developed by Atlanta VA clinicians for veterans receiving treatment within the posttraumatic clinical team. GBET has been their primary mode of treatment for the past four years. Again, as the findings indicated that injury and race did not have a significant effect on outcome, this treatment might prove effective with a racially diverse group of veterans. The results suggested that this approach might be successful with veterans with combat-related PTSD, injured or non-injured, Black or White. Furthermore, social workers must be able to identify, create, and utilize empirically based, evidence-driven practices to ensure veterans have the opportunity to benefit from sound treatment. As more veterans are returning from Iraq and Afghanistan, and more Vietnam veterans are being diagnosed with PTSD (Pyszczynski, Solomon, & Greenberg, 2003), information regarding the effect of PTSD and treatment efficacy is of the utmost importance.

Data from this study offers new information to VA mental health providers (e.g., social workers, psychiatrists, psychologists, etc.), the Veterans Health Administration (VHA) and community Vet Centers to assist in developing effective treatments for injured and non-injured combat veterans. The results indicated that GBET in its current form has a significant effect on PTSD symptom reduction. As GBET is a manualized program, it could easily be replicated nationally in other VA Medical Centers and community Vet Centers.

Third, this study identified race as a possible indicator of treatment outcome. To this end, the National Association of Social Workers (NASW) Code of Ethics (*NASW Code of Ethics*, 1999) addresses social workers in the areas of cultural competency and diversity, integrity of the profession, and evaluation and research: “Social workers should have a knowledge base of their clients’ cultures and be able to demonstrate competence in the provision of services that are sensitive to clients’ cultures and to the differences among people and cultural groups” (1.05b). Although race was not an indicator of treatment outcome, clinicians must still review cultural competency and cultural sensitivity practices. Clinicians would need more information regarding perceptions of treatment outcome, based on race.

Finally, the current study drew upon recommendations outlined in the National Health Disparities Report (NHDR) (AHRQ, 2006) and the Evidence Synthesis Pilot Project (ESP) (VA HSR&D, 2007) which both acknowledged the relevance of continually addressing health care disparities in research. These reports recommended that disparities be tracked to determine the extent that healthcare providers and facilities provide evidence-based treatments, and that outcome studies explore the potential source of the health disparities within the VA system. To this end, this study presents valuable information related to health disparities within the VA system. At present, the available literature does not adequately address health disparities within a

specialized VA PTSD program (Ready et al., 2008). As the study did not support the evidence of any health disparities, this can be encouraging for other researchers to explore within their studies. In brief, this study examined combat-related PTSD, combat-related injury, and the effects of race on treatment outcome. This examination began with the identification of demographic data and the significance thereof.

Demographics of Study Participants

The demographics of the study participants are described in terms of age, race, gender and branch of service. First, the age range of the veterans in the study was 33-78, with the majority of veterans falling into the age 50-64 category (93%). This is not surprising considering that the vast majority of the veterans (90%) served in the Vietnam War (1961-1975). As more U.S. soldiers serving in Afghanistan (Operation Enduring Freedom- OEF) and Iraq (Operation Iraqi Freedom- OIF) enroll in treatment, the age range is expected to shift toward the 33-49 category.

Second, the racial breakdown of the veterans involved in this study was 57% Black and 43% White. At the Atlanta VAMC, the 2007 demographics showed 7,343 (42%) Black veterans versus 9,906 (58%) White veterans served (Department of Veterans Affairs, 2009b). There was insufficient data available on other racial/ethnic categories.

Third, in terms of gender, all of the veterans included in this study were male. The ratio of men to women being served at the Atlanta VA is 8:1 (Department of Veterans Affairs, 2009b). This researcher excluded the only female initially included in the sample. The absence of female participants in this study is not surprising considering that the majority of the sample was comprised of Vietnam veterans. During that era, approximately 2% of enlisted personnel were women, compared to 14% enlisted at the time of this study. At the time of this study, there are no

accurate records of women serving in Vietnam, but the largest known group (over 6000) served as nurses (Clemmitt, 2009). Although the military has an official policy that women do not participate in *direct (physical)* combat, women increasingly play significant roles in combat zones, placing them in harm's way for physical and mental injuries (Clemmitt, 2009). These changing demographics for women with combat exposure support the need for research on women and combat-related PTSD. There is not much known about women and combat-related PTSD. In relationship to women and PTSD, the literature has focused on physically and sexually abused women. However, research on PTSD and gender indicates significant differences in the diagnosis of PTSD in the general public (Brady, 2001; Kessler, Chiu, Demler, Merikangas, & Walters, 2005).

Finally, of the five branches of the military, the study sample was 76% Army veterans. Again, this is not surprising because the majority of the study participants were Vietnam veterans and the Army had the most soldiers in this conflict. The United States Army is the primary ground-force of the United States. The Army's main function is to protect and defend the United States (and its interests) by way of ground troops, armor (tanks), artillery, attack helicopters, and tactical nuclear weapons, etc. (DOD, 2009). Surprisingly, there was insufficient data to examine any differences between veterans drafted into service or voluntarily enlisted. The original study did not document draft status in each veteran's record. The study only identified five veterans as being drafted into service, while no documentation on draft status was identified for the rest of the study participants. The documentation of differences (if any) based on draft status may have offered another area for further research inquiry.

Variables Under Investigation

Combat-Related Injury

This study underscored the need for continued research on combat-related injury, combat-related PTSD, and mental health disparities. The first hypothesis was that group-based exposure therapy would be less effective in reducing symptoms of PTSD in veterans with combat-related injury than in non-injured combat veterans. The study found no statistically significant effect of combat-related injury on PTSD symptoms. This finding was not consistent with several findings that injured persons with PTSD have compounded feelings of fear and anxiety and are more difficult to treat (Grieger et al., 2006; Hoge, Auchterlonie, & Milliken, 2006; & Koren et al., 2005).

Furthermore, this study yielded important results despite the lack of statistical significance found in the ANOVA test. This study sought to determine whether combat-related injury affected the outcome on PTSD symptoms. As this study found there was no significant effect, it appears that the GBET treatment might be an effective form of intervention, regardless of injury status. In other words, injury did not effect treatment outcome. Moreover, within this sample, the injured and non-injured veterans both had similar mean scores at pretest, $M = 89.91$, $SD = 15.8$ and $M = 91.22$, $SD = 14.98$, respectively. Clearly, this study demonstrates veterans without physical injury experience severe psychological disturbances as evidenced by their pretest scores. In contrast, another study found that injured veterans scored significantly higher on all clinical PTSD scales (including the CAPS) than the non-injured veterans (Koren et al., 2005).

Although the literature supports that the degree of the trauma in terms of injury or fatality (Gireli, Resick, Marhoefer-Dvorak & Hutter, 1986; Kilpatrick et al., 1989; Resick, 1986 as cited

in Hembree et al., 2004) is a predictor for the development of chronic PTSD, this study did not explore the likelihood of PTSD development, based on injury. The focus of this study was on injury status rather than injury type or severity. For the veterans who were injured, the injuries categorized by this researcher included: gunshot wound, head injury, shrapnel injury, tinnitus, fire injury, medical evacuation, explosion, unknown injury, and other (e.g., back, neck, hip injury). As shown previously, in Figure 1, gunshot wounds were the most prevalent (21.6%) type of injury, followed by shrapnel injury and explosion (16.2%). This sample included 8.1% of veterans who were medically evacuated, suggesting that the soldier's injury was severe enough to be removed from combat.

As the majority of this sample served in the Vietnam War, their injuries were compared to the injuries of other Vietnam War veterans along with the injuries of veterans serving in the present OEF/OIF Wars. To illustrate this, approximately 153,303 service personnel were seriously wounded in Vietnam. During this war, 12 to 14 percent of all combat casualties had a brain injury, while 2 to 4 percent had a lethal wound to the chest or abdomen, in addition to the brain injury (Okie, 2005). During the Vietnam War, injured soldiers could wait up to 45 days for transport from combat operation areas to the United States. Conversely, an injured soldier from the present OEF/OIF War could be transported to the United States within 3 days of the original event (Okie, 2005). This researcher speculates that the length of time awaiting transport might have affected PTSD development or symptoms for Vietnam veterans.

Compared to the Vietnam War injuries, the present OEF/OIF Wars have witnessed the improvised explosive device (IED) as the primary cause of injury (Cox, 2006). An understanding of the injuries of the present war is critical to prepare for treatment of the returning veterans. The most prevalent type of injury in these recent wars has been traumatic brain injury (TBI). A recent

study found that 50% of Iraq combat veterans with TBI also had co-occurring PTSD (Hoge et al., 2008). According to the Department of Defense, as of 2006, there were 46,137 combat and non-combat military injuries treated in Operation Iraqi Freedom (Cox, 2006). Approximately, 31,122 out of the 46,137 injured military personnel had injuries or illnesses serious enough to require air transport off the battlefield (Okie, 2005).

These estimates offer insight into the importance of acknowledging the prevalent types of injuries among OEF/OIF combat veterans. An important point is that unlike the Vietnam War, more soldiers now survive after injury. In Iraq, for every one soldier killed there are 16 wounded (Okie, 2005). This decreased mortality rate has been attributed to better protective gear and better medical technology. However, as the mortality rate decreases, more veterans are likely to return with injuries requiring extensive care (Okie, 2005).

Race

The second hypothesis was that group-based exposure therapy would be more effective in reducing symptoms of PTSD in White veterans with combat-related injury than in Black veterans with combat-related injury. Again, the ANOVA results yielded no statistically significant results to indicate that race had an effect on treatment outcome. However, the initial results demonstrating no significant difference in treatment outcome based on race, is an important finding, requiring further review. The absence of disparity could be positive reinforcement to continue treatment without any cultural modifications to the treatment. This researcher would be hesitant to assert such a claim based on one study. The gathering of more data to support the non-existence of a disparity is critical.

With this in mind, the researcher provided support from the literature on the existence of health disparities as a significant issue for persons of color. The second hypothesis was

supported by several studies that reported serious disparities in healthcare and health outcomes among racial and ethnic minorities (Blendon et al., 2007). The researcher suggests that health outcomes do not only encompass whether an individual improved on a clinical measure for symptomatology. While it was compelling to identify Black veterans had no significant difference in treatment outcomes than White veterans, the researcher understands that experiences and perceptions of health disparities could not be attained through this secondary data analysis.

To illustrate this, the Psychosocial Stress Model (Clark, Anderson, Clark, & Williams, 1999) was revisited. This model focuses on racism at the interpersonal and institutional level. An advantage of this model is that it integrates the experiences of Blacks and considers how their unique experiences lead to stressors that are associated with health and disease (Dressler, Oths, & Gravlee, 2005). Social work practice is built on viewing the "person in environment". Social workers have also addressed the unique experiences of Black persons in their social environment (See, 2007). Likewise, social workers at the VA utilize psychosocial assessments in all inpatient and outpatient areas of the hospital. The Psychosocial Stress Model should be applied when working with veterans of color. This model acknowledges that unique experiences due to race can lead to psychosocial stressors. However, this study did not explore the experiences of Blacks and the possible association with health and disease. Questions that remain are: 1) What are Black veterans perceptions of VA healthcare?; 2) Do Black veterans perceive greater difficulty readjusting to civilian life upon deployment than White veterans?; 3) How do Black and White veterans compare on maintenance of symptom reduction?

An example of health disparities was found in the U.S. Surgeon General's report which identified an explanation of health disparities that was of interest in this study (USDHHS, 2001).

The explanation that cultural and social factors contribute to the causation of mental illness, and the contribution varies by disorder, could not be determined by this study. This researcher identified that treatment outcome does not establish the role of cultural and social factors and the contribution to PTSD. As previously mentioned, the majority of the sample was Vietnam veterans. The social implications of that era of war cannot be denied. Vietnam era veterans have consistently discussed the response they received when returning from combat. In addition to being called "baby killers", many reported being spat upon and not receiving a hero's welcome. Although Black and White Vietnam Veterans reported similar readjustment difficulties, Black veterans also identify returning home during the civil rights movement, to much civil unrest. They often report that being a Black Vietnam veteran had significant consequences, affecting housing, employment, and access to healthcare (Dohrenwend, Turner, Turse, Lewis-Fernandez, & Yager, 2008).

Although this study identified no significant interaction between race and treatment outcome, the study data were incomplete for socioeconomic status (SES), which might have offered more comparative data. In particular, there are significant study limitations that must be addressed. Identification of these limitations is important within the discussion of the study results. In the following section, limitations for the study are offered.

Limitations

There were several limitations to this study. First, the sample lacked diversity in gender and race. The study could not compare treatment outcomes for women. As the percentage of women veterans continues to increase, any information on women's response to treatment would have been important. A senate hearing revealed that women veterans often do not consider themselves as bona fide "veterans" whose service makes them eligible for VA benefits, even

when serving in combat zones. As the number of women veterans receiving services at the VA is miniscule, a glimpse into treatment outcome for those who do receive services would be beneficial (Clemmitt, 2009). Similarly, this study was only able to compare two racial groups on treatment outcome. A more diverse sample could have provided additional information regarding possible disparities among other racial/ethnic groups (e.g., Hispanic, Asian, and Pacific Islander) for further analysis.

Another limitation of the study was this researcher's inability to collect qualitative data to provide a more holistic picture of the veteran's experiences. As there was a time span of 4 years between the original data collection and this secondary data analysis, the former participants could not be accessed for additional qualitative data collection. It would be optimal to have focus groups or interviews to discuss the veteran's perceptions of health care access and treatment outcome.

Finally, the limitations of the original study also affected this study. As reported in Ready et al. (2008), these limitations included: the treating clinicians conducted all assessments; patients possibly wanted to please the clinician by showing improvement; no determination on interrater reliability for the various group facilitators; failure to have a comparison group; failure to establish the effect of pharmacological interventions on treatment outcome; failure to establish the effect of previous mental health interventions on treatment outcome; and all patients were in the process of trying to establish, increase or maintain VA service-connected disability payments for PTSD. This last limitation may have led to overreporting of symptoms by veterans. The VA Health System provides access to care for veterans who meet certain eligibility criteria. This eligibility criteria determines the priority status for services. Although many proponents of VA

care report that this "equalizes" care, the VA does not provide access to care for all veterans, at no cost (other than the previously mentioned OEF/OIF combat veteran exemption).

The current study also did not have substantial information on type of injury or injury severity. As injury was not a focal point of the larger study, no injury scales were used during data collection. The type of injury could have been studied in relationship to PTSD symptoms. At present, this study cannot make assumptions about the severity of injury and probability of treatment outcome. The use of injury scales such as the Injury and Severity Score (ISS) (Baker, O'Neill, Haddon, & Long, 1974) and the Abbreviated Injury Scale (AIS) (Association for the Advancement of Automotive Medicine, 1971) would have provided information on the severity of the injury. Lastly, this study's results are not generalizable to the population as a whole as it was conducted with a specialized PTSD program, in one area of the country.

Social Work Practice and Research Implications

This research is valuable to VA social workers as it relates to an important VA initiative. In 1998, the VA's Health Services Research & Development Service (HSR&D) initiated the Quality Enhancement Research Initiative (QUERI) (VA QUERI, 1998). The QUERI mission is to enhance the quality and outcomes of VA healthcare by systematically implementing clinical research findings and evidence-based recommendations into routine clinical practice (VA QUERI, 1998). The VA QUERI utilizes six processes to facilitate the implementation of best research findings and best clinical practices to achieve better health care outcomes for all veterans. This process was applied to this study to enhance the discussion of findings, implications for social work practice, and suggest future research needed in this area. The steps in the QUERI process are: 1) Identify high risk and high volume diseases or problems; 2)

Identify best practices; 3) Define existing practice patterns and outcomes across VA and current variation best practices; 4) Identify and implement interventions to promote best practices; 5) Document that best practices improve outcome; and 6) Document that outcomes are associated with improved health-related quality of life.

In terms of the first step, *Identify high risk and high volume problems*, the study identified combat-related PTSD with injury and mental health disparities among racial groups as high risk and high volume problems. In the second step, *Identify best practices*, the study explored whether group-based exposure therapy is a best practice for PTSD within a population of veterans with combat-related PTSD. Based on the findings of this study (as previously published by Ready et al., 2008), GBET had a significant effect on treatment outcome. This study also suggests that GBET might be a best practice for veterans regardless of race or injury status. Best practices include those evidence-based practices within a given profession. Social work researchers continue to investigate the concept and definition of "evidence-based practices". Thyer (2004) reported that evidence-based practice is based on credible research that indicates the top choice in treatments for specific problems or areas of concern. The literature review demonstrated compelling evidence that exposure therapy is an evidence-based practice.

Furthermore, the VA is mandated to implement the Uniform Services Handbook for Mental Health. The handbook specifies that all mental health service delivery must be evidence-based (VA, 2006). As the VA moves toward providing only evidence-based services, attention must be given to lessons learned from previous wars, and presumptions about the services needed for future veterans.

The third step of QUERI involves *Defining existing practice patterns and outcomes across VA*. Currently, mental health teams within the VA healthcare system are typically

comprised of social workers, psychologists, clinical nurse specialists, and psychiatrists. Social workers at all VA Health Systems practice with a core set of value commitments similar to the NASW Code of Ethics (1999). These value commitments include: 1) To place at the center of their concern the dignity and worth of the individual; 2) To incorporate into practice an understanding of the veteran within his or her family and sociocultural environment; 3) To value and respect the distinctive role and expertise of each member of the multidisciplinary team; 4) To identify gaps in services/resources and to advocate for systems changes that are responsive to veterans' changing needs; 5) To create within the discipline a learning environment that fosters new knowledge, enhances clinical social work practice and promotes administrative excellence; 6) To be ethical in fulfilling responsibilities; and 7) To be conscientious stewards of institutional and community resources essential to the mission (VA Social Work, 2009). The specific value commitments that are applicable to this study are: 1) To identify gaps in services/resources and to advocate for systems changes that are responsive to veterans' changing needs; and 2) To create within the discipline a learning environment that fosters new knowledge, enhances clinical social work practice and promotes administrative excellence.

As this study identified that group-based exposure therapy might have a significant effect on treatment outcome, social workers within the VA system should be encouraged to learn about this intervention. At present, there are a select few social workers utilizing exposure therapy, however, a PCT social worker was a main contributor to the original study. Although the PCT team recently offered exposure therapy trainings for clinicians, the social work discipline was not highly represented. At the time of this writing, there are more than one hundred social workers in the Atlanta VAMC.

Social workers should define existing practice patterns by conducting studies within other VA facilities utilizing group-based exposure therapy with combat veterans. Specifically, they should focus on the impact of injury on treatment outcome, using comparison studies. They should continue to investigate health disparities in this population, utilizing data from various racial/ethnic groups. Social workers should obtain qualitative and quantitative data on veterans' perception of healthcare access, and treatment outcome. Additional studies that indicate similarities and/or differences between veterans with PTSD via branch and length of service would also provide valuable information. Some questions that remain are: 1) Do Army veterans differ from Marine veterans on PTSD symptom severity and response to treatment?; and 2) Does length of service predict the development of PTSD?

In addition, social workers in the VA should also be encouraged to utilize standardized measures of assessment (e.g. CAPS, PCL-M) for PTSD. Rosen et al. (2004) found that social workers and other clinicians within a cross section of VA facilities used a structured interview for PTSD less than 25% of the time. As the VA prepares for the return of OEF/OIF soldiers, a directive has been implemented for clinicians to consistently assess and reassess for PTSD. All OEF/OIF combat veterans presenting to any VA mental health clinic will receive an initial standardized assessment for PTSD, with a reassessment every 90 days. The social workers should be trained and educated on the use and scoring of various standardized measures. They should also understand and review documentation regarding the evidence-based practice of exposure therapy with combat veterans. This effects all facility social workers as combat veterans with PTSD access care through various clinics, specifically, primary care, without ever coming for mental health services (Friedman & Schnurr, 1995). Social workers must coordinate and integrate care across disciplines and clinics. Social workers should also develop treatment

protocols for combat veterans returning with traumatic brain injury. Social workers must identify whether combat veterans with mild TBI would benefit from exposure therapy, while assessing for risks and ability to engage in treatment.

The VA is one of the major centers for veteran care. In the year 2000, the VA served over 86,000 veterans with military related PTSD. The literature established that the VA system varies in current practices vs. practice guideline recommendations (Rosen et al., 2004) which is an excellent area for social work research. The study addresses the fourth step of QUERI, *Identify and implement interventions to promote best practices within various VA health systems*, by providing details concerning how social workers can meet this challenge through research and practice. The researcher will present the study findings to the VA Social Work Education Committee which includes social workers in various clinics (including mental health) throughout the hospital system, the Chief of Social Work, and MSW interns. Secondary data analysis is another method for social work researchers to employ. The Atlanta VA is regarded as 10th in ranking of 120 VA research facilities (VA HSR&D, 2007). There are many opportunities for social workers to collect data, as well as provide meaningful insight using archived data. Social work practitioners should be involved in ongoing research efforts at the VA. This will promote the use of evidence-based practices. As the identification of evidence-based practices involves the assessment of practice relevant research, social work involvement in research is critical.

The Atlanta VAMC is one of the largest VA Medical Centers in the southeast. Multiple studies that support the use of GBET will be published throughout the VA network. This study is the second to report on treatment outcomes with this data. The principal investigators of both the parent study and the present study plan to disseminate this information.

Publishing the findings of the current study fulfills the fifth step, *Document that best practices improve outcome*. There are several internal mechanisms within the VA Healthcare System to publish findings. Some of these mechanisms include (but are not limited to): newsletters (Health Services Research and Development (HSR&D) Forum); reports (HSR&D Impacts; Evidence-based Synthesis Program); and official publications (Practice Matters). The researcher will submit an article to the HSR&D. The HSR&D determines the appropriate mechanism for the report. This study supports other research that includes the use of exposure therapy for combat-related PTSD as a best practice for improving treatment outcome.

The final step in QUERI is *Document outcomes are associated with improved health-related quality of life*. This study documented that veterans with combat-related PTSD had a decrease in symptoms after group-based exposure therapy. A decrease in symptoms would be associated with improved health-related quality of life (e.g., decreased anxiety, decreased hyperarousal, and decreased impairment in activities of daily living). This is also another area for social work research. Social workers should study how the decrease in PTSD symptoms affects quality of life and health outcomes. This can be achieved through studies investigating psychosocial stress, self-efficacy, and studies of comorbidity (e.g., PTSD and Hypertension).

Social Work Policy Implications

As the VA prepares for the deployment of OEF/OIF veterans, this study supports the need for policy to address the ongoing needs of veterans with combat-related PTSD and injuries. At the time of this writing, the VA is planning to create a "one-stop" deployment center for combat veterans to have access to all healthcare services within the system. The planning committee seeks practice and research findings related to combat veterans from skilled clinicians/researchers within the VA. This researcher has the opportunity to provide the study's

findings to the OEF/OIF planning committee. Although the VA is a federal system with rules, regulations, and policies derived from the U.S. Congress, new programs and policy implications for OEF/OIF veterans are collected from the practitioners providing care to psychologically and physically wounded combat veterans.

As of October 2009, the Secretary of Veterans Affairs distributed a memorandum regarding the implementation of a national PTSD outcomes measure. The Secretary requested implementation of an outcomes measure to monitor the change in the level of PTSD symptoms. As the VA uses electronic medical records, a national clinical reminder was created to electronically signal mental health providers to complete the required outcome measure. Although the memorandum indicates that licensed mental health professionals should complete these evaluations, the interpretation of the evaluation might be questionable. The new policy should be modified to include the training expectations for the clinical evaluators. The assumption that all licensed professionals can accurately score and interpret the outcome measure is flawed. As Rosen et al. (2004) demonstrated that social workers and other licensed clinicians within a cross section of VA facilities only used a structured interview for PTSD less than 25% of the time. The minimal use of structured interviews also suggests minimal experience in scoring and interpretation of the structured interview.

Conclusion

This study offered additional information to mental health providers (e.g., social workers, psychiatrists, psychologists, etc.) within the Veterans Health Administration (VHA) and community Vet Centers to support the development of strategies for reducing symptoms of PTSD and improving quality of life in U.S. combat veterans. The results that all veterans showed symptom improvement will encourage the VA PCT Team to enroll combat veterans, with and

without physical injury, into group-based exposure therapy. As troops begin to return from the current Iraq/Afghanistan Wars, VA practitioners should prepare for the arrival of soldiers. This study should initially be nationally replicated in other VA settings. Beyond the boundaries of this study, the researcher will continue to conduct data analysis with the additional data collected by the PCT team. The researcher has the opportunity to continue exploration of additional research questions to promote a continual relationship between social work practice and research.

Conducting this study has been a professional journey, in addition to the academic purpose that it has served. From a professional perspective, the researcher has been employed by the Atlanta VA for three years, initially providing therapeutic services in the Outpatient Mental Health Clinic. In this capacity, the mental distress that veterans continue to experience years after their combat service was observed first-hand. Although the researcher shifted to a supervisory role during this study, the responsibility of ensuring that programming meets the mental health needs of the veterans served is paramount. The social worker's "charge" is to advocate for the unmet needs of all of our veterans. This responsibility to effectively communicate patient needs, create programs, and coordinate care often inspires those in the social work profession.

This study began as an attempt to focus on the needs and mental health treatment of veterans. This group of individuals is ever-growing as troops are continually being deployed. The men and women who serve and protect our country often return to the states in need of mental health services and person-centered care. There is now a greater determination to provide evidence-based services to all veterans, our nation's wounded warriors.

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APPENDICES

APPENDIX A

Highlighted Peer-Reviewed Articles For Literature Review

Study	Subjects	Outcome
Adler et al. 2008	202 Soldiers returning from Iraq	55.3% reported deployment related traumatic event; 8.4% met the three symptom cluster and functional impairment for PTSD; 17% met the three symptom cluster for PTSD
Borkovec, 1993	55 clients referred for Treatment of Generalized Anxiety Disorder	CBT significantly more effective than Applied Relaxation (AR) (CBT- 57.9% symptom reduction at 12 mo. follow-up; AR- 37.9% symptom reduction at 12 mo. follow up
Bride, 2007	282 Master Social Workers	70.2% experienced one symptom of secondary stress in the previous week; 55% met the criteria for at least one core symptom cluster; and 15.2 % met core criteria for diagnosis of PTSD; 45% did not meet any of the three core criteria for PTSD.
Elhai et al. 2006	174 Treatment Seeking Military Trauma Survivors	Inpatient hospitalization significantly related to PTSD severity and mental health outpatient use. PTSD severity unrelated to use of mental health or medical services.
Grieger et al. 2006	613 U.S. soldiers hospitalized following serious combat injury	Early severity of physical problems strongly associated with later PTSD and depression.
Hoge et al. 2003	300,000+ Marines and Army Soldiers completing post deployment assessment from Iraq and Afghanistan	19.1% report a mental health problem (Iraq); 11.3% (Afghanistan); 8.5% (other); Mental health problems associated with combat experiences, mental health care referral and utilization, and attrition from military service after deployment.
Hoge et al. 2007	2,863 Soldiers, returned From Iraq	16.6% met screening for PTSD. PTSD significantly associated with lower ratings of general health, more sick call visits, more missed workdays, more physical symptoms, and high somatic symptom severity. Results remained significant after controlling for physical injury.

Highlighted Peer-Reviewed Articles for Literature Review continued

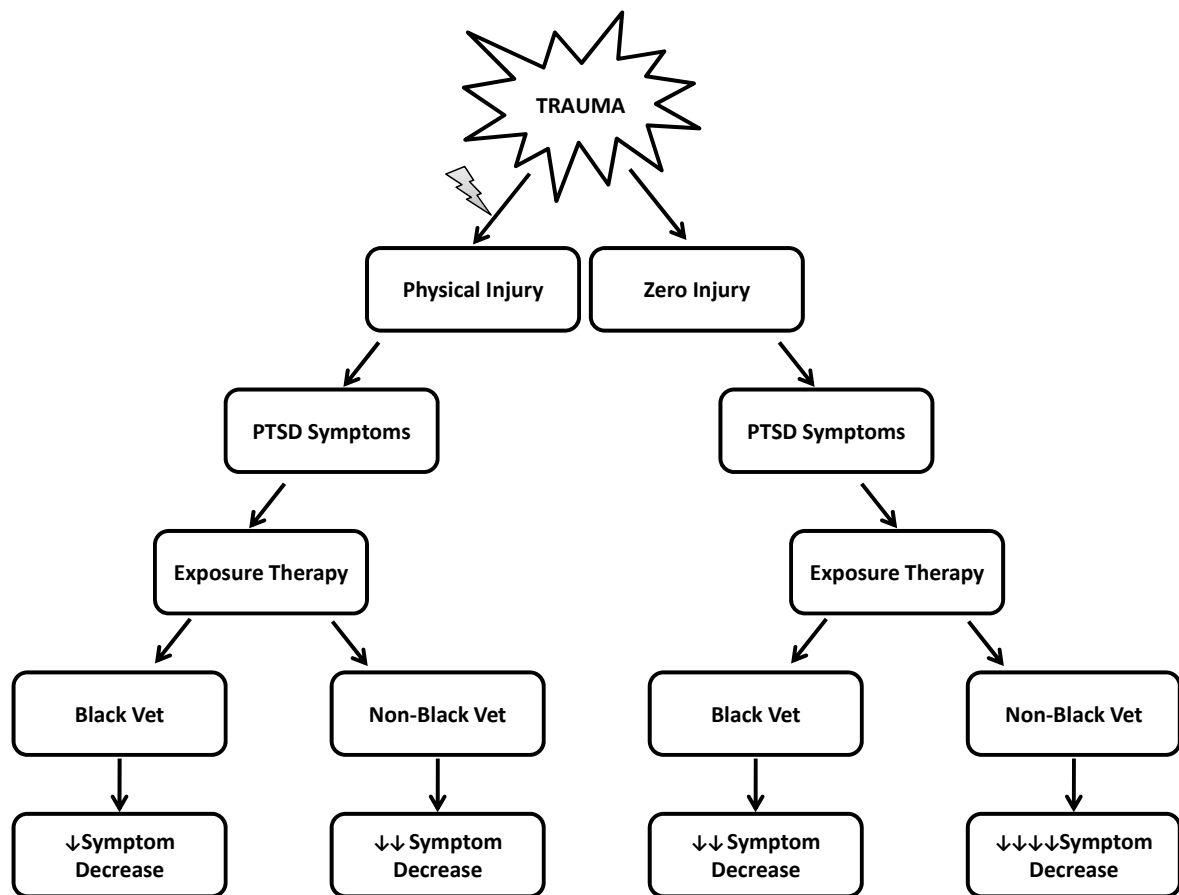
Study	Subjects	Outcome
Koenen et al. 2007	Mail Survey of 1,462 Vietnam Veterans	Excellent test-retest reliability over a 14 yr. period for combat exposure scores; however, changes in combat exposure reports occur.
Koren et al. 2005	60 injured soldiers compared to 40 non-injured soldiers, matched rank, role, length of service, and combat situation	Wounded participants had significantly higher scores than their non-injured counterparts on all clinical measures; presence of PTSD not related to severity of injury or trauma
Jordan et al. 1992	376 Vietnam veterans w/ PTSD and their families	Veterans more likely to report marital, parental, and family adjustment problems.
Kramer et al. 2003	743 Medically hospitalized veterans with and without PTSD/Depressive Disorder	Vets with PTSD/Depressive Disorder more likely to use mental health/substance abuse services, have longer lengths of stay, and report more psychological distress than others.
MacGregor et al. 2009	1,968 injured men (battle and non-battle)	Battle injuries at higher risk for PTSD and other mental health diagnoses; positive association with injury severity.
Magruder et al. 2004	746 VA patients w/ PTSD	PTSD positively associated with comorbid psychiatric disorders, war zone service, education, and decreased functioning.
Martz & Cook, 2001	Retrospective design- calculated odds and ratios for 45, 320 veterans with physical impairments for risk of PTSD	Four of six impairments found to be risk factors for PTSD.
McFarlane et al. 2006	130 Inpatient Psychiatric w/ severe mental illness and PTSD	Severe mental illness associated with victimization and higher rates of PTSD.
Mitchell, 1999	56 men and women diagnosed with Panic Disorder	Participants receiving medication and therapy had greater symptom reductions than participants receiving medications alone.
Ready et al. 2008	102 combat veterans with PTSD in group-based exposure therapy	81% showed significant reduction in symptoms post group-therapy

Highlighted Peer-Reviewed Articles for Literature Review continued

Study	Subjects	Outcome
Rosen et al. 2004	592 VA clinicians	Practice guidelines for PTSD included psychoeducation, coping skills, training, attention to trust issues, depression and substance use screening, prescribing SSRIs. Exposure therapy rarely used. PTSD assessed inconsistently.
Schnurr et al. 2007	284 female veterans randomly assigned to prolonged exposure or present-centered therapy	Women who received prolonged exposure experienced greater symptom reduction
Shipherd et al. 2007	90 veterans- chart review of veterans completing PTSD treatment	66% had comorbid chronic pain diagnosis by physician. 80% had self-reported chronic pain.

APPENDIX B

CONCEPTUAL MODEL



APPENDIX C

Clinician Administered PTSD Scale (CAPS)

National Center for PTSD

CLINICIAN-ADMINISTERED PTSD SCALE FOR DSM-IV

Name: _____ ID #: _____
Interviewer: _____ Date: _____
Study: _____

Dudley D. Blake, Frank W. Weathers, Linda M. Nagy,
Danny G. Kaloupek, Dennis S. Charney, & Terence M. Keane

National Center for Posttraumatic Stress Disorder

Behavioral Science Division -- Boston VA Medical Center
Neurosciences Division -- West Haven VA Medical Center

Revised July 1998

Criterion 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

I'm going to be asking you about some difficult or stressful things that sometimes happen to people. Some examples of this are being in some type of serious accident; being in a fire, a hurricane, or an earthquake; being mugged or beaten up or attacked with a weapon; or being forced to have sex when you didn't want to. I'll start by asking you to look over a list of experiences like this and check any that apply to you. Then, if any of them do apply to you, I'll ask you to briefly describe what happened and how you felt at the time.

Some of these experiences may be hard to remember or may bring back uncomfortable memories or feelings. People often find that talking about them can be helpful, but it's up to you to decide how much you want to tell me. As we go along, if you find yourself becoming upset, let me know and we can slow down and talk about it. Also, if you have any questions or you don't understand something, please let me know. Do you have any questions before we start?

ADMINISTER CHECKLIST, THEN REVIEW AND INQUIRE UP TO THREE EVENTS. IF MORE THAN THREE EVENTS ENDORSED, DETERMINE WHICH THREE EVENTS TO INQUIRE (E.G., FIRST, WORST, AND MOST RECENT EVENTS; THREE WORST EVENTS; TRAUMA OF INTEREST PLUS TWO OTHER WORST EVENTS, ETC.)

IF NO EVENTS ENDORSED ON CHECKLIST: *(Has there ever been a time when your life was in danger or you were seriously injured or harmed?)*

IF NO: *(What about a time when you were threatened with death or serious injury, even if you weren't actually injured or harmed?)*

IF NO: *(What about witnessing something like this happen to someone else or finding out that it happened to someone close to you?)*

IF NO: *(What would you say are some of the most stressful experiences you have had over your life?)*

EVENT #1

What happened? <i>(How old were you? Who else was involved? How many times did this happen? Life threat? Serious injury?)</i>	Describe (e.g., event type, victim, perpetrator, age, frequency):
How did you respond emotionally? <i>(Were you very anxious or frightened? Horrified? Helpless? How so? Were you stunned or in shock so that you didn't feel anything at all? What was that like? What did other people notice about your emotional response? What about after the event - how did you respond emotionally?)</i>	A. (1) Life threat? NO YES [self ___ other ___] Serious injury? NO YES [self ___ other ___] Threat to physical integrity? NO YES [self ___ other ___] A. (2) Intense fear/help/horror? NO YES [during ___ after ___] Criterion A met? NO PROBABLE YES

EVENT #2

<p>What happened? (How old were you? Who else was involved? How many times did this happen? Life threat? Serious injury?)</p>	<p>Describe (e.g., event type, victim, perpetrator, age, frequency):</p>
<p>How did you respond emotionally? (Were you very anxious or frightened? Horrified? Helpless? How so? Were you stunned or in shock so that you didn't feel anything at all? What was that like? What did other people notice about your emotional response? What about after the event - how did you respond emotionally?)</p>	<p><u>A. (1)</u></p> <p>Life threat? NO YES [self ____ other ____]</p> <p>Serious injury? NO YES [self ____ other ____]</p> <p>Threat to physical integrity? NO YES [self ____ other ____]</p> <p><u>A. (2)</u></p> <p>Intense fear/help/horror? NO YES [during ____ after ____]</p> <p>Criterion A met? NO PROBABLE YES</p>

EVENT #3

<p>What happened? (How old were you? Who else was involved? How many times did this happen? Life threat? Serious injury?)</p>	<p>Describe (e.g., event type, victim, perpetrator, age, frequency):</p>
<p>How else did you respond emotionally? (Were you very anxious or frightened? Horrified? Helpless? How so? Were you stunned or in shock so that you didn't feel anything at all? What was that like? What did other people notice about your emotional response? What about after the event - how did you respond emotionally?)</p>	<p><u>A. (1)</u> Life threat? NO YES [self ___ other ___] Serious injury? NO YES [self ___ other ___] Threat to physical integrity? NO YES [self ___ other ___]</p>
	<p><u>A. (2)</u> Intense fear/help/horror? NO YES [during ___ after ___] Criterion A met? NO PROBABLE YES</p>

For the rest of the interview, I want you to keep (EVENTS) in mind as I ask you some questions about how they may have affected you.

I'm going to ask you about twenty-five questions altogether. Most of them have two parts. First, I'll ask if you've ever had a particular problem, and if so, about how often in the past month (*week*). Then I'll ask you how much distress or discomfort that problem may have caused you.

Criterion B. The traumatic event is persistently reexperienced in one (or more) of the following ways:

1. (B-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.

<p>Frequency Have you ever had unwanted memories of (EVENT)? What were they like? (<i>What did you remember?</i>) [IF NOT CLEAR:] (<i>Did they ever occur while you were awake, or only in dreams?</i>) [EXCLUDE IF MEMORIES OCCURRED ONLY DURING DREAMS] How often have you had these memories in the past month (week)?</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Description/Examples</p>	<p>Intensity How much distress or discomfort did these memories cause you? Were you able to put them out of your mind and think about something else? (<i>How hard did you have to try?</i>) How much did they interfere with your life?</p> <p>0 None 1 Mild, minimal distress or disruption of activities 2 Moderate, distress clearly present but still manageable, some disruption of activities 3 Severe, considerable distress, difficulty dismissing memories, marked disruption of activities 4 Extreme, incapacitating distress, cannot dismiss memories, unable to continue activities</p> <p>QV (specify)</p>	<p>Past week F ____ I ____</p> <p>Past month F ____ I ____ Sx: Y N</p> <p>Lifetime F ____ I ____ Sx: Y N</p>
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2. (B-2) recurrent distressing dreams of the event. **Note:** In children, there may be frightening dreams without recognizable content.

<p>Frequency Have you ever had unpleasant dreams about (EVENT)? Describe a typical dream. (<i>What happens in them?</i>) How often have you had these dreams in the past month (week)?</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Description/Examples</p>	<p>Intensity How much distress or discomfort did these dreams cause you? Did they ever wake you up? [IF YES:] (<i>What happened when you woke up? How long did it take you to get back to sleep?</i>) [LISTEN FOR REPORT OF ANXIOUS AROUSAL, YELLING, ACTING OUT THE NIGHTMARE] (<i>Did your dreams ever affect anyone else? How so?</i>)</p> <p>0 None 1 Mild, minimal distress, may not have awoken 2 Moderate, awoke in distress but readily returned to sleep 3 Severe, considerable distress, difficulty returning to sleep 4 Extreme, incapacitating distress, did not return to sleep</p> <p>QV (specify)</p>	<p>Past week F ____ I ____</p> <p>Past month F ____ I ____ Sx: Y N</p> <p>Lifetime F ____ I ____ Sx: Y N</p>
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3. (B-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.

<p><u>Frequency</u> Have you ever suddenly acted or felt as if (EVENT) were happening again? (Have you ever had flashbacks about [EVENT])? [IF NOT CLEAR:] (Did this ever occur while you were awake, or only in dreams?) [EXCLUDE IF OCCURRED ONLY DURING DREAMS] Tell me more about that. How often has that happened in the past month (week)?</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p><u>Description/Examples</u></p>	<p><u>Intensity</u> How much did it seem as if (EVENT) were happening again? (Were you confused about where you actually were or what you were doing at the time?) How long did it last? What did you do while this was happening? (Did other people notice your behavior? What did they say?)</p> <p>0 No reliving 1 Mild, somewhat more realistic than just thinking about event 2 Moderate, definite but transient dissociative quality, still very aware of surroundings, daydreaming quality 3 Severe, strongly dissociative (reports images, sounds, or smells) but retained some awareness of surroundings 4 Extreme, complete dissociation (flashback), no awareness of surroundings, may be unresponsive, possible amnesia for the episode (blackout)</p> <p><u>QV (specify)</u></p>	<p><u>Past week</u> F ____ I ____</p> <p><u>Past month</u> F ____ I ____ Sx: Y N</p> <p><u>Lifetime</u> F ____ I ____ Sx: Y N</p>
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4. (B-4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

<p><u>Frequency</u> Have you ever gotten emotionally upset when something reminded you of (EVENT)? (Has anything ever triggered bad feelings related to [EVENT])? What kinds of reminders made you upset? How often in the past month (week)?</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p><u>Description/Examples</u></p>	<p><u>Intensity</u> How much distress or discomfort did (REMINDERS) cause you? How long did it last? How much did it interfere with your life?</p> <p>0 None 1 Mild, minimal distress or disruption of activities 2 Moderate, distress clearly present but still manageable, some disruption of activities 3 Severe, considerable distress, marked disruption of activities 4 Extreme, incapacitating distress, unable to continue activities</p> <p><u>QV (specify)</u></p>	<p><u>Past week</u> F ____ I ____</p> <p><u>Past month</u> F ____ I ____ Sx: Y N</p> <p><u>Lifetime</u> F ____ I ____ Sx: Y N</p>
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5. (B-5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

<p>Frequency Have you ever had any physical reactions when something reminded you of (EVENT)? (Did your body ever react in some way when something reminded you of [EVENT]? Can you give me some examples? (Did your heart race or did your breathing change? What about sweating or feeling really tense or shaky?) What kinds of reminders triggered these reactions? How often in the past month (week)?</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p><u>Description/Examples</u></p>	<p>Intensity How strong were (PHYSICAL REACTIONS)? How long did they last? (Did they last even after you were out of the situation?)</p> <p>0 No physical reactivity 1 Mild, minimal reactivity 2 Moderate, physical reactivity clearly present, may be sustained if exposure continues 3 Severe, marked physical reactivity, sustained throughout exposure 4 Extreme, dramatic physical reactivity, sustained arousal even after exposure has ended</p> <p>QV (specify)</p>	<p>Past week F ____ I ____</p> <p>Past month F ____ I ____ Sx: Y N</p> <p>Lifetime F ____ I ____ Sx: Y N</p>
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Criterion 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:

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

<p>Frequency Have you ever tried to avoid thoughts or feelings about (EVENT)? (What kinds of thoughts or feelings did you try to avoid?) What about trying to avoid talking with other people about it? (Why is that?) How often in the past month (week)?</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p><u>Description/Examples</u></p>	<p>Intensity How much effort did you make to avoid (THOUGHTS/FEELINGS/CONVERSATIONS)? (What kinds of things did you do? What about drinking or using medication or street drugs?) [CONSIDER ALL ATTEMPTS AT AVOIDANCE, INCLUDING DISTRACTION, SUPPRESSION, AND USE OF ALCOHOL/DRUGS] How much did that interfere with your life?</p> <p>0 None 1 Mild, minimal effort, little or no disruption of activities 2 Moderate, some effort, avoidance definitely present, some disruption of activities 3 Severe, considerable effort, marked avoidance, marked disruption of activities, or involvement in certain activities as avoidant strategy 4 Extreme, drastic attempts at avoidance, unable to continue activities, or excessive involvement in certain activities as avoidant strategy</p> <p>QV (specify)</p>	<p>Past week F ____ I ____</p> <p>Past month F ____ I ____ Sx: Y N</p> <p>Lifetime F ____ I ____ Sx: Y N</p>
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8. (C-3) inability to recall an important aspect of the trauma

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

<p>Frequency Have you been less interested in activities that you used to enjoy? (What kinds of things have you lost interest in? Are there some things you don't do at all anymore? Why is that?) [EXCLUDE IF NO OPPORTUNITY, IF PHYSICALLY UNABLE, OR IF DEVELOPMENTALLY APPROPRIATE CHANGE IN PREFERRED ACTIVITIES] In the past month (week), how many activities have you been less interested in? (What kinds of things do you still enjoy doing?) When did you first start to feel that way? (After the [EVENT]?)</p> <p>0 None 1 Few activities (less than 10%) 2 Some activities (approx 20-30%) 3 Many activities (approx 50-60%) 4 Most or all activities (more than 80%)</p> <p>Description/Examples</p>	<p>Intensity How strong was your loss of interest? (Would you enjoy [ACTIVITIES] once you got started?)</p> <p>0 No loss of interest 1 Mild, slight loss of interest, probably would enjoy after starting activities 2 Moderate, definite loss of interest, but still has some enjoyment of activities 3 Severe, marked loss of interest in activities 4 Extreme, complete loss of interest, no longer participates in any activities</p> <p>QV (specify)</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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10. (C-5) feeling of detachment or estrangement from others

<p>Frequency Have you felt distant or cut off from other people? What was that like? How much of the time in the past month (week) have you felt that way? When did you first start to feel that way? (After the [EVENT]?)</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%)</p> <p>Description/Examples</p>	<p>Intensity How strong were your feelings of being distant or cut off from others? (Who do you feel closest to? How many people do you feel comfortable talking with about personal things?)</p> <p>0 No feelings of detachment or estrangement 1 Mild, may feel "out of synch" with others 2 Moderate, feelings of detachment clearly present, but still feels some interpersonal connection 3 Severe, marked feelings of detachment or estrangement from most people, may feel close to only one or two people 4 Extreme, feels completely detached or estranged from others, not close with anyone</p> <p>QV (specify)</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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11. (C-6) restricted range of affect (e.g., unable to have loving feelings)

<p>Frequency Have there been times when you felt emotionally numb or had trouble experiencing feelings like love or happiness? What was that like? (What feelings did you have trouble experiencing?) How much of the time in the past month (week) have you felt that way? When did you first start having trouble experiencing (EMOTIONS)? (After the [EVENT]?)</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%)</p> <p>Description/Examples</p>	<p>Intensity How much trouble did you have experiencing (EMOTIONS)? (What kinds of feelings were you still able to experience?) [INCLUDE OBSERVATIONS OF RANGE OF AFFECT DURING INTERVIEW]</p> <p>0 No reduction of emotional experience 1 Mild, slight reduction of emotional experience 2 Moderate, definite reduction of emotional experience, but still able to experience most emotions 3 Severe, marked reduction of experience of at least two primary emotions (e.g., love, happiness) 4 Extreme, completely lacking emotional experience</p> <p>QV (specify)</p> <p>_____</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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12. (C-7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

<p>Frequency Have there been times when you felt there is no need to plan for the future, that somehow your future will be cut short? Why is that? [RULE OUT REALISTIC RISKS SUCH AS LIFE-THREATENING MEDICAL CONDITIONS] How much of the time in the past month (week) have you felt that way? When did you first start to feel that way? (After the [EVENT]?)</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%)</p> <p>Description/Examples</p>	<p>Intensity How strong was this feeling that your future will be cut short? (How long do you think you will live? How convinced are you that you will die prematurely?)</p> <p>0 No sense of a foreshortened future 1 Mild, slight sense of a foreshortened future 2 Moderate, sense of a foreshortened future definitely present, but no specific prediction about longevity 3 Severe, marked sense of a foreshortened future, may make specific prediction about longevity 4 Extreme, overwhelming sense of a foreshortened future, completely convinced of premature death</p> <p>QV (specify)</p> <p>_____</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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Criterion D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

13. (D-1) difficulty falling or staying asleep

<p>Frequency Have you had any problems falling or staying asleep? How often in the past month (week)? When did you first start having problems sleeping? (After the [EVENT]?)</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Sleep onset problems? Y N Mid-sleep awakening? Y N Early a.m. awakening? Y N Total # hrs sleep/night _____ Desired # hrs sleep/night _____</p>	<p>Intensity How much of a problem did you have with your sleep? (How long did it take you to fall asleep? How often did you wake up in the night? Did you often wake up earlier than you wanted to? How many total hours did you sleep each night?)</p> <p>0 No sleep problems 1 Mild, slightly longer latency, or minimal difficulty staying asleep (up to 30 minutes loss of sleep) 2 Moderate, definite sleep disturbance, clearly longer latency, or clear difficulty staying asleep (30-90 minutes loss of sleep) 3 Severe, much longer latency, or marked difficulty staying asleep (90 min to 3 hrs loss of sleep) 4 Extreme, very long latency, or profound difficulty staying asleep (> 3 hrs loss of sleep)</p> <p>QV (specify) _____</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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14. (D-2) irritability or outbursts of anger

<p>Frequency Have there been times when you felt especially irritable or showed strong feelings of anger? Can you give me some examples? How often in the past month (week)? When did you first start feeling that way? (After the [EVENT]?)</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Description/Examples _____</p>	<p>Intensity How strong was your anger? (How did you show it?) [IF REPORTS SUPPRESSION:] (How hard was it for you to keep from showing your anger?) How long did it take you to calm down? Did your anger cause you any problems?</p> <p>0 No irritability or anger 1 Mild, minimal irritability, may raise voice when angry 2 Moderate, definite irritability or attempts to suppress anger, but can recover quickly 3 Severe, marked irritability or marked attempts to suppress anger, may become verbally or physically aggressive when angry 4 Extreme, pervasive anger or drastic attempts to suppress anger, may have episodes of physical violence</p> <p>QV (specify) _____</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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15. (D-3) difficulty concentrating

<p>Frequency Have you found it difficult to concentrate on what you were doing or on things going on around you? What was that like? How much of the time in the past month (week)? When did you first start having trouble concentrating? (After the [EVENT]?)</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%)</p> <p><u>Description/Examples</u></p>	<p>Intensity How difficult was it for you to concentrate? [INCLUDE OBSERVATIONS OF CONCENTRATION AND ATTENTION IN INTERVIEW] How much did that interfere with your life?</p> <p>0 No difficulty with concentration 1 Mild, only slight effort needed to concentrate, little or no disruption of activities 2 Moderate, definite loss of concentration but could concentrate with effort, some disruption of activities 3 Severe, marked loss of concentration even with effort, marked disruption of activities 4 Extreme, complete inability to concentrate, unable to engage in activities</p> <p>QV (specify)</p> <p>_____</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p><u>Past week</u> F _____ I _____</p> <p><u>Past month</u> F _____ I _____ Sx: Y N</p> <p><u>Lifetime</u> F _____ I _____ Sx: Y N</p>
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16. (D-4) hypervigilance

<p>Frequency Have you been especially alert or watchful, even when there was no real need to be? (Have you felt as if you were constantly on guard?) Why is that? How much of the time in the past month (week)? When did you first start acting that way? (After the [EVENT]?)</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%)</p> <p><u>Description/Examples</u></p>	<p>Intensity How hard did you try to be watchful of things going on around you? [INCLUDE OBSERVATIONS OF HYPERVIGILANCE IN INTERVIEW] Did your (HYPERVIGILANCE) cause you any problems?</p> <p>0 No hypervigilance 1 Mild, minimal hypervigilance, slight heightening of awareness 2 Moderate, hypervigilance clearly present, watchful in public (e.g., chooses safe place to sit in a restaurant or movie theater) 3 Severe, marked hypervigilance, very alert, scans environment for danger, exaggerated concern for safety of self/family/home 4 Extreme, excessive hypervigilance, efforts to ensure safety consume significant time and energy and may involve extensive safety/checking behaviors, marked watchfulness during interview</p> <p>QV (specify)</p> <p>_____</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p><u>Past week</u> F _____ I _____</p> <p><u>Past month</u> F _____ I _____ Sx: Y N</p> <p><u>Lifetime</u> F _____ I _____ Sx: Y N</p>
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17. (D-5) exaggerated startle response

<p>Frequency Have you had any strong startle reactions? When did that happen? (What kinds of things made you startle?) How often in the past month (week)? When did you first have these reactions? (After the [EVENT]?)</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Description/Examples</p>	<p>Intensity How strong were these startle reactions? (How strong were they compared to how most people would respond?) How long did they last?</p> <p>0 No startle reaction 1 Mild, minimal reaction 2 Moderate, definite startle reaction, feels "jumpy" 3 Severe, marked startle reaction, sustained arousal following initial reaction 4 Extreme, excessive startle reaction, overt coping behavior (e.g., combat veteran who "hits the dirt")</p> <p>QV (specify)</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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Criterion E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

18. onset of symptoms

<p>[IF NOT ALREADY CLEAR:] When did you first start having (PTSD SYMPTOMS) you've told me about? (How long after the trauma did they start? More than six months?)</p>	<p>total # months delay in onset</p> <p>With delayed onset (≥ 6 months)? YES NO</p>
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19. duration of symptoms

<p>[CURRENT] How long have these (PTSD SYMPTOMS) lasted altogether?</p>	<p>Duration more than 1 month?</p>	<p>Current NO YES</p>	<p>Lifetime NO YES</p>
<p>[LIFETIME] How long did these (PTSD SYMPTOMS) last altogether?</p>	<p>Total # months duration Acute (< 3 months) or chronic (≥ 3 months)?</p>	<p>acute chronic</p>	<p>acute chronic</p>

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

20. subjective distress

<p>[CURRENT] Overall, how much have you been bothered by these (PTSD SYMPTOMS) you've told me about? [CONSIDER DISTRESS REPORTED ON EARLIER ITEMS]</p> <p>[LIFETIME] Overall, how much were you bothered by these (PTSD SYMPTOMS) you've told me about? [CONSIDER DISTRESS REPORTED ON EARLIER ITEMS]</p>	<p>0 None 1 Mild, minimal distress 2 Moderate, distress clearly present but still manageable 3 Severe, considerable distress 4 Extreme, incapacitating distress</p>	<p>Past week _____</p> <p>Past month _____</p> <p>Lifetime _____</p>
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21. Impairment in social functioning

<p>[CURRENT] Have these (PTSD SYMPTOMS) affected your relationships with other people? How so? [CONSIDER IMPAIRMENT IN SOCIAL FUNCTIONING REPORTED ON EARLIER ITEMS]</p> <p>[LIFETIME] Did these (PTSD SYMPTOMS) affect your social life? How so? [CONSIDER IMPAIRMENT IN SOCIAL FUNCTIONING REPORTED ON EARLIER ITEMS]</p>	<p>0 No adverse impact</p> <p>1 Mild impact, minimal impairment in social functioning</p> <p>2 Moderate impact, definite impairment, but many aspects of social functioning still intact</p> <p>3 Severe impact, marked impairment, few aspects of social functioning still intact</p> <p>4 Extreme impact, little or no social functioning</p>	<p><u>Past week</u></p> <p>_____</p> <p><u>Past month</u></p> <p>_____</p> <p><u>Lifetime</u></p> <p>_____</p>
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22. Impairment in occupational or other important area of functioning

<p>[CURRENT -- IF NOT ALREADY CLEAR] Are you working now?</p> <p>IF YES: Have these (PTSD SYMPTOMS) affected your work or your ability to work? How so? [CONSIDER REPORTED WORK HISTORY, INCLUDING NUMBER AND DURATION OF JOBS, AS WELL AS THE QUALITY OF WORK RELATIONSHIPS. IF PREMORBID FUNCTIONING IS UNCLEAR, INQUIRE ABOUT WORK EXPERIENCES BEFORE THE TRAUMA. FOR CHILD/ADOLESCENT TRAUMAS, ASSESS PRE-TRAUMA SCHOOL PERFORMANCE AND POSSIBLE PRESENCE OF BEHAVIOR PROBLEMS]</p> <p>IF NO: Have these (PTSD SYMPTOMS) affected any other important part of your life? [AS APPROPRIATE, SUGGEST EXAMPLES SUCH AS PARENTING, HOUSEWORK, SCHOOLWORK, VOLUNTEER WORK, ETC.] How so?</p> <p>[LIFETIME -- IF NOT ALREADY CLEAR] Were you working then?</p> <p>IF YES: Did these (PTSD SYMPTOMS) affect your work or your ability to work? How so? [CONSIDER REPORTED WORK HISTORY, INCLUDING NUMBER AND DURATION OF JOBS, AS WELL AS THE QUALITY OF WORK RELATIONSHIPS. IF PREMORBID FUNCTIONING IS UNCLEAR, INQUIRE ABOUT WORK EXPERIENCES BEFORE THE TRAUMA. FOR CHILD/ADOLESCENT TRAUMAS, ASSESS PRE-TRAUMA SCHOOL PERFORMANCE AND POSSIBLE PRESENCE OF BEHAVIOR PROBLEMS]</p> <p>IF NO: Did these (PTSD SYMPTOMS) affect any other important part of your life? [AS APPROPRIATE, SUGGEST EXAMPLES SUCH AS PARENTING, HOUSEWORK, SCHOOLWORK, VOLUNTEER WORK, ETC.] How so?</p>	<p>0 No adverse impact</p> <p>1 Mild impact, minimal impairment in occupational/other important functioning</p> <p>2 Moderate impact, definite impairment, but many aspects of occupational/other important functioning still intact</p> <p>3 Severe impact, marked impairment, few aspects of occupational/other important functioning still intact</p> <p>4 Extreme impact, little or no occupational/other important functioning</p>	<p><u>Past week</u></p> <p>_____</p> <p><u>Past month</u></p> <p>_____</p> <p><u>Lifetime</u></p> <p>_____</p>
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Global Ratings**23. global validity**

ESTIMATE THE OVERALL VALIDITY OF RESPONSES. CONSIDER FACTORS SUCH AS COMPLIANCE WITH THE INTERVIEW, MENTAL STATUS (E.G., PROBLEMS WITH CONCENTRATION, COMPREHENSION OF ITEMS, DISSOCIATION), AND EVIDENCE OF EFFORTS TO EXAGGERATE OR MINIMIZE SYMPTOMS.	0	Excellent, no reason to suspect invalid responses
	1	Good, factors present that may adversely affect validity
	2	Fair, factors present that definitely reduce validity
	3	Poor, substantially reduced validity
	4	Invalid responses, severely impaired mental status or possible deliberate "faking bad" or "faking good"

24. global severity

ESTIMATE THE OVERALL SEVERITY OF PTSD SYMPTOMS. CONSIDER DEGREE OF SUBJECTIVE DISTRESS, DEGREE OF FUNCTIONAL IMPAIRMENT, OBSERVATIONS OF BEHAVIORS IN INTERVIEW, AND JUDGMENT REGARDING REPORTING STYLE.	0	No clinically significant symptoms, no distress and no functional impairment	<u>Past week</u>
	1	Mild, minimal distress or functional impairment	—
	2	Moderate, definite distress or functional impairment but functions satisfactorily with effort	<u>Past month</u>
	3	Severe, considerable distress or functional impairment, limited functioning even with effort	—
	4	Extreme, marked distress or marked impairment in two or more major areas of functioning	<u>Lifetime</u>

25. global improvement

RATE TOTAL OVERALL IMPROVEMENT PRESENT SINCE THE INITIAL RATING. IF NO EARLIER RATING, ASK HOW THE SYMPTOMS ENDORSED HAVE CHANGED OVER THE PAST 6 MONTHS. RATE THE DEGREE OF CHANGE, WHETHER OR NOT, IN YOUR JUDGMENT, IT IS DUE TO TREATMENT.	0	Asymptomatic
	1	Considerable improvement
	2	Moderate improvement
	3	Slight improvement
	4	No improvement
	5	Insufficient information

Current PTSD Symptoms

Criterion A met (traumatic event)? NO YES

_____ # Criterion B sx (≥ 1)? NO YES

_____ # Criterion C sx (≥ 3)? NO YES

_____ # Criterion D sx (≥ 2)? NO YES

Criterion E met (duration ≥ 1 month)? NO YES

Criterion F met (distress/impairment)? NO YES

CURRENT PTSD (Criteria A-F met)? NO YES

IF CURRENT PTSD CRITERIA ARE MET, SKIP TO ASSOCIATED FEATURES.

IF CURRENT CRITERIA ARE NOT MET, ASSESS FOR LIFETIME PTSD. IDENTIFY A PERIOD OF AT LEAST A MONTH SINCE THE TRAUMATIC EVENT IN WHICH SYMPTOMS WERE WORSE.

Since the (EVENT), has there been a time when these (PTSD SYMPTOMS) were a lot worse than they have been in the past month? When was that? How long did it last? (At least a month?)

IF MULTIPLE PERIODS IN THE PAST: When were you bothered the most by these (PTSD SYMPTOMS)?

IF AT LEAST ONE PERIOD, INQUIRE ITEMS 1-17, CHANGING FREQUENCY PROMPTS TO REFER TO WORST PERIOD: During that time, did you (EXPERIENCE SYMPTOM)? How often?

Lifetime PTSD Symptoms

Criterion A met (traumatic event)? NO YES

_____ # Criterion B sx (≥ 1)? NO YES

_____ # Criterion C sx (≥ 3)? NO YES

_____ # Criterion D sx (≥ 2)? NO YES

Criterion E met (duration ≥ 1 month)? NO YES

Criterion F met (distress/impairment)? NO YES

LIFETIME PTSD (Criteria A-F met)? NO YES

Associated Features

26. guilt over acts of commission or omission

<p><u>Frequency</u> Have you felt guilty about anything you did or didn't do during (EVENT)? Tell me more about that. (What do you feel guilty about?) How much of the time have you felt that way in the past month (week)?</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%)</p> <p><u>Description/Examples</u></p>	<p><u>Intensity</u> How strong were these feelings of guilt? How much distress or discomfort did they cause?</p> <p>0 No feelings of guilt 1 Mild, slight feelings of guilt 2 Moderate, guilt feelings definitely present, some distress but still manageable 3 Severe, marked feelings of guilt, considerable distress 4 Extreme, pervasive feelings of guilt, self-condemnation regarding behavior, incapacitating distress</p> <p><u>QV (specify)</u></p>	<p><u>Past week</u> F _____ I _____</p> <p><u>Past month</u> F _____ I _____ Sx: Y N</p> <p><u>Lifetime</u> F _____ I _____ Sx: Y N</p>
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27. survivor guilt [APPLICABLE ONLY IF MULTIPLE VICTIMS]

<p><u>Frequency</u> Have you felt guilty about surviving (EVENT) when others did not? Tell me more about that. (What do you feel guilty about?) How much of the time have you felt that way in the past month (week)?</p> <p>0 None of the time 1 Very little of the time (less than 10%) 2 Some of the time (approx 20-30%) 3 Much of the time (approx 50-60%) 4 Most or all of the time (more than 80%) 8 N/A</p> <p><u>Description/Examples</u></p>	<p><u>Intensity</u> How strong were these feelings of guilt? How much distress or discomfort did they cause?</p> <p>0 No feelings of guilt 1 Mild, slight feelings of guilt 2 Moderate, guilt feelings definitely present, some distress but still manageable 3 Severe, marked feelings of guilt, considerable distress 4 Extreme, pervasive feelings of guilt, self-condemnation regarding survival, incapacitating distress</p> <p><u>QV (specify)</u></p>	<p><u>Past week</u> F _____ I _____</p> <p><u>Past month</u> F _____ I _____ Sx: Y N</p> <p><u>Lifetime</u> F _____ I _____ Sx: Y N</p>
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28. a reduction in awareness of his or her surroundings (e.g., "being in a daze")

<p>Frequency Have there been times when you felt out of touch with things going on around you, like you were in a daze? What was that like? [DISTINGUISH FROM FLASHBACK EPISODES] How often has that happened in the past month (week)? [IF NOT CLEAR:] (Was it due to an illness or the effects of drugs or alcohol?) When did you first start feeling that way? (After the [EVENT]?)</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Description/Examples</p>	<p>Intensity How strong was this feeling of being out of touch or in a daze? (Were you confused about where you actually were or what you were doing at the time?) How long did it last? What did you do while this was happening? (Did other people notice your behavior? What did they say?)</p> <p>0 No reduction in awareness 1 Mild, slight reduction in awareness 2 Moderate, definite but transient reduction in awareness, may report feeling "spacy" 3 Severe, marked reduction in awareness, may persist for several hours 4 Extreme, complete loss of awareness of surroundings, may be unresponsive, possible amnesia for the episode (blackout)</p> <p>QV (specify)</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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29. derealization

<p>Frequency Have there been times when things going on around you seemed unreal or very strange and unfamiliar? [IF NO:] (What about times when people you knew suddenly seemed unfamiliar?) What was that like? How often has that happened in the past month (week)? [IF NOT CLEAR:] (Was it due to an illness or the effects of drugs or alcohol?) When did you first start feeling that way? (After the [EVENT]?)</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p>Description/Examples</p>	<p>Intensity How strong was (DEREALIZATION)? How long did it last? What did you do while this was happening? (Did other people notice your behavior? What did they say?)</p> <p>0 No derealization 1 Mild, slight derealization 2 Moderate, definite but transient derealization 3 Severe, considerable derealization, marked confusion about what is real, may persist for several hours 4 Extreme, profound derealization, dramatic loss of sense of reality or familiarity</p> <p>QV (specify)</p> <p>Trauma-related? 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p>Past week F _____ I _____</p> <p>Past month F _____ I _____ Sx: Y N</p> <p>Lifetime F _____ I _____ Sx: Y N</p>
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30. depersonalization

<p><u>Frequency</u> Have there been times when you felt as if you were outside of your body, watching yourself as if you were another person? [IF NO:] (What about times when your body felt strange or unfamiliar to you, as if it had changed in some way?) What was that like? How often has that happened in the past month (week)? [IF NOT CLEAR:] (Was it due to an illness or the effects of drugs or alcohol?) When did you first start feeling that way? (After the [EVENT]?)</p> <p>0 Never 1 Once or twice 2 Once or twice a week 3 Several times a week 4 Daily or almost every day</p> <p><u>Description/Examples</u></p>	<p><u>Intensity</u> How strong was (DEPERSONALIZATION)? How long did it last? What did you do while this was happening? (Did other people notice your behavior? What did they say?)</p> <p>0 No depersonalization 1 Mild, slight depersonalization 2 Moderate, definite but transient depersonalization 3 Severe, considerable depersonalization, marked sense of detachment from self, may persist for several hours 4 Extreme, profound depersonalization, dramatic sense of detachment from self</p> <p><u>QV (specify)</u></p> <p>_____</p> <p><u>Trauma-related?</u> 1 definite 2 probable 3 unlikely Current _____ Lifetime _____</p>	<p><u>Past week</u> F _____ I _____</p> <p><u>Past month</u> F _____ I _____ Sx: Y N</p> <p><u>Lifetime</u> F _____ I _____ Sx: Y N</p>
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CAPS SUMMARY SHEET

Name: _____ ID#: _____ Interviewer: _____ Study: _____ Date: _____

A. Traumatic event:

B. Reexperiencing symptoms	PAST WEEK			PAST MONTH			LIFETIME		
	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>
(1) intrusive recollections									
(2) distressing dreams									
(3) acting or feeling as if event were recurring									
(4) psychological distress at exposure to cues									
(5) physiological reactivity on exposure to cues									
<i>B subtotals</i>									
<i>Number of Criterion B symptoms (need 1)</i>									

C. Avoidance and numbing symptoms	PAST WEEK			PAST MONTH			LIFETIME		
	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>
(6) avoidance of thoughts or feelings									
(7) avoidance of activities, places, or people									
(8) inability to recall important aspect of trauma									
(9) diminished interest in activities									
(10) detachment or estrangement									
(11) restricted range of affect									
(12) sense of a foreshortened future									
<i>C subtotals</i>									
<i>Number of Criterion C symptoms (need 3)</i>									

D. Hyperarousal symptoms	PAST WEEK			PAST MONTH			LIFETIME		
	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>
(13) difficulty falling or staying asleep									
(14) irritability or outbursts of anger									
(15) difficulty concentrating									
(16) hypervigilance									
(17) exaggerated startle response									
<i>D subtotals</i>									
<i>Number of Criterion D symptoms (need 2)</i>									

Total Freq, Int, and Severity (F+I)	PAST WEEK			PAST MONTH			LIFETIME		
	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>
<i>Sum of subtotals (B+C+D)</i>									

E. Duration of disturbance	CURRENT		LIFETIME	
(19) duration of disturbance at least one month	NO	YES	NO	YES

F. Significant distress or impairment in functioning	PAST WEEK		PAST MONTH		LIFETIME	
(20) subjective distress						
(21) impairment in social functioning						
(22) impairment in occupational functioning						
<i>AT LEAST ONE ≥ 2?</i>	NO	YES	NO	YES	NO	YES

PTSD diagnosis	CURRENT		LIFETIME	
<i>PTSD PRESENT -- ALL CRITERIA (A-F) MET?</i>	NO	YES	NO	YES
<i>Specify:</i>				
(18) with delayed onset (≥ 6 months delay)	NO	YES	NO	YES
(19) acute (< 3 months) or chronic (≥ 3 months)	acute	chronic	acute	chronic

<i>Global ratings</i>	<i>PAST WEEK</i>	<i>PAST MONTH</i>	<i>LIFETIME</i>
(23) global validity			
(24) global severity			
(25) global improvement			

<i>Associated features</i>	<i>PAST WEEK</i>			<i>PAST MONTH</i>			<i>LIFETIME</i>		
	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>	<i>Freq</i>	<i>Int</i>	<i>F+I</i>
(26) guilt over acts of commission or omission									
(27) survivor guilt									
(28) reduction in awareness of surroundings									
(29) derealization									
(30) depersonalization									

LIFE EVENTS CHECKLIST

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally, (b) you witnessed it happen to someone else, (c) you learned about it happening to someone close to you, (d) you're not sure if it fits, or (e) it doesn't apply to you.

Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Not Sure	Doesn't apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home, or during recreational activity					
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)					
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)					
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)					
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9. Other unwanted or uncomfortable sexual experience					
10. Combat or exposure to a war-zone (in the military or as a civilian)					
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12. Life-threatening illness or injury					
13. Severe human suffering					
14. Sudden, violent death (for example, homicide, suicide)					
15. Sudden, unexpected death of someone close to you					
16. Serious injury, harm, or death you caused to someone else					
17. Any other very stressful event or experience					

APPENDIX D

VA Letter of Support for Research



**Department of Veterans Affairs
Medical Center
(Atlanta)
1670 Clairmont Road
Decatur GA 30033**

University of Georgia
Human Subjects/IRB
C/o Chairperson
612 Boyd Graduate Studies Research Center
Athens, Georgia 30602

In Reply Refer To:

To Whom It May Concern:

As a member of the Atlanta VA Medical Center's Trauma Recovery Program I am pleased to have Crystal R. Anderson, LCSW, as a researcher with my study entitled: Trauma Recovery Program Treatment Outcomes Study.

Ms. Anderson will assist with data input, organization and analysis. Our study was approved by the IRB of Emory and is also overseen by the Atlanta VA Medical Center's Research and Development Committee. Ms. Anderson was approved by the Emory IRB and is pending final approval by the Atlanta VA Medical Center's Research and Development Committee.

As the principal investigator, I support Ms. Anderson's dissertation research. I understand that she will conduct a secondary data analysis for her doctoral dissertation in social work. She has our support to present her results for the completion of her degree requirements. Ms. Anderson will have access to data already collected, including archival chart reviews.

Please do not hesitate to contact me at 404.321.6111 X7082 with any questions regarding Ms. Anderson's role in our study.

Sincerely,

A handwritten signature in black ink, appearing to read "David J. Ready".

David J. Ready, Ph.D.
Staff Psychologist
Mental Health Service Line, VA Medical Center, Atlanta, Georgia
Emory University School of Medicine, Emory University, Atlanta, Georgia

APPENDIX E

Consent Form

VA Form 10-1086

**Emory University School of Medicine and Atlanta VA Medical Center Consent
and Authorization to be a Research Subject**

Title of Study: Posttraumatic Stress Disorder Clinical Team Program Evaluation
Principal Investigator: David J. Ready, Ph.D. VAMC: Atlanta, GA

PARTICIPATION IN THIS RESEARCH IS VOLUNTARY

1. Purpose of study and how long it will last:

You are being asked to volunteer for a research project to further our knowledge about the effectiveness of a Core program of the Posttraumatic Stress Disorder Clinical Team (PCT). By scientifically testing the benefits of the Core program, we hope to develop a better program to treat PTSD. You will receive the same treatment if you volunteer for the study as other patients who do not participate in the study. The only difference is that you will be asked to fill out a weekly assessment form and to attend follow-up testing twice after your participation in the Core program has ended. The first post-treatment assessment will occur within two weeks after the end of the 16-week Core program and the second will occur about six months after the Core program has ended. Your scores on these tests will be compared to the scores we already have from your screening for the program to determine if our program produces lasting reduction in PTSD symptoms.

2. Description of study including procedures to be used:

To be accepted into the study, you must first read and sign this document and another, which is referred to as a HIPPA authorization. Next you will be asked to arrive a little early for the Core program group meetings one day a week in order to fill out a four-page brief assessment. We have found that most patients can fill out these forms accurately in less than ten minutes. These weekly assessment forms will be used in two ways. First, the staff will use them to monitor your progress through the Core program. If these brief assessments indicate that you are having a dramatic increase in symptoms, the form will help alert the staff and the staff will take appropriate action to help you deal with these symptoms. Second, after the Core program is over, these forms will be analyzed to determine when patients' symptoms change, in order to find out which parts of the Core program are effective and which are not. Only by getting feedback from our patients can we determine how to improve our treatment. After you have completed the treatment you will be asked to participate in two additional assessments. These assessments will occur within two weeks of the end of the Core program and again six months later. Each assessment will last about two hours, will be conducted by one of the PCT staff members and will occur in one of the PCT offices on the fifth floor. In these assessments you will be administered tests to determine the degree to which you suffer from the various symptoms of PTSD and you will be asked to rate the effectiveness of different aspects of the PCT Core program. This feedback will be used to modify the program for future groups. The goal is to continue doing what the patients find useful and discontinue doing things that do not help our patients reduce PTSD symptoms. Neither you nor the VA can use these assessments in matters of VA compensation.

(Continuation page 2 of 6)

Department of Veterans Affairs RESEARCH CONSENT FORM

Title of study: Posttraumatic Stress Disorder Clinical Team Program Evaluation

Principal Investigator: David J. Ready, Ph.D. VAMC: Atlanta, GA

3. Description of procedures that may result in discomfort or inconvenience:

Past experience has indicated that filling out the weekly brief assessments and attending the two post-treatment evaluations have caused only minimum discomfort or inconvenience. Most patients have indicated that they have not found these forms difficult to fill out or found the post-treatment assessments difficult. You may find it inconvenient to come early to group once a week and to attend the post-treatment assessments. These assessments must occur during normal VA business hours.

4. Expected risks of study:

Participation in this study is not expected to produce significant risk or lasting discomfort. You will receive the same group-based treatment whether you participate in this program evaluation study or not.

5. Expected benefits of the study:

Taking part in this research study may not benefit you personally, but we [doctors, researchers and scientists] may learn new things that will help others. Some patients report that they like the fact that the staff is carefully monitoring them during the 16-week Core program and that they enjoy providing feedback to the staff about what they found useful in the program and what they did not. Some patients have indicated that they want to help other veterans suffering from PTSD and feel that they are doing so by participating in the study.

6. Other treatment available:

If you choose not to participate in this study you will still receive the same group-based PCT Core program in which you are currently enrolled.

(Continuation page 3 of 6)

Title of Study: **Posttraumatic Stress Disorder Clinical Team Program Evaluation**

Principal Investigator: David J. Ready, Ph.D. VAMC: Atlanta, GA

7. Use of research results:

The goal of this research is to learn more about the effectiveness of the PCT Core Program as a tool in the treatment of PTSD. The results of the study will influence the development of this type of treatment. If positive results are found, it may lead to expansion of the project and the offering of this treatment to veterans at other VA Medical Centers. If negative results are found, it may lead to a significant modification of how this treatment is conducted. It is hoped that, in the long run, the results of this study and subsequent follow-up studies will contribute to the overall improvement of PTSD treatment outcomes with Vietnam veterans. It is likely that the results of this study will be shared with other professionals interested in treating PTSD through the publication of articles in scientific journals and/ or presentations at meetings or workshops. As outlined below, steps will be taken to insure the confidentiality of participants in the study.

8. Special circumstances

All patients admitted to the Core program will be eligible for participation in the study. If the patient has difficulty reading, he or she will be given special help in participating in the study by PCT staff members.

9. New Findings

We may learn new things during the study that you may need to know. We can also learn about things that might make you want to stop participating in the study. If so, you will be notified about any new information.

(Continuation page 4 of 6)

Title of Study: **Posttraumatic Stress Disorder Clinical Team Program Evaluation**
Principal Investigator: David J. Ready, Ph.D. VAMC: Atlanta, GA

10. CONFIDENTIALITY:

All specific information about you, including the questionnaires and study-related psychological assessment results, will be kept private and separate from your regular VA medical records. The only information concerning your participation in this study that will become part of your medical records is this signed and dated consent form (which is required by law). The assessments used in this study cannot be used in matters of VA service-connected compensation for PTSD. This means that participation in this study will not help you obtain, maintain or increase service connection for PTSD nor can it be used to prevent you from obtaining, maintaining, or increasing VA service-connected compensation.

People other than those doing the study may look at both medical charts and study records. Agencies that make rules and policy about how research is done have the right to review these records. Those with the right to look at your study records include the Office for Human Research Protections, the Government Accounting Office and the Emory University Institutional Review Board. Records can also be opened by court order. We will keep your records private to the extent allowed by law. We will do this even if outside review occurs. We will use a study number rather than your name on study records where we can. Your name and other facts that might point to you will not appear when we present this study or publish its results.

11. COMPENSATION: Study-related assessments are free of charge. There is no monetary compensation for participation in this study. In the event that injury occurs as a result of this research, medical treatment will be available. However, you will not be provided with reimbursement for medical care other than what your insurance carrier or the VHA may provide for appropriate treatment, nor will you receive any other compensation. For more information concerning the research-related risks or injuries, contact Dr. David Ready, Principal Investigator for this study at the VA at (404) 321-6111, ext. 7082. Dr. Ready can also be contacted by mail at Mental Health Service Line (116A), VA Medical Center 1670 Clairmont Rd., Decatur, GA 30033.

STUDY PARTICIPATION AND WITHDRAWAL:

Your participation is completely voluntary and you have the right to refuse to be in this study. You can stop at anytime after giving your consent. This decision will not affect in any way your current or future medical care or any other benefits to which you are otherwise entitled. The study doctor/investigator and/or sponsor may stop you from taking part in this study at any time if they decide it is in your best interest, or if you do not follow study instructions. If you wish to withdraw, please tell your therapist or call Dr. Ready at (404) 321-6111, ext. 7082 and it will be arranged. Refusal to participate will involve no penalty or loss of benefits.

(Continuation page 5 of 6)

Title of Study: Posttraumatic Stress Disorder Clinical Team Program Evaluation

Principal Investigator: David J. Ready, Ph.D. VAMC: Atlanta, GA

VA DISCLAIMER

In case of a study-related injury, you will be provided emergency medical care. Under Federal Law, subjects are eligible for follow-up treatment if the injury was study-related. Compensation may or may not be payable in the event of physical injury arising from this study. This does not apply to injuries that result from you not following study procedures.

EMORY DISCLAIMER: Although the investigator will make available or arrange for appropriate management and treatment for any physical injury resulting from this project, Emory University has made no provision for payment of costs associated with any injury resulting from participation in this study.

RESEARCH SUBJECT'S RIGHTS: I understand my rights as a research subject, and I will voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

Contact Person:

If you have any questions about this study call Dr. David J. Ready at the Atlanta VA Medical Center. Call Dr. Ready if you have been harmed from being in this study. Call Dr. James W. Keller, Chair of the Emory University Instructional Review Board, if you have any questions about your rights as a participant in this research study.

Their telephone numbers are:

David J. Ready, Ph.D. (404) 321-6111, ext. 7082

James W Keller, M.D. (404) 727-5646

To make inquiries concerning this study, contact Dr. David Ready. (404) 321-6111, ext. 7082. If you have any questions or concerns about your rights as a participant in this research study, you may contact James W. Keller, Chairman, Emory University Institutional Review Board at (404) 727-5646.

(Continuation page 6 of 6)

Title of Study: **Posttraumatic Stress Disorder Clinical Team Program Evaluation**

Principal Investigator: **David J. Ready, Ph.D. VAMC: Atlanta, GA**

Subject:

We will give you a copy of this consent form to keep.

If you're willing to volunteer for this research, please sign below.

Subject's name ----- Date ----- Time

Subject's legally authorized representative - Date ----- Time
(if required)

Person Obtaining Consent ----- Date ----- Time

10-1086 Rev. Date 4/28/04

**Emory University School of Medicine and Atlanta VA Medical Center
Research Subject Authorization**

Title: Post-traumatic Stress Disorder Clinical Team (PCT) Program Evaluation

Principal Investigator: David J. Ready, Ph.D.

Sponsor's Name: VA Medical Center

Introduction/Purpose:

You have been invited to participate in the research study that is named above. The Posttraumatic Stress Disorder Clinical Team (PCT) is conducting this study. The purpose of this study is to determine the effectiveness of treatment provided in the Core program of the Posttraumatic Stress Disorder Clinical Team.

Confidentiality and Protected Health Information (PHI):

PHI is a term we use for protected health information. PHI are any facts about you or your health that could tell someone who you are. "Researchers" are what we call the people who are conducting the study. They may need to look at your medical and study records that contain PHI. Government agencies also may need to look at your records. They make rules and policies about how research is done. They include the Office for Human Research Protections and the Food and Drug Administration. Sponsors who pay for the study also have the right to review records. So does the Emory University Institutional Review Board (IRB). Your PHI may be disclosed if a court of law should order it.

We will not use or disclose our records in any ways other than the ways we describe in this form. We will keep your records private to the extent allowed by law. We will do this even if outside review of your records occurs. We will use a study number or other code rather than your name on study records where we can. Your name and other facts that might point to you will not appear when we present this study or publish its results.

A federal law now protects the privacy of your PHI. This law is the Health Insurance and Portability and Accountability Act (HIPAA). That law says we must tell you what we will use your PHI for and how we will use and disclose it before we can let any of that happen. We give you those facts about your PHI in this section of this form. It will tell you facts you need to know such as:

1. What PHI of yours the Researchers will look at.
2. Who will collect your PHI.
3. Who will use your PHI.
4. With whom your PHI will be shared and the and why it is shared each time.
5. The date or event, if any is set, after which we won't use or disclosure your PHI any more; and

6. Your rights under HIPAA to ask us not to use your PHI any more.

You may choose to join in this research. If you do you will be agreeing to let the Researchers and any other persons, companies or agencies described below to use and share your PHI for the study in the ways that are set forth in this section. So please review this section carefully.

What PHI will the Research Team Use:

The Researchers will look at your entire medical file, which contains all of your personal identifying information and health insurance information; health care providers notes; results of laboratory tests, x-rays and other medical tests; results of physical examinations, and any other information that your health care provider may have recorded about your health or health care.

Who will Collect the PHI:

The Researchers will collect and copy the PHI described above. If any of the PHI is to be shared with other persons, as described later on in this section, then the Researchers also will be responsible for making these disclosures.

Who will Use the PHI; With Whom will it be Shared; and For What Purpose(s) Will it be Used or Shared

We have told you of our need to collect your PHI in order to conduct the study. Below is a list of who information about this study may be shared with.

Person/Entity	Purpose
Researchers	To conduct the study entitled, "____," the purpose of which is to study the safety and effectiveness of Drug Y.
Governmental Agencies with oversight over the research being conducted, including the FDA and OHRP	To monitor safety, efficacy and compliance with applicable laws and regulations.
University personnel, committees and departments charged with oversight of research, including the IRB.	To monitor safety and compliance with applicable laws, regulations and University policies and procedures.
Statisticians hired by the study sponsor.	To perform data analysis.

Expiration Date or Event

The Researchers will continue to use your PHI until the date or event listed below, at which point your Authorization to use your PHI will end and all identifiers will be removed from your information making it impossible to link you to the study: At the time at which the study is closed and the period for which any records relating to the study must be retained has ended.

APPENDIX F

EMORY/VA Approval for Research

FROM: Jim Henderson
Sr. Research Protocol Analyst
VA-Emory IRB Liaison

TO: David Ready, PhD
Principal Investigator

CC: Mascaro Nathan Psychiatry - Main

DATE: April 2, 2009

RE: **Notification of Continuing Review Full Board Approval**
CR2_IRB00003258

IRB00003258
Group Based Exposure Therapy for Combat PTSD: RCT and Feasibility Study

This is your notification that your above referenced Continuing Review was reviewed and APPROVED under the Full Board review process by Committee B. This approval is valid from 4/1/2009 until 3/31/2010. Thereafter, continued approval is contingent upon the submission of a renewal form that must be reviewed and approved by the IRB prior to the expiration date of this study.

Any reportable events (serious adverse events, breaches of confidentiality, protocol deviation or protocol violations) or issues resulting from this study should be reported immediately to the IRB and to the sponsoring agency (if any). Any amendments (changes to any portion of this research study including but not limited to protocol or informed consent changes) must have IRB approval before being implemented.

All correspondence and inquires concerning this research study must include the IRB ID, the name of the Principal Investigator and the Study Title.

Sincerely,

Jim Henderson
Sr. Research Protocol Analyst
VA-Emory IRB Liaison

This letter has been digitally signed

Emory University
1599 Clifton Road, 5th Floor - Atlanta, Georgia 30322
Tel: 404.712.0720 - Fax: 404.727.1358 - Email: irb@emory.edu - Web: <http://www.irb.emory.edu/>
An equal opportunity, affirmative action university

Anderson, Crystal R

From: Fantahun, Meron
Sent: Tuesday, February 26, 2008 2:06 PM
To: Ready, David PhD
Cc: Anderson, Crystal R
Subject: Credentialing Completed

Dr. Ready,

This is to notify you that the following Research Assistant from your lab has successfully completed the credentialing process. The name and the date of the assistant that received the final approval from the Medical Center Director is listed below. This approval allows this Assistant to participate in the conduct of Human Studies Research.

Crystal Anderson/ completion date 02/26/2008

The Scope of Practice Form should be updated every two years from the Medical Center Director's approval date, or as necessary. If there are any changes to your Assistant's employment status or responsibilities, please notify Meron Fantahun (Ext. 6177) in the Human Resources Dept. located in the Research Office.

Please contact me if you have any questions.

Thank you for your help!

Meron

*Meron Fantahun
WOC Training Coordinator
Atlanta Research and
Education Foundation
1670 Clairmont Rd., 151F
Decatur, GA 30033
404-321-6111 ext. 6177
Fax: 404-417-1841*

2/26/2008

APPENDIX G

UGA IRB Approval

PROJECT NUMBER: 2009-10684-0

TITLE OF STUDY: Wounded Warriors: Predictors for Treatment Outcome of Group-Based Exposure Therapy for Veterans with Combat-Related PTSD

PRINCIPAL INVESTIGATOR: Dr. Cheryl D. Dozier

Dear Dr. Dozier,

The University of Georgia Institutional Review Board (IRB) has reviewed and approved your above-titled proposal through the exempt (administrative) review procedure authorized by 45 CFR 46.101(b)(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

You may now begin your study. Your approval packet will be sent by mail.

Please remember that no change in this research proposal can be initiated without prior review. Any adverse events or unanticipated problems must be reported to the IRB immediately. The principal investigator is also responsible for maintaining all applicable protocol records (regardless of media type) for at least three (3) years after completion of the study (i.e., copy of approved protocol, raw data, amendments, correspondence, and other pertinent documents). You are requested to notify the Human Subjects Office if your study is completed or terminated.

Good luck with your study, and please feel free to contact us if you have any questions. Please use the IRB number and title in all communications regarding this study.

Thank you,

Kim Fowler
Human Subjects Office
606A Boyd Graduate Studies Research Center
University of Georgia
Athens, GA 30602-7411
kfowler@uga.edu
Telephone: 706-542-5318
Fax: 706-542-3360
<https://www.ovpr.uga.edu/compliance/hso/>