

UNIVERSITY OF HAWAII LIBRARY

ASSESSMENT OF SOCIAL SUPPORT AMONG VETERANS WITH MILITARY-
RELATED POST TRAUMATIC STRESS DISORDER:
A STUDY OF THE SOCIAL SUPPORT QUESTIONNAIRE

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE
UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

SOCIAL WELFARE

December 2002

By
Lori Rae Daniels

Dissertation Committee:

Joel Fischer, Chairperson
Velma Kameoka
Chuck Mueller
Evaon Wong-Kim
John Carlson

© Lori Rae Daniels
December, 2002

ACKNOWLEDGEMENTS

A special thank-you for assistance and support with this study:

Rebecca Beardsley

Kent Drescher

David Foy

Fred Gusman

Douglas Hazelwood

Eva Hillman

Linda McLaughlin

Leslie Morland

Kathleen Pierce

Julia Whealin

The National Center for PTSD - Pacific Islands Division
Honolulu, HI

The Office of Academic Affairs
Department of Veterans Affairs, Washington, DC

The Palo Alto VA Healthcare System
Menlo Park, CA

ABSTRACT

Numerous studies in the past 20 years have found an inverse correlation between social support and post-traumatic stress disorder (PTSD). However, the social support literature is encumbered by a wide-spread inconsistency of social support measurement, with many studies not using existing validated measures. Identifying a valid social support measure with clinical utility among veterans diagnosed with war-related (PTSD) would be a helpful resource for clinicians. Using data from 689 veterans seeking treatment from a VA PTSD program, the reliability, factor structure, and construct validity of the Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Sarason, 1983) were evaluated. The hypothesis of this study was based on the theoretical assumption that social support (as measured by the SSQ), would be inversely correlated with severity of PTSD symptoms (as measured by the Mississippi Scale for War-related PTSD; Keane, Caddell & Taylor, 1988) and depression (as measured by the Beck Depression Inventory; Beck, 1961). In this study, the SSQ scores were found to inversely correlate at a low, but statistically significant level, with both PTSD and depression scores. Principal axes factor analysis found that the two subscales of the SSQ were each measuring one factor. The correlation between the SSQ “N” scores and “S” scores suggest that these subscales are measuring different components of social support. Numerous implications for research and clinical practice are discussed. This study is the first to psychometrically evaluate a measure of current social support for use among war veterans diagnosed with PTSD.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
ABSTRACT	v
LIST OF TABLES	ix
CHAPTER 1: INTRODUCTION	1
PTSD Among War Veterans	6
History of PTSD Among War Veterans	6
Definition and Prevalence of PTSD	7
Risk Factors	9
Social Support	10
Correlates of Social Support	16
Social Support and PTSD	17
Social Support at Homecoming	18
Current Social Support and PTSD	20
Social Support and Depression	24
Social Support and Coping	27
Measurement of Social Support	29
Social Provisions Scale	33
Perceived Social Support Scale	34
Social Support Questionnaire	34
Other social support measures used among war veterans	35
Summary	37
The Present Study	38
Hypotheses	38
CHAPTER 2: METHOD	40
Data Set	40
Participants	41

Measures	45
Mississippi Scale for Combat-related PTSD	45
Beck Depression Inventory	46
Social Support Questionnaire (SSQ)	46
COPE Inventory and Brief COPE.....	47
Procedures	50
Data Analysis	51
CHAPTER 3: RESULTS	52
Description of measures.....	54
Reliability.....	55
Factor Structure	56
Concurrent Validity	57
Construct Validity	59
Convergent Validity	60
Discriminant Validity	61
CHAPTER 4: DISCUSSION	64
Summary of Results.....	64
Comparison of findings with existing literature	65
Social support measurement	65
Comparisons of the psychometric evaluations of the SSQ	67
Present study as compared to Green and Berlin (1987)	70
Current social support and war-related PTSD	71
Limitations of the study	72
Use of self-report measures	72
Homogeneity of the sample	72
Possible over-reporting of problems	73
Limitations of the data set	74
Limitations of the measures	75
Levels of significance	77
Limitations of the SSQ measure	77

Implication for future research	78
Implications for practice	80
Micro-level intervention	80
Mezzo-level intervention	82
Conclusion	84
Appendix A: Social Support and PTSD Studies	85
Appendix B: Perceived Social Support Measurement Studies	93
Appendix C: The Social Support Questionnaire	98
Appendix D: The Revised Mississippi Scale	107
Appendix E: The Beck Depression Inventory	109
Appendix F: The Brief COPE	111
References	112

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Demographic characteristics of respondents	43
2. Brief COPE sub-scales, internal reliability estimates and item numbers	50
3. Summary of descriptive statistics and reliability estimates of SSQ N and S scores, BDI, Mississippi scales, and Brief COPE Inventory	57
4. Correlation of Social Support Questionnaire with Depression and PTSD measures	60
4. Summary of descriptive statistics and reliability estimates of the Brief COPE	61
5. Correlations with SSQ scores and Composite Score from two items of the Brief COPE	63

CHAPTER 1

When Johnny comes marching home again, Hurrah! Hurrah!
We'll give him a hearty welcome then, Hurrah! Hurrah!
The men will cheer, the boys will shout,
The ladies they will all turn out,
And we'll all feel gay
When Johnny comes marching home.

Get ready for the Jubilee, Hurrah! Hurrah!
We'll give the hero three times three, Hurrah! Hurrah!
The laurel wreath is ready now
To place upon his loyal brow,
And we'll all feel gay
When Johnny comes marching home.

Let love and friendship on that day, Hurrah! Hurrah!
Their choicest treasures then display, Hurrah! Hurrah!
And let each one perform some part
To fill with joy the warrior's heart,
And we'll all feel gay
When Johnny comes marching home.

- WHEN JOHNNY COMES MARCHING HOME

By Patrick Sarsfield Gilmore (Civil War Song)

Many American veterans assumed that upon serving their country, they would receive accolades and appreciation from American citizens. The Civil War song “When Johnny Comes Marching Home” contains numerous lyrics suggesting civilian support for returning war heroes. Throughout this patriotic hymn, written over 150 years ago, widespread social support by the civilian public toward soldiers returning from war is encouraged. Unfortunately, the idealistic “welcome home” has not been always provided to veterans who return from military war service in the past century (Borus, 1973; Yerkes & Holloway, 1996). Many World War II veterans reported receiving a hero’s welcome in the form of parades and patriotic slogans supporting soldiers serving overseas. Korean War veterans also received support from the American public, although they were greeted in a more subdued manner than WWII soldiers. In contrast to a hero’s welcome, many veterans from the Vietnam War were greeted upon returning to the United States by anti-war protestors and angry crowds (Johnson, Lubing, Rosenheck, Fontana, Southwick, & Charney, 1997).

The prevailing anti-war sentiment and lack of social support resources appears to have contributed to the Vietnam veteran’s readjustment difficulties in civilian life. Vietnam veterans have reported feeling ashamed about their war-zone service (Fontana & Rosenheck, 1994). Instead of experiencing pride in serving their country, some Vietnam veterans have described feeling alienated from family members and friends. A cycle of readjustment difficulties began - lack of emotionally supportive responses toward the Vietnam War fostered soldiers’ doubts about the legitimacy and justifiability of their involvement in the war (Fontana & Rosenheck, 1994).

Lack of social support limits a veteran's ability to talk about his or her war experiences and feelings. Open discussions with friends and family could assist the veteran in emotionally accepting perceptions and feelings toward these war-zone experiences (Fontana & Rosenheck, 1994). However, due to the American public's condemnation of the Vietnam War and the general lack of social support, opportunities for veterans to debrief their war experiences were rare. War veterans often chose to be silent and not discuss traumatic events they witnessed during Vietnam. This silence may have resulted in acute traumatic stress disorder among many Vietnam veterans. Symptoms of acute stress disorder exacerbate the problems associated with lack of social support. War veterans suffering from acute traumatic stress tend to decrease their socialization with others, have increased difficulty sleeping, become increasingly irritable with others, and feel emotionally disconnected or detached (American Psychiatric Association, 1994). As these acute stress reactions become repetitive and unresolved, the symptoms can evolve into Post Traumatic Stress Disorder (PTSD) (Fontana, Rosenheck, & Horvath, 1994). This symptom pattern can spiral as PTSD symptoms become more chronic and severe. Confirming these observations, Fontana and Rosenheck (1994) used logistical regression equation to predict the probability of veterans from the National Vietnam Veterans Readjustment Study being diagnosed with PTSD. They concluded that lack of support upon returning from the Vietnam War limited opportunities for these veterans to assimilate their war experiences, and the lack of communication about their experiences resulted in increased likelihood of being diagnosed with PTSD (Fontana et al., 1997).

Several studies have identified social support resources (e.g., homecoming reception; receipt of material aid; receipt of physical assistance; ability to share thoughts/feelings in conversations with others; receipt of advice from others; receipt of guidance or information from others; and positive social contacts with others) as an important factor associated with improved readjustment difficulties and reduced PTSD symptoms (Borus, 1973; Boscarino, 1995; Green, Grace, Lindy, Gleser, & Leonard, 1990; Johnson et al., 1997; Fontana et al., 1997; Shehan, 1987). Numerous studies also have suggested that social relationships and perceptions about the quality of these relationships may be related to a war veteran's PTSD symptoms and coping after war-zone service (Bailey, 1997; Barrett & Mizes, 1988; Barrett, Resnick, Foy, Dansky, Flanders & Stroup, 1996; Chavoya, Lamparki & Fairbank, 1985; King, King, Foy, Keane & Fairbank, 1999; Sarason, Levine, Basham, & Sarason, 1983; Sarason & Sarason, 1982; Solkoff, Gray, & Keil, 1986; Stretch, 1985;). For example, Boscarino (1995) found that Vietnam Veterans with low social support had nearly 80% greater risk for developing PTSD than veterans with an "average" amount of social support. The overall conclusions of these studies suggested that lack of social support increases a war veteran's risk for PTSD. However, as will be discussed in detail in the Measurement section of this dissertation, many of the authors of the above studies did not use validated social support measures, which may undermine their conclusions in these studies.

Given the literature suggesting lack of social support as a risk factor for the development of PTSD among Vietnam veterans, one would hope that mental health professionals and social workers are assessing social support when treating veterans

with PTSD. In addition, assessment of social support resources provides social workers the opportunity to assess the social environment of the PTSD veteran during his or her PTSD recovery efforts. A social support assessment may provide social workers important information for the development of an effective treatment plan and assist in determining interventions that may enhance social support resources for a veteran client. Many PTSD programs, however, do not use validated social support assessment instruments when identifying social support resources available to their clients.

In light of this deficit, the proposed study will focus on the assessment of social support among veterans diagnosed with war-related post traumatic stress disorder. Specifically, the purpose of this study is to contribute to the knowledge base regarding social support assessment by evaluating the utility of the Social Support Questionnaire (SSQ; Sarason et al., 1983) for use among war veterans diagnosed with PTSD. The SSQ has been studied with college student populations, yielding results suggesting that a high level of perceived social support may function as a buffer against the negative effects of stress (Sarason et al., 1983). The appropriateness and adequacy of the SSQ for use among war veterans has yet to be evaluated. In light of this need, this study examined the reliability and validity of the SSQ for use among war veterans diagnosed with PTSD.

To clarify the rationale for this study, the following sections provide a review of the relevant literature on war-related PTSD, followed by a review of the social support literature (including buffering theories of social support), studies of social support among war veterans diagnosed with PTSD, and the assessment of social support.

PTSD Among War Veterans

History of PTSD Among War Veterans

The emotional consequences of war among former soldiers are not new observations. In 1597, Shakespeare wrote in “King Henry IV- Part I” of Lady Percy’s observations of her husband, Hotspur, and his ongoing struggle with war memories (Shakespeare, 1597). After the Civil War, physicians began noting that former soldiers had “nostalgic” reactions after the war ended; they termed the illness “soldier’s heart,” indicating a soldier’s heart was still feeling pain from the war (Perkal, 1993). In WWI, physicians termed the psychological breakdowns that soldiers experienced in the war-zone as “shell shock,” implying a ricochet from bombshells physically damaged a soldier’s head. In WWII and the Korean War, the term “combat fatigue” or “battle fatigue” was adopted to describe soldiers’ psychological breakdowns and refusals to continue fighting. After the Vietnam War, the psychiatric community began noticing that former soldiers were complaining of common psychological symptoms, months and years after leaving the war-zone. Several years later, the term “Delayed Stress Syndrome” began to be used in describing ongoing psychological effects of combat exposure (Perkal, 1993). PTSD was not formally recognized by the psychiatric community until the publication of the Diagnostic and Statistical Manual, 3rd Edition (*DSM-III*; APA, 1980). Since 1980, the diagnostic definition of PTSD has changed in subsequent editions of the diagnostic manual (APA, 1987; APA, 1994).

Definition and Prevalence of PTSD

The American Psychiatric Association (APA; 1994) defines Post Traumatic Stress Disorder as a disorder that occurs after a person has been exposed to a traumatic event in which the person experienced or witnessed an event that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others. In addition, PTSD involves intense fear, helplessness or horror (APA, 1994).

The APA definition of PTSD describes three major symptom clusters. The first symptom cluster is of the patient reexperiencing memories of the traumatic event. These reexperiencing symptoms are identified as vivid and unwelcome recollections of the traumatic event, recurrent distressing dreams of the event, feeling psychologically distressed about internal or external reminders of the original traumatic event and experiencing physiological reactivity when recollection of the traumatic event occurs (APA, 1994).

The second PTSD symptom cluster describes a patient's avoidance and affective numbing against trauma memories. The avoidance symptoms are indicated by increased social isolation, and a marked decrease in involvement in social activities (APA, 1994). Other research has identified veteran trauma survivors reporting flattened affect and increased likelihood of abusing alcohol or drugs (Kulka et al., 1990). In addition, avoidance behaviors may be manifested in the form of non-chemical maladaptive behaviors such as excessive work, involvement in dysfunctional relationships, maintaining a crisis-oriented lifestyle, or gambling addiction (Abueg & Fairbank, 1992; Daniels & Scurfield, 1994).

The third symptom cluster of PTSD refers to the patient's psychological and physiological arousal. These arousal symptoms appear behaviorally as angry outbursts, difficulty in sleep onset, hypervigilance of the environment, hyperstartle response to loud noises, and constant irritability (APA, 1994).

There have been several prevalence studies that estimate rates of PTSD among war veterans. In a 21-year follow-up study, Card (1987) estimated the lifetime prevalence of PTSD among Vietnam veterans to be 19.3 %, in comparison to 12.9 % among veterans of other wars, and 12.1 % among non-veterans. In the largest PTSD prevalence study conducted nationally, Kulka, Schlenger, Fairbank, Hough, Jordan, Marmar, and Weiss (1990) estimated that over 15 % of male Vietnam veterans in the United States (479,000 men who were actually stationed in the war-zone) and 8.5 % of female Vietnam veterans (610 women who were stationed in the war-zone) were suffering from PTSD at the time of the study. Prevalence estimates also indicated that 30.6 % of male theater veterans have suffered from PTSD at some time in their lives since their military experience in the Vietnam War. Similar lifetime prevalence estimates were provided by Davidson and Fairbank (1993), which ranged from 19.3 % to 30.9 %. Thus, at least 19% of Vietnam veterans have suffered from PTSD symptoms sometime in their lifetime, and between 8-15% currently have the diagnosis. Conversely, approximately 60-80% of Vietnam veterans do not meet the diagnostic criteria for PTSD. Factors that contribute to increased vulnerability to PTSD have been the focus of numerous studies during the past twenty years. The following section discusses the literature focusing on these PTSD risk factors.

Risk Factors

The literature is replete with studies attempting to identify predictors of war-related PTSD. These studies have suggested the following risk factors associated with veterans developing PTSD: (a) childhood factors, such as childhood physical abuse, substance abuse in the family of origin (Donovan, Padin-Rivera, Dowd & Blake, 1996; Emery, Emery, Shama, Quiana, & Jassani, 1991; King et al., 1999) or being raised in a non-cohesive family; (b) family instability and childhood antisocial behavior (King et al., 1999); (c) disorders such as depression and dysthymia, antisocial personality disorder, agoraphobia and simple phobia (O'Toole, Marshall, Schureck & Dobson, 1998; Menger, 1987), (d) lower precombat intelligence (Macklin et al., 1998), (e) age and education level in the war-zone (Green et al., 1990); (f) peritraumatic dissociation (Shalev, Peri, Canetti, & Schreiber, 1996), (g) exposure to combat (Boscarino, 1995; Bullman, Kang & Thomas, 1991; Fontana & Rosenheck, 1994; Hendrix, Jurick & Schumann 1995; Horvath, 1997; Kulka et al., 1990; Solkoff et al., 1986), (h) intense war-zone stressors such as military special unit assignments or being exposed to grotesque death in the war-zone (Green et al., 1990); (i) heredity (True & Pitman, 1993), (j) familial psychiatric history (Connor & Davidson, 1997), (k) lack of social support at homecoming from the war-zone (Green et al., 1990); and (l) lack of social support prior to military service and after military service (Boscarino, 1995; Fontana et al., 1997; Hendrix et al., 1995; Johnson et al., 1997; King et al., 1999; Solkoff et al., 1986). These risk factors vary from pre-military experiences (childhood experiences, dysfunctional upbringing), to military situations (war-zone stressors), to post-military experiences (lack of homecoming support, lack of social support).

Lack of social support is a risk-factor that has two perspectives that may be associated with chronic PTSD: perceived social support upon returning from the war-zone (Fontana et al., 1997; Johnson et al., 1997) and current levels of social support (Boscarino, 1995; Green et al., 1990). Knowledge regarding the role of current social support resources is important in order to enhance intervention options for practitioners working with war-veterans diagnosed with PTSD. Therefore, the primary emphasis discussed in this dissertation is social support and PTSD.

Many of the above social support studies suggest that lack of social support increases a soldier's vulnerability for PTSD. The literature, however, provides a variety of conceptualizations and definitions of social support, as well as variations in measurement of the construct. These variations are discussed in the next section.

Social Support

Originally, social support was studied in the field of sociology where the construct was identified as playing a role in mediating the effects of stress on physical and mental health (Jemmott & Locke, 1984; Lieberman, 1982). However, there does not appear to be a consistent definition of social support in this literature.

Turner, Frankel, and Levin (1983) discussed the various definitions of social support and noted that most definitions focus on the helping elements and processes of interpersonal relationships in which one is involved. Taylor, Peplau, and Sears (1994) simply defined social support as the interpersonal exchange in which one person provides a form of assistance to another. Cohen and Syme (1985) defined social support as "the resources provided by other persons...useful information or things (p. 4)." Sarason et al. (1983) based their definition of social support on the interpersonal

relationships between the recipient and others. “Social support is usually defined as the existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us” (Sarason et al., 1983; p. 127). Sarason and colleagues proposed two basic elements of social support: (a) an individual’s perception that there are sufficient number of others available to whom one can turn in times of need and (b) the individual’s degree of satisfaction with the available support (Sarason et al., 1983).

One of the most cited definitions of social support was proposed by Cobb (1976). Cobb characterized social support as the availability of one or more of the following three types of information: (a) information leading the individual to believe that he or she is cared for and loved; (b) information leading the individual to believe that he or she is esteemed and valued; or (c) information leading the individual to believe that he or she belongs to a network of communication and mutual dialogue. While often cited, Cobb’s definition has been criticized because his definition does not address material and instrumental support (Thoits, 1982).

The literature identifies two perspectives on social support. One perspective focuses on “structural support” which is also referred to as the structural perspective or social network. The second perspective on social support focuses on the “functions of support resources.” In relation to the functional aspect of social support, the literature has focused on two competing hypotheses about the role of social support in ameliorating various mental health outcomes. These two hypotheses are the direct (or main) effect and buffering effect hypotheses (Cohen & McKay, 1984; Cohen & Syme,

1985; Cohen & Wills, 1985; Flannery, 1990; Kessler & McLeod, 1985; Lieberman, 1982; Thoits, 1982; Turner, 1981; Turner et al., 1983).

The direct effect hypothesis postulates that a direct benefit occurs as a result of one's perception that others will provide assistance in the event of stressful occurrences. It assumes that a supportive social network promotes an elevated sense of self-esteem and a feeling of control over the environment (Cohen & Syme, 1985).

The buffering effect hypothesis has been widely discussed in the literature (Cobb, 1976; Cohen & McKay, 1984; Cohen & Syme, 1985; Cohen & Wills, 1985; Flannery, 1990; Kessler & McLeod, 1985; Lakey & Cohen, 2000; Lieberman, 1982; Thoits, 1982; Turner et al., 1983). The buffering hypothesis states that an individual's social supports are beneficial in the presence of stressful life events by protecting the individual from the negative effects of these events. Cohen and Syme (1985) proposed two possible stress-buffering mechanisms. The first mechanism is described as the recipient's perception that others can and will provide necessary resources during times of stress, which, in turn, results in decreased risk for negative stress reactions. The second mechanism is described as alleviating or reducing stress reactions that influence an individual's physiological reactions. In other words, due to their perception of having adequate social support resources, individuals with high levels of social support may not be as physiologically impacted by stressful situations as compared to those individuals with inadequate social support (Cohen & Wills, 1985; Cohen & Syme, 1985). In support of the buffering hypothesis, Wilcox (1981) found that in stressful situations, individuals with high levels of social support reported less emotional and

psychological discomfort, whereas those with low levels of social support experienced increased emotional distress.

Also, in studying the mental health benefits of social support, Turner (1981) found that social supports significantly helped an individual's psychological well being by mitigating the negative effects of stressful events. Lakey and Cohen (2000) call this type of buffering effect the appraisal perspective: when an individual's beliefs of available support (perceived support) influences appraisal of stressful situations, this will buffer the effects of stress on health outcomes.

Thoits (1982) concluded that studies focusing on the buffering hypotheses must be interpreted cautiously. In reviewing numerous social support studies, Thoits (1982) noted that the specific elements of support that are determined as having a buffering effect against stress were not clearly identified. In these studies, components of an individual's social support network could not be directly credited with buffering an individual against stressful events and, therefore, the buffering effect was not clearly demonstrated.

Numerous studies found evidence supporting both direct and buffering effects of social support on physical health and psychological well-being (Cohen & Syme, 1985; Cutrona & Russell, 1990, 1987; Flannery, 1990; Helgeson & Cohen, 1996; Sarason, Sarason, Potter, & Antoni, 1985). Cohen and Wills (1985), however, suggested that the direct effect and buffering effect hypotheses are not mutually exclusive. These authors argued that social supports not only assist an individual in coping with stressful events (buffering effect) but, also, social network integration operates to maintain

feelings of stability and well being regardless of the type and level of stressful life events (main effect).

Cohen, Gottlieb, and Underwood (2000) make a distinction between social support and social relationships. These authors define social support as an individual's perceived social resources available or actually provided by nonprofessionals in both formal support groups as well as informal helping relationships. Social relationships, according to Cohen et al. (2000), describe an individual's various social groups that impact on the individual's psychological and physical health.

This review of the social support literature illustrates the wide variations in definitions and conceptualizations of social support. These variations have resulted in a body of literature that lacks consistent definitions of the concept of social support, lacks strong evidence-based theory or conceptualization of social support, and lacks clear explanations of the methodological procedures in which social support has been assessed. Ambiguous and varying definitions of social support also have led to criticisms of inconsistent and unpersuasive measurement of social support. In this regard, Thoits (1982) argued that researchers have failed to offer explicit and precise conceptual definitions of social support that can be operationalized for scientific study. She stated that imprecise conceptualizations of social support might likely result in questionable and invalid research findings. Potential problems include findings that are biased and a lack of clarity concerning the relationship between social support, life-events, and psychological disturbance (Thoits 1982).

Lieberman (1986) similarly critiqued social support research. He noted that studies often attempted to oversimplify a recipient's social support relationships and

failed to account for the complexity of those relationships. Lieberman (1986) argued that some research findings contradict the assumption that people who have social resources use those resources, and experience less distress as a result. He stated that understanding the type of stress being experienced by someone, as well as the personal characteristics of an individual receiving the support, are necessary to determine the role of social supports in helping individuals cope with stressful situations (Lieberman, 1986). Thoits (1982) and Lieberman (1986) both suggested that more specific information regarding characteristics of the individual, the nature of stressful situations, elements of social support, as well as effects of social support, are necessary to better understand the effects of social support on well-being.

Pierce, Lakey, Sarason, Sarason, and Joseph (1997) elaborated on the conceptualization of social support. Recognizing that early epidemiological studies defined social support as part of the social environment, these authors acknowledge that personality may play a role in social support processes. Pierce and colleagues explain that personality characteristics may serve as a threat to the construct validity of social support measures, due to personality being a possible major contributor to health and well-being. These authors state that perceived support and personality qualities of an individual are not independent of one another, and therefore an individual's personality characteristics need to be taken into account when measuring social support. Furthermore, Pierce et al. (1997) suggest that social support is neither a product of personality nor the social environment, but a unique matching of properties of the social interaction and the personalities of participants within the relationship.

In spite of the ongoing criticism regarding the complex definition of social support, measures have been developed and studied among various populations to better determine the role of social support in mediating physical problems and emotional distress. The following section reviews studies that investigated some of the hypothesized correlates of social support, particularly in relation to PTSD.

Correlates of Social Support

Numerous studies suggest that levels of social support influence an individual's response to various physical and emotional problems. Several studies found that social support decreased illness, increased likelihood of remaining physically healthy under stressful circumstances, and improved recovery rates from illness or surgery (Berkman, Vaccarino, & Seeman, 1993; Cohen & McKay, 1984; Cohen & Syme, 1985; Cohen & Wills, 1985; Helgeson & Cohen, 1996; House, Landis, & Umberson, 1988; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). In addition, studies have shown that socially supportive relationships reduce recipients' emotional distress during negatively stressful situations (Cohen & Wills, 1985; Coyne & DeLongis, 1986; Kessler & McLeod, 1985; Steinberg & Gottlieb, 1994). In a nine-year study, Berkman and Syme (1979) examined the relationship between mortality rates and four different types of social ties: marriage, contacts with extended family/friends, church membership, and group affiliations. Their findings indicated that persons who have few social ties are twice as likely to die than persons with a greater number of social ties, even when other variables such as smoking, alcohol consumption, physical activity, obesity, race, life satisfaction and use of preventive medicine are controlled (Berkman & Syme, 1979). Orth-Gomer and Unden (1987) and Kaplan et al. (1988) conducted similar studies that examined the

relationship between social connections and mortality. Each study similarly concluded that mortality rates decrease as the number of social relationships and social connections increase.

Although numerous correlates of social support have been investigated in the literature, this study will focus on two primary ones: post-traumatic stress disorder (PTSD) and depression. The reason for discussing these particular correlates is based on the purpose of this study, which is to evaluate the reliability and validity of the Social Support Questionnaire (SSQ) for use among war veterans diagnosed with PTSD. The validity of the SSQ will be evaluated by examining the hypothesized relationships between social support, as measured by the SSQ, post-traumatic stress disorder, and depression. Discussion of the literature regarding the relationship between social support and PTSD, and social support and depression is necessary in this study's evaluation of the SSQ's psychometric properties for use among war veterans.

Social Support and PTSD. Studies of trauma survivors have found a significant relationship between lack of social support and post-traumatic stress disorder. These studies have investigated social support at different time frames: immediately after-war-zone homecoming (e.g., within the first year of return) and on an ongoing basis many years after veterans return from the war-zone (e.g., current social supports). Appendix A summarizes various publications discussing the relationship of social support among samples of individuals diagnosed with PTSD. The Appendix provides an overview of the authors, citations, how social support was measured, how PTSD was measured and relevant conclusions.

Social support at homecoming. Low levels of social support from family and friends upon a veteran's return home from the war-zone may contribute to the development of PTSD. Stretch (1985) measured social support using questions from the Vietnam-era Veterans Adjustment Survey (VEVAS) concerning veterans' social support during the war and after their service in Vietnam. The findings indicated that veterans who reported negative or non-supportive interactions with others since returning home from Vietnam reported significantly higher PTSD symptoms when compared to Vietnam veterans whose interactions were primarily supportive or positive. Stretch (1985) also found that social support received within the first year back from Vietnam accounted for 12% of the explained variance in PTSD symptoms and combat level accounted for another 12% of the variance. Also, veterans who reported negative or hostile societal reactions upon returning from Vietnam had significantly higher levels of PTSD symptoms than veterans who reported receiving positive social support (Stretch, 1985).

In a similar study comparing Vietnam veterans with Vietnam-era veterans (i.e., veterans who were active-duty during the Vietnam War, but who were not stationed in Southeast Asia), Stretch (1986) found that lack of positive social support was consistently associated with high levels of PTSD symptoms. Stretch (1986) postulated that the onset of PTSD might involve failure of veterans' social support systems to encourage catharsis or abreaction of their combat experiences. Also, veterans' inability to cope successfully may result from lack of validation or legitimization of their traumatic war experiences.

Solkoff et al. (1986) interviewed 50 Vietnam combat veterans diagnosed with PTSD and 50 non-PTSD combat veterans to identify factors that contribute to a diagnosis of PTSD. The authors found that veterans diagnosed with PTSD reported less support from family and spouses upon their return home from the war-zone. Solkoff et al. (1986) did not use a validated measure of social support, but assessed support using open-ended questions asked during the interviews.

A more recent study using archival data from the National Vietnam Veterans Readjustment Study (NVVRS; Fontana et al., 1997) found that exposure to combat and lack of support from family and friends at the time of veterans' homecoming were related to likelihood of having PTSD. They measured social support using items contained in the NVVRS data set that concerned unit cohesion and homecoming support. Fontana et al. concluded that lack of support upon returning home from the war-zone closed off opportunities for veterans to constructively assimilate their war experiences. Veterans' lack of communication with others concerning their war experiences resulted in acute stress reactions that often became repetitious, eventually persisting as PTSD.

Green and Berlin (1987) identified five psychosocial variables related to the diagnosis of PTSD among Vietnam veterans being treated at a VA facility, and found results consistent with the above findings. These authors measured social support using Sarason's SSQ (Sarason et al., 1983). Green and Berlin (1987) added three additional questions to the SSQ, specifically querying veterans regarding their social support resources during their first year after returning from the Vietnam War. The authors found a negative correlation between PTSD symptoms and veterans' use of social

supports during the first year of return from Vietnam ($r = -.26; p < .05$). In addition, their study found a significant reduction of social supports within veterans' first year of returning from the war-zone. These researchers piloted their modified version of the SSQ on a small sample of veterans prior to their study; however, they performed no psychometric evaluation of the SSQ and, therefore, were unable to address the reliability and validity of the SSQ among the PTSD veteran population.

Johnson et al. (1997) used homecoming experience to assess social support and developed a self-report measure of the homecoming experience among Vietnam veterans with PTSD. They collected data on the frequency of events, intensity of feelings, and level of support from 247 inpatient veterans receiving PTSD treatment. These researchers found that homecoming stress is the most significant predictor of current PTSD symptomology, superseding combat exposure, childhood and civilian traumas, and stressful life events (Johnson et al., 1997).

Current social support and PTSD. Other social support and PTSD studies have examined current and on-going social support. Fontana et al. (1997) argued that it is likely that the support available to Vietnam veterans from family and friends upon their homecoming from the war was typical of the amount of support available to the veteran in ensuing years. Therefore, lower levels of social support received by veterans upon homecoming would be indicative of lower levels of social support received by veterans for many years following their return from the war-zone.

In a study examining the role of social support among Vietnam veterans, Boscarino (1995) used a measure of current social support focused on veterans' perceptions of the availability and adequacy of social support. Through interviews with

veterans who responded to questions regarding numbers of close friends, satisfaction with relationships, and who they relied upon in times of trouble, Boscarino found that veterans exposed to traumatic war events reported lower social support in their current lives and higher rates of PTSD. Boscarino also found lack of support was associated with high levels of mental health problems such as general anxiety, depression, and alcohol abuse. Based on these findings, Boscarino concluded that therapeutic interventions with Vietnam veterans should not overlook the significance of social support for war trauma survivors.

Keane, Scott, Chavoya, Lamparski and Fairbank (1985) assessed social support among Vietnam veterans diagnosed with PTSD, Vietnam veterans who were well adjusted, and Vietnam veterans who were not in combat but were hospitalized in a VA Hospital. In assessing social support, the authors did not use a validated social support measure. Instead, they developed questions asking veterans who they resided with upon returning home from the war, who were their friends and neighbors, and five questions regarding material aid, physical assistance, who they shared their thoughts/feelings with, their positive social contacts, and who they sought out for advice/guidance. Keane et al. (1985) found that among veterans with PTSD, social support declined over time to extremely low levels, while those in the comparison groups reported either stable or improved social support. The authors concluded that these findings were indicative of combat veterans' perception of diminished social support upon returning home from the war zone, and combat veterans' resistance to discussing with others the details of their war-zone experiences.

Barrett and Mizes (1988) studied four groups of Vietnam veterans, distinguishing the groups by high or low exposure to combat and by the veterans' ratings of high or low social support upon returning from the war-zone. These investigators found that veterans who received high social support reported fewer symptoms of PTSD and physiological complaints than those with low social support. Barrett and Mizes (1988) also performed step-wise multiple regression analyses on the dependent variables of PTSD (as measured by a PTSD assessment instrument developed for the study), depression (as measured by the Beck Depression Inventory), and other psychological symptoms (as measured by the Hopkins Symptom Checklist). These authors used premorbid adjustment (as measured by an instrument developed for the study), combat exposure level (as measured by Figley's Combat Severity Scale), and social support (using a 30-question social support scale developed especially for the study) as predictor variables. No psychometric evaluation was performed on the social support scale. In spite of the lack of psychometric information regarding the social support measure used in this study, social support was found to account for 34% of the total variance in PTSD symptoms, with combat level accounting for 22% of the variance (Barrett & Mizes, 1988).

In a study on familial social support, Hendrix et al. (1995) found significant positive correlations between veterans' combat exposure and the development of psychological impairment, as well as negative correlations between psychological impairment and veterans' satisfaction with their family. Based on these findings these investigators suggested the need for increased family-focused interventions for survivors of trauma. This study further supports the importance of familial social

support in facilitating psychological readjustment of war veterans and suggests that veterans' satisfaction with family support can mediate the negative effects of combat exposure on post-combat adjustment (Hendrix et al., 1995).

Card (1987) examined the relationship between social support variables and PTSD among veterans not involved in treatment. Surveying one group of 1963 high school graduates during a class reunion, Card found Vietnam veterans in this particular high school class reported experiencing psychological symptoms consistent with the diagnosis of PTSD. These investigators also found social support variables, such as the presence of a spouse or being a churchgoer, were associated with fewer PTSD symptoms in this group of Vietnam veterans.

In a study of naturally occurring social support systems (e.g., social supports that occur in an individual's natural environment, such as siblings, friends, neighbors), Kadushin (1985) and colleagues interviewed 274 Vietnam veterans and a comparison group of 275 Vietnam-era veterans who were on active duty during the war, but did not serve in Southeast Asia. The results indicated that war veterans with helpful spouses reported fewer PTSD symptoms and demoralization. Also, veterans with unhelpful spouses were worse off than veterans who were not married. Friends of veterans were found to be especially important in assisting PTSD veterans if spouses were not available or were not supportive of veterans with PTSD. The author clarified that the mere existence of social support does not necessarily result in reduced PTSD symptom reporting by veterans. Under certain stressful circumstances, however, naturally occurring social support resources could be beneficial if these resources accommodate

the emotional, material, and instrumental needs of the individual experiencing a stressful situation (Kadushin, 1985).

In summary, as the literature on social support and PTSD has demonstrated, increased social support appears to be related to decreased occurrences of PTSD. In spite of the evidence of this relationship, it remains unclear whether conclusions regarding the relationship of social support and PTSD can be generalized. Studies have used different methods of measuring both PTSD and social support, leading one to question whether more consistent measurement of social support and PTSD could better assess the relationship between social support and the development and maintenance of PTSD symptoms.

Social Support and Depression. Numerous studies have found that lower social support is related to higher depression symptomatology (Aneshensel & Frerichs, 1982; Aneshensel & Stone, 1982; Blazer, 1983; Dean & Ensel, 1982; Dean, Lin, & Ensel, 1981; Grant, Patterson, & Yager, 1988; Hybels, Blazer, & Pieper, 2001; Monroe, Bromet, Connel, & Steiner, 1986). This relationship has been found in a variety of samples including college students (Allgower, Wardles, & Steptoe, 2001; Cohen & Hoberman, 1983; Kim, 2001; Pengilly & Dowd, 2000), depressed patients (Brim, Witcoff & Wezel, 1982; Brugha, Bebbington, Stretch, MacCarthy, & Wykes, 1997; Flaherty, Gariria, Black Altman, & Mitchell, 1983), elderly people (Blazer, 1983; Grant et al., 1988; Hybels et al., 2001), adults with mild intellectual disability (Lunsky & Benson, 2001), spinal-cord injured veterans (Elliott & Shewchuck, 1995), and women during and after their pregnancy (O'Hara, Rehm, & Campbell, 1983).

Some of the studies listed above used social support measures with established reliability and validity (e.g. Allgower et al., 2001; Brugha et al., 1997; Elliott & Shewchuk, 1995; Flaherty et al., 1983; Grant et al., 1988; Kim, 2001; Pengilly et al., 2000). Other investigators created their own measures (e.g. Aneshensel & Frerichs, 1982; Cohen & Hoberman, 1983; Dean & Ensel., 1982; Dean et al., 1981; O'Hara et al., 1983), used interview questions that were later interpreted as aspects of social support (e.g. Brim et al, 1982), or adopted parts of other social support measures and questionnaires (e.g., Aneshensel & Stone, 1982; Blazer, 1983; Fiore et al, 1983; Hybels et al., 2001; Monroe et al., 1986; Thoits, 1982). Most studies did not go beyond listing individuals who respondents considered confidants, asking about other types of support (such as task support or material support), or assessing the subjects' satisfaction with their social support network. Thus, a number of studies used measures of unknown reliability and validity.

Vilhjalmsson (1993) conducted a meta-analysis of twelve studies on the relationship between social support and depression in community samples in Great Britain. Vilhjalmsson observed that, depending on the statistical analysis used by the authors of each study, the buffering and/or direct effect of social support was either confirmed or disconfirmed. Due to inconsistent assessment of social support across studies, findings were inconclusive regarding the buffering or direct effect of social support on depressive symptoms. All but one of the studies reviewed by Vilhjalmsson measured social support as emotional support only and disregarded other types of support available (such as material support). In spite of the criticisms regarding inconsistent use of social support measures across studies, a contrary argument can be

made that the use of a wide variety of social support measures further corroborates the inverse relationship between social support and depression, due to the similar conclusions drawn in the various studies included in the meta-analysis.

A majority of the studies on social support and depression reviewed for the present study used depression scales with known reliability and validity. The Center for Epidemiological Studies measure of depression (CES-D) developed by Radcliffe (1977) was used in studies on community samples (Aneshensel & Frerichs, 1982; Dean & Ensel, 1982, Dean et al., 1981; Vilhjalmsson, 1993), college students (Cohen & Hoberman, 1983), and the elderly (Hybels et al., 2001). Another predominant depression measure used in many of these studies was the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, & Erbaugh, 1961). This instrument was used in studies on college students (Allgower et al., 2001; Kim, 2001; Pengilly et al., 2000), caregivers of Alzheimer patients (Fiore, 1983), pregnant women (O'Hara et al., 1983), and mental health patients residing in the community (Brim et al., 1982).

Some studies reviewed for the present study used other depression measures with strong psychometric support. Blazer (1983) used the Duke Older Americans Resources and Services Depression scale for his study of elderly living in the community. In a study of spinal cord injured veterans, Elliott and Shewchuk (1995) used the Inventory to Diagnose Depression (Zimmerman & Coryll, 1987). For assessing mildly intellectually disabled adults, the Birlson Depressive Short form Self-rating Scale (BDS-S) was used by Lunsy et al. (2001) to accommodate the intellectual limitations of the subjects. Monroe et al. (1986) assessed depression among married adult women using the Hopkins Symptom Checklist subscale for depression. Flaherty

et al. (1983) used the Hamilton Rating Scale for Depression and *DSM-III* criteria to assess depressive symptoms of outpatient subjects in their research.

Very few studies used depression measures that have not been psychometrically evaluated (e.g., Brugha et al. 1997; Thoits, 1982) or used alternative versions of a validated measure (e.g., Grant et al, 1988). This illustrates the vast difference between social support assessment and depressive symptom assessment in the mental health literature. Notably, social support instruments remain varied, diverse, vague and, at times, non-existent in numerous studies. In contrast, depression appears to be consistently measured by instruments with psychometric evidence to support their use. Although there is a lack of consistency in the instruments used to measure depression and social support, studies consistently have found an inverse relationship between the two variables.

Social Support and Coping. Coping techniques, in relation to social support with individuals suffering from stressful situations, have also been discussed in the literature (Folkman, & Lazarus, 1988; Mikulincer & Florian, 1995; Pearlin & Schooler, 1978; Ptacek & Gross, 1997; Thoits, 1986). Twenty years ago, Billings and Moos (1982) concluded that social resources moderated the relationship between stressful events and functioning among a non-clinical community sample. The authors observed coping and social resources in helping maintain an individual's adequate functioning (Billings & Moos, 1982). Pearlin, Menaghan, Lieberman, and Mullan (1981) conducted a longitudinal study to examine the mediating effects of social support and coping methods on depression, self-concept, and stress. These authors noted a combined role of social support and coping as having mediating effects with stress by directly

changing the stress response outcome. Pearlin et al. (1981) concluded that functions of coping and social support required not only conceptualizing and measuring these mediators, but suggested that researchers address the types of problems and the various points within an individual's stress response for which coping methods and social support resources are used.

Coping mechanisms have also been observed with soldiers and veterans. Florian, Mikulincer, and Taubman (1995) examined the relationship between coping and appraisal on the mental health of Israeli soldiers enduring a four-month combat training period. These authors assessed the soldiers' hardiness appraisal (defined as "personality characteristics that function as a resistance resource in the encounter with stressful life events"), coping strategies at the beginning of the training, and the mental health of these soldiers at the beginning and the end of the training. The findings from this study supported their hypothesis that some of the components of hardiness positively contributed to improved mental health of the soldiers by means of coping and appraisal mechanisms during the real-life stressful situation. The authors concluded that through the process of appraisal and coping with stress by soldiers who were considered hardy individuals, positive mental health was achieved (Florian et al., 1995). With a sample of Vietnam veterans seeking inpatient PTSD treatment, Irving, Telfer, and Blake (1997) examined the concepts of hope, coping, and social support. Irving and colleagues found that combat veterans seeking treatment for PTSD demonstrated a profound lack of hope. Their results indicated that higher hope was associated with higher coping skills and perceived social support among veterans diagnosed with PTSD.

This review of the coping and social support literature suggests that these two concepts are positively correlated. For the present study, coping mechanisms will be regarded as a concurrent validity variable to help establish the construct validity of the SSQ among war veterans, in addition to the variables of depression and PTSD.

Measurement of Social Support

Numerous social support measures have been developed, validated, modified, and abbreviated over the past 25 years. This section reviews and discusses the predominant social support instruments in the social support literature, and discusses ongoing challenges in social support measurement.

Measurement of social support has been extremely varied, with few studies using the same assessment methods or social support instruments. Validated social support measures were not used in many studies. Instead, researchers often opted to interview subjects about their social support resources, such as the availability of family members and friends, positive social contacts, emotional depth of current relationships, availability of guidance from others, and material support (Gold et al., 2000; Ren, Skinner, Lee, & Kazis, 1999; Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000; Powell & Doan, 1992; Irving et al., 1997; Keane et al., 1985). Such narrative social support assessments, though potentially reliable and valid, lack uniformity in operationalizing and measuring social support - making it difficult to accurately assess the impact of social support.

Wills and Shinar (2000) suggested using perceived social support measures for the development of research studies emphasizing social support. Perceived social support measures have an extensive "track record" of demonstrating inverse correlations

with symptomology, and are considered conservative measures of social support in studies where only one social support measure was used. In addition, these authors argue that social support measures assessing an individual's perception of available social resources helps people in stressful circumstances, which supports the buffering effect and construct validity of a measure (Wills and Shinar, 2000).

The social support literature is inundated with studies of both perceived and received support measurement. Therefore, only instruments that have direct relationship to the current study will be discussed. Listed in Appendix 2 are those measures assessing perceived social support and/or measures used with samples of veterans. Appendix 2 lists the name and acronym of the measure, the reference, and relevant psychometric information reported by the authors (Cohen et al., 2000).

The proliferation of different social support measures has been discussed at length in the literature. In order to encourage future replication of studies and promote cumulative knowledge of social support, Dean et al. (1981) recommended criteria for effective social support measures. These authors stated that ideally, social support measures should be: (1) subjected to systematic scale development and assessment to determine their underlying dimensions; (2) reliable and valid; and (3) theoretically significant and descriptive enough to be useful for elucidating the role of social support. Additionally, Dean and colleagues (1981) argued that it is essential for researchers to use existing social support measures in their studies in order to advance knowledge of social support measurement, as well as replicate studies of existing social support measures. In spite of this recommendation over twenty years ago, a multitude of new social support measures have been developed that do not meet some or all of these

criteria.

Several review articles have critiqued the measurement of social support. Much of the criticism centered on the development of a myriad of new social support measures, instead of researchers using existing social support measures. Almost 20 years ago, Rock, Green, Wise, and Rock (1984) reviewed 29 behavioral science studies of social support. Their findings indicated that many social support researchers did not use existing social support measures. These authors maintained that by not using existing measures, the development of social support theory and empirically-based knowledge has been hindered. Their recommendations appealed to researchers to improve access to psychometric information regarding existing social support instruments. Still today, social support researchers appear to have been ignoring these recommendations.

Other researchers have suggested that numerous methodological flaws and inconsistencies of social support measurement are evident in the empirical literature (Flannery, 1990; Lieberman, 1982). Cohen and Syme (1985) noted that there has been very limited data on the psychometric characteristics of many social support measures. They emphasized the need for researchers to carefully consider the method of designing (or utilizing) an appropriate scale that would be helpful in answering specific questions about the support process to be studied (Cohen & Syme, 1985). Flannery (1990) identified three major flaws: (1) lack of operational definition of social support (e.g., studies not defining social support at all or treating the concept of social support as a unitary construct; some investigators measure quantity of support resources, while others measure quality of interactions); (2) inadequate assessment of social support

(e.g., authors constructing their own measures of social support, without reporting reliability or validity evidence); and (3) violation of basic research design principles (e.g., lack of control groups, inadequate sample sizes, and insufficient data analyses).

Cutrona and Russell (1990) critiqued the lack of scientists recognizing social support as a multidimensional concept and the measurement of social support solely in terms of number of supportive individuals. Similarly, in their review of over 40 published social support studies, House and Kahn (1985) noted that many social support measures assess only the quantity of social contacts or relationships, and different functional roles of social support are often ignored. These authors also indicated that they were unable to find any social support measure that is both well validated and cost-effective and, therefore, preferred over other measures.

Winemiller, Mitchell, Sutliff, and Cline (1993) reviewed 262 studies on social support. Their goal was to describe the empirical literature from a methodological perspective. These authors found that over 61% of the studies developed new social support measures, and over 33% of the studies used methodologies that render replication of the study difficult or impossible. In addition, Winemiller and colleagues identified lack of descriptions about the concept of social support and poor descriptions of methodology as dominant patterns among a majority of the studies (68.3%). In fact, in 18.3% of the studies reviewed, the measurement methodology was so poorly described that they were unable to determine whether the social support measure was already established, newly developed, objective, or open-ended.

In summary, these review articles clearly attest to the ongoing problems regarding the adequacy of social support measurement. For the purposes of this

dissertation, there are three social support instruments that have been psychometrically evaluated in studies of non-veteran samples and used in studies of veterans. They are the Social Provisions Scale (which has been used with spinal-cord injured veterans), the Social Support Questionnaire (which has been used with Vietnam veterans), and the Perceived Social Support Scales (Family and Friends subscales). Only the Perceived Social Support Scales was evaluated for reliability coefficients for the family and friends subscales (see Appendix B).

Social Provisions Scale. The Social Provisions Scale (SPS; Cutrona & Russell, 1987) is a 24-item questionnaire that requests respondents to rate the degree to which they feel a type of support is being provided on a 4-point Likert scale. The types of support measured by the SPS include attachment relationships, social integration, guidance relationships, reassurance of worth relationships, and opportunity for nurturance. Internal consistency reliability coefficients for the SPS have been high (.84 to .92), with alpha coefficients for individual subscales ranging from .64 to .76. Internal consistency coefficients for the total SPS scale ranged from .85 to .92 (Elliott & Shewchuk, 1995).

Elliott and Shewchuck (1995) used the SPS in a study of spinal-cord injured veterans. These authors found a positive correlation between social support variables (as measured by SPS scores) and veterans' involvement with leisure activities. In spite of this finding, Elliot and Shewchuck (1995) did not systematically evaluate the reliability and validity of the SPS for use among veterans. Although the SPS has been used in research studies with various samples of adults, this instrument has not been psychometrically evaluated among a population of veterans.

Perceived Social Support Scale. The Perceived Social Support Scale (PSS; Procidano & Heller, 1983) is a 40-item self-report instrument, used by Irving et al. (1997) to examine the role of hope, coping and social support among a sample of war veterans. In conducting the study, the authors were able to identify the reliability coefficients of this measure with the veteran sample. The PSS produced reliability coefficients of .89 (friends subscale) and .94 (family subscale) among a sample of veterans. Irving and colleague's results indicated higher hope was associated with higher coping and perceived social support among veterans.

Social Support Questionnaire. The Social Support Questionnaire (SSQ; Sarason et al., 1983) is a 54-item self-report instrument that has been used in studies of social support among veterans. This measure, however, has not been psychometrically evaluated among war veterans. The type of questions asked in the SSQ is based on Sarason and colleagues' premise that an individual's report of social support reflects at least two elements: (1) the perception that there is a number of available others whom one can access in times of need, and (2) the respondent's satisfaction with this degree of support (Sarason et al., 1983). Sarason considered an individual's cognitive appraisal of social support to be as important as the actual reality of social resources available to the individual and that this perception is a central element that protects against emotional and physical illness (Sarason et al., 1983). Therefore, the SSQ was designed to assess an individual's perceptions or interpretations of support resources, as well as the number of social supports available to an individual. The SSQ's psychometric properties will be discussed in the Methods section of this dissertation.

Green and Berlin (1987) used the SSQ in their study of veterans with PTSD. Green and Berlin added three specific “yes-no” questions that asked about a veteran’s first year of return from the war-zone. The additional questions were: (1) Did you talk with people about Vietnam experiences?; (2) Did you feel close to anyone during the first year of return from Vietnam?; and (3) Did you spend time with anyone during the first year of return from Vietnam? Veterans were asked to indicate the number of people important to them during their first year of return from Vietnam, and then to rate each person listed on “degree of contact,” “how important,” “helpfulness,” “sharing” and “good or bad feeling.” These additional questions were used to examine the relationship between PTSD and five psychosocial variables: intensity of combat in Vietnam, current subjective impact of war stressors, current level of life stress, extent and nature of social supports within the first year of returning from Vietnam, as well as how the veteran reported functioning prior to going into military service. Green and Berlin (1987) found an inverse correlation between PTSD symptoms and social support utilization by Vietnam veterans. The authors, however, failed to perform any psychometric evaluations of the SSQ with this population; therefore, their conclusions are open to scrutiny, since the social support measure used was modified for their study and not psychometrically evaluated in samples of veterans diagnosed with PTSD.

Other Social Support Measures used among War Veterans. As discussed above, the SPS and SSQ have been validated with samples of college students, yet these instruments are the only measures of social support that have been used in studies of war veterans. In reviewing the literature, there appears to be no social support measure that has been evaluated psychometrically for appropriateness for use among war

veterans. Despite this observation, there have been “homecoming” social support measures specifically created for war veterans that assess veterans’ social support resources during their first year back from the war-zone. As will be discussed below, however, these instruments fail to measure war veterans’ current levels of social support - years after their return from the war-zone.

In studies of veterans diagnosed with PTSD, some researchers have created self-report instruments to measure veterans’ homecoming support. For example, Johnson et al. (1997) created the West Haven Homecoming Stress Scale (WHHSS), a 32-item self-report measure that assesses homecoming support experienced by veterans during the first six months after returning from the war-zone. Although these investigators found that lack of homecoming support is a predictor of increased PTSD, this measure does not query subjects regarding current social supports and, therefore, is limited in its utility with current interventions.

Barrett and Mizes (1988) reported similar findings in their study on veterans with PTSD. The authors developed a 30-item social support instrument that assesses emotional as well as instrumental support available to veterans at the time of their return home from the Vietnam War. Barrett and Mizes (1988) focused their study on immediate post-war homecoming support, did not measure current social support, and their social support instrument was not evaluated psychometrically. This measure may be helpful in determining the effect of lack of homecoming support on PTSD among combat veterans. The measure does not, however, assess current social supports, which would have greater usefulness in interventions for these veterans.

Stretch (1985) developed the Vietnam-Era Veterans Adjustment Survey (VEVAS) that assesses attitudes toward the Vietnam War, combat experience, social support, and psychosocial health during and after the war. The social support questions contained in the VEVAS asked about social support during the war (e.g., how often veteran socialized within his unit, whether the unit was supportive of the veteran if he had a problem, etc.), and during the first year after the veteran returned from Vietnam (e.g., how people reacted to the veteran when he returned home, attitudes of people toward his involvement in the war, how often he experienced negative events due to his involvement with the war). Like the homecoming support measures described above, the VEVAS is not useful for the assessment of a veteran's current levels of social support.

Summary

The preponderance of evidence in the literature indicates that: (1) PTSD and social support have an inverse relationship (i.e., lower social support is associated with higher PTSD symptoms); (2) much of the research on social support includes varied and inconsistent methods of measuring social support; (3) there are numerous social support measures that have been created, although few of these instruments have been evaluated psychometrically; (4) of the social support measures that have been psychometrically evaluated, several have been used to study populations other than those for which the instrument was originally validated; and (5) there is only one social support measure (PSS) that assesses current social support and has demonstrated reliability among a population of veterans. However, the authors using the PSS did not provide evidence regarding the validity of the instrument with the veteran population. In view of these

findings, the present study seeks to psychometrically evaluate and possibly validate an existing social support measure (SSQ) for use among war veterans diagnosed with PTSD.

The Present Study

The purpose of this study evaluated the appropriateness of the SSQ for assessing current social support among veterans seeking PTSD treatment from a residential PTSD program. The SSQ has demonstrated satisfactory psychometric properties when tested with samples of college students and, in one study (Green & Berlin, 1987) was modified slightly and used with a population of war veterans. In the Green and Berlin study, the SSQ's psychometric properties were not evaluated, although the authors' findings supported the SSQ's construct validity with results consistent with theoretically based predictions.

Hypotheses

This study extends the work by Green and Berlin (1987) by examining the reliability and validity of the SSQ for use among war veterans diagnosed with PTSD. A larger data-set than used by Green and Berlin was used. Coefficient alpha was used to evaluate the internal consistency of the SSQ. Factorial validity of the SSQ was examined by identifying the factor structures underlying the measure using exploratory factor analyses. Concurrent validity of the SSQ was evaluated by examining how well SSQ scores relate to theoretically predicted correlates of social support including PTSD, depression, and coping. It was hypothesized that: (1) SSQ scores were inversely correlated with severity of PTSD symptoms; (2) SSQ scores were inversely correlated with severity of depression; and (3) SSQ scores were positively correlated with

effective coping skills. To evaluate the construct validity of the SSQ among war veterans, the study used convergent and discriminant validity methods. Convergent validity was evaluated using a brief measure of coping skills (Brief COPE; Carver, 1997). Two of the items from the Brief COPE, which measure social support, were used to evaluate possible convergent validity. The variables of “military branch of service” (e.g., Army, Air Force, Marine Corp., Navy) and “location of war-zone service” were used as proxies to determine discriminant validity. Currently, there are no theories published in the literature suggesting relationships between either “military service branch” and social support or “location of war-zone” and social support.

CHAPTER 2

METHOD

Data Set

A secondary data set was used to evaluate the psychometric properties of the SSQ among war veterans. The data were collected by the Menlo Park Department of Veterans Affairs Medical Center in Palo Alto, CA. Since 1983, the medical center has housed an intensive “specialized inpatient PTSD unit (SIPU)” which provides a comprehensive intake assessment upon a veteran’s admission to the program. During the intake process, each veteran admitted to the program completes a battery of questionnaires including the Social Support Questionnaire (Sarason et al., 1983) that assesses the number of and satisfaction with current level of social support, the Mississippi Scale for Combat-Related PTSD (Keane, Caddell, & Taylor, 1988) that assesses severity of PTSD symptoms, the Beck Depression Inventory (Beck et al., 1961) that assesses severity of depression, and the Cope Inventory (COPE; Carver, Scheier, & Weintraub, 1989) that assesses coping skills that a veteran uses to deal with stressful situations. Each of these assessment instruments will be described below.

All measures, except for the COPE, were administered to veterans entering the SIPU from 1989 to 1999. The COPE was added to the SIPU intake questionnaire battery in 1996. A separate correlation analysis was performed for those subjects who completed the COPE, due to the smaller sample size of subjects who completed the COPE ($N = 207$).

Participants

The demographic characteristics of the subjects are listed in Table 1. The residential PTSD program collected a significant amount of demographic data on veterans admitted to the program. Therefore, only the most pertinent demographic characteristics of the sample in this study were selected for the analysis. The *n*-sizes for each demographic characteristic vary, due to missing data. Therefore, the actual size of the sample for each demographic variable is labeled separately, with percentages of that sample size in the right-hand column.

Table 1

Demographic Characteristics of Respondents

Characteristics	<i>n</i>	%
War-zone (<i>n</i> = 639) ^a		
Vietnam War	608	95.0
Korean War	13	2.0
Persian Gulf	13	2.0
Other war-zone	5	.8
Employed (<i>n</i> = 305) ^a		
Yes	45	14.8
No	260	85.2
Military Branch of Service (<i>n</i> = 616) ^a		
Army	409	66.1
Marine Corp.	153	24.7
Navy	34	5.5
Air Force	23	3.7
Other	3	.5

Table 1
Demographic Characteristics of Respondents (continued)

	<i>n</i>	%
Income last year (<i>n</i> =599) ^a		
Less than \$10,000	295	49.2
\$10,001 - \$20,000	141	23.5
\$20,001 - \$30,000	65	10.9
\$30,001 - \$40,000	43	7.2
\$40,001 - \$50,000	34	5.7
More than \$50,000	20	3.3
Years of Education (<i>n</i> =614) ^a		
7 - 9 years	18	3.0
10 - 11 years	38	6.2
12 years	157	25.6
1 year college	98	16.0
2 years college	160	26.1
3 years college	58	9.4
4 years college	58	9.4
1-2 years post-college	24	3.9
3 or more years post-college	3	.5

Table 1
Demographic Characteristics of Respondents (continued)

	<i>n</i>	%
Ethnicity (<i>n</i> = 689)		
Caucasian	441	64.0
African American	85	12.3
Hispanic	95	13.8
Asian American	9	1.3
Native American	24	3.5
Mixed	23	3.3
Other	12	1.7
Service-connected disabled (<i>n</i> = 307) ^a		
Yes	205	66.8
No	102	33.2
Marital Status (<i>n</i> = 616) ^a		
Single	50	8.1
Married	205	33.3
Separated	55	8.9
Divorced	280	45.5
Living with partner	18	2.9
Widowed	8	1.3
Age at treatment (<i>n</i> =689)		
Average age	48.9	
Age Range	25 - 73	
Mode age	48.55	

^a indicates *N* < 689, due to changes in data collection procedures resulting in missing data

All participants were treatment-seeking veterans typically referred to the Menlo Park Inpatient PTSD program by an outpatient treatment provider. The demographic characteristics of the veterans who completed the SSQ, and who are the subjects for the present study, are presented in Table 1.

The average age at discharge from the PTSD program was 48.9 years (s.d. 4.64 years; $N = 689$) and all patients admitted from 1990-1998 were male. As illustrated in Table 1, the majority of subjects were Caucasian (64%). Less than a third of the veterans who responded to this question were still married, over 87% of the veterans have been married at one time, with over 55% of them either separated or divorced.

As shown in Table 1, the vast majority of veterans served in Vietnam (97%), as compared to veterans from other war-zones. The majority were Army (65.1%) and Marine Corps (24.3%) veterans, with the other branches of the military represented by only 10.5% of the veterans. Over 66% percent of the participants were deemed VA service-connected disabled for physical or psychological problems ($n = 307$).

Table 1 also illustrates the educational levels of the sample. Ninety-four percent of the veterans in the sample completed high school, with 5.4% receiving less than 12 years of education ($n = 614$). Of those having completed high school (or receiving their GED), 27.4% of the sample completed two years of college, and 9.6% completed four years of college. Only 14.8% of the sample was currently employed at the time of their admission to the PTSD program ($n = 305$). Nearly half of the sample (47.2%) earned less than \$10,000 annual income, 21.2% earned between \$10,000 and \$20,000 per year, and 27.2% earned between \$20,000 and \$50,000 per year. Only 4.2% of the veterans in the sample earned more than \$50,000.

Measures

The Mississippi Scale for Combat-Related PTSD

The Mississippi Scale for Combat-Related PTSD (Keane et al. 1988), also referred to as the Mississippi, is a 35-item self-report measure derived from the *DSM-III* (APA, 1980) criteria for PTSD. Keane et al. (1988) developed the Mississippi to assess PTSD symptoms and associated features of the disorder with combat veterans.

Veterans rated the severity of their PTSD symptoms on a 5-point Likert scale ranging from 1 ("not at all true") to 5 ("almost always true"). Ratings on each item are summed to provide a score indicating PTSD severity. The Mississippi scale allows a range of scores that is sensitive to subtle changes in PTSD severity as a result of therapeutic intervention (Keane et al., 1988).

Keane et al. (1988) found high test-retest reliability (.97) over a one-week interval, and a high internal consistency reliability (.94) estimate for the entire scale. Item-total correlations ranged from .23 to .73 with an average of .58. In support of the validity of the Mississippi scale, Keane et al. (1988) found an overall hit rate of .90 in differentiating Vietnam combat veterans diagnosed with PTSD from a group of non-combat veterans diagnosed with psychiatric problems and a group of well-adjusted Vietnam veterans. Keane and colleagues conducted principal-components analyses with a varimax rotation which generated six components underlying the measure. These components included intrusive memories and depression (Cronbach $\alpha = .89$), interpersonal adjustment problems ($\alpha = .78$), lability of affect and memory (Cronbach $\alpha = .64$), rumination of memories (Cronbach $\alpha = .70$), interpersonal difficulties (Cronbach $\alpha = .46$), and sleep problems (Cronbach $\alpha = .50$).

Beck Depression Inventory

The Beck Depression Inventory (BDI; Beck et al., 1961) is a widely used 21-item self-report measure of depressive symptoms. The BDI's psychometric characteristics are supported with well-established reliability and validity data. Beck's initial evaluation of the BDI showed that all 21 items were significantly correlated with the total BDI score, with correlations ranging from .31 to .68. Beck also reported a split-half reliability of .86 that rose to .93 with a Spearman-Brown correction.

Construct validity of the BDI was supported by significant correlations between BDI scores and psychiatrists' ratings of depression with coefficients ranging from .65 to .75 (Beck, 1961). Factor analysis of the BDI yielded four factors: pessimism, indecision, suicidal wishes, and work inhibition.

Social Support Questionnaire

The SSQ is a 54-item self-report instrument that contains 27 questions consisting of two parts. The first part of each question asks the individual to list supportive individuals who they would turn to given a specified situation, yielding a measure of number of supports or "N" score. The second part asks subjects to rate their level of satisfaction with the support they receive in each situation yielding a measure of satisfaction with supports or "S" score.

Sarason et al. (1983) reported excellent internal consistency estimates for the SSQ "N" Scores with a Cronbach alpha of .97 and item-total correlations ranging from .51 to .79. Cronbach alpha for the "S" scores was .94 and correlations of "S" items with the total score ranged from .48 to .72. The correlation between the SSQ "N" scores and "S" scores was .34. Sarason et al., (1983) argued that this modest correlation between "N" and "S" scores

demonstrates that these two components measure different aspects of social support and provides the rationale for analyzing the two components of social support separately. The test-retest reliabilities were .90 for the "N" scores and .83 for the "S" scores during a 4-week interval.

Construct validity evidence showed that higher SSQ scores were significantly correlated with lower depression and hostility scores, as measured by the Multiple Adjective Affect Check List. Sarason et al. (1983) reported significant positive correlations between SSQ scores and self-esteem as well as between ratings of optimism about current life situation and both SSQ "N" scores and SSQ "S" scores. Factor analyses of the measure demonstrated evidence that one strong factor underlies each of the two SSQ scales ("N" and "S" scales).

As mentioned previously, Green and Berlin (1987) used the SSQ in a study of Vietnam veterans. These authors found a significant inverse correlation between PTSD symptoms and social support utilization by Vietnam veterans within their first year of returning from the war zone ($r = -.26$; $p < .05$). Although Green and Berlin did not psychometrically evaluate the appropriateness of using the SSQ measure with a sample of war veterans, their findings provide support for the construct validity of the SSQ. In addition, Green and Berlin used the SSQ in their study as a measure of past social supports, not current social supports.

COPE Inventory and Brief COPE

The COPE Inventory, or COPE, was originally developed as a 52-item self-report measure (Carver et al., 1989). Carver and colleagues developed 13 conceptually distinct subscales to measure an individual's coping strategies. Each subscale focuses on a specific type of coping strategy. Using a sample of college undergraduates, Carver et al. (1989) reported acceptable internal consistency reliability for 12 of the sub-scales, with reliability

estimates ranging from .62 to .92. The COPE subscales demonstrated acceptable stability over 6-week ($r = .42$ to $.89$) and 8-week ($r = .46$ to $.86$) intervals. In support of the construct validity of the COPE, Carver et al. showed that coping styles as measured by the COPE were related to various personality characteristics as hypothesized.

The information collected by the SIPU used an abbreviated, pre-publication version of the COPE Inventory (Brief COPE; Carver, 1997). The Brief COPE published by Carver (1997) is a 28-item instrument consisting of 14 sub-scales. The 14 subscales are: active coping (“being active to remove stressors or ameliorate their effects”), planning (“thinking about what steps to take to cope with a stressor”), seeking social support for instrumental reasons (“seeking advice or information”), seeking social support for emotional reasons (“getting moral support or sympathy”), venting emotions (“ventilating feelings around whatever is distressing to the individual”), humor (“using jokes about the situation”), self-distraction (“using work or other activities to get one’s mind off of stress”), substance abuse (“using alcohol or other drugs to help feel better”), behavioral disengagement (“reducing one’s efforts to deal with a stressor”), mental disengagement (“distractions used to avoid thinking about the stressor”), positive reframing (“coping aimed at managing distressing emotions”), denial (“refusal to believe that the stressor exists and/or acting as though the stressor is not real”), acceptance (“accepts the reality of the stressor and engaged in an attempt to deal with the situation”), turning to religion (“tendency to turn to religion in times of stress”), and self blame (“blaming oneself for the stress”).

The published version of the Brief COPE (Carver, 1997) has four additional items added to the measure, which are not in the pre-publication version of the Brief

COPE used by the SIPU. Two of the four items that are missing in the pre-publication version of the Brief COPE measure instrumental social support (“I’ve been trying to get advice or help from other people about what to do” and “I’ve been getting help and advice from other people”). Since the SIPU never changed their usage of the Brief COPE from the pre-publication version to the published version, there is no data regarding the veterans’ use of instrumental social supports within their coping behaviors.

The sub-scales of the Brief COPE and their internal consistency estimates from the publication by Carver (1997) are summarized in Table 2.

Table 2

Brief COPE sub-scales, reliability estimates and item numbers

Sub-scale	Item Numbers*
Active Coping ($\alpha = .68$)	2, 7
Planning ($\alpha = .73$)	12, 22
Positive Reframing ($\alpha = .64$)	11, 15
Acceptance ($\alpha = .57$)	18, 21
Humor ($\alpha = .73$)	16, 24
Religion ($\alpha = .82$)	20, 23
Emotional Support ($\alpha = .71$)	5, 13
Instrumental Support ($\alpha = .64$)	**
Self-Distraction ($\alpha = .71$)	1, 17
Denial ($\alpha = .54$)	3, 8
Venting ($\alpha = .90$)	9, 19
Substance Use ($\alpha = .90$)	4, 10
Behavioral Disengagement ($\alpha = .65$)	6, 14
Self-Blame ($\alpha = .69$)	**

* Item numbers refer to items of the Brief COPE in Appendix F.

** These items are included in Brief COPE, but not in the pre-publication version that was used for the present study.

Reliability analyses of the Brief Cope revealed minimally acceptable internal consistency estimates for the sub-scales (with reliabilities reported as exceeding .50 and many scales exceeding .60). Overall, internal consistency of the Brief COPE was not provided by Carver. Carver also conducted exploratory factor analysis on items of the Brief COPE, using oblique rotation and eigen values > 1.0 . Carver found that nine factors were revealed, which accounted for over 72% of the variance of the responses. The author concluded that internal consistency reliability and factor structure of the Brief COPE were similar to the full COPE Inventory. No validity information was reported for the full COPE Inventory or the Brief Cope. The SIPU's pre-publication version of the Brief COPE is a 24-item instrument that is missing four questions from Carver's published Brief COPE. The missing questions from the Brief COPE used by the SIPU are two questions assessing Instrumental Support and two questions assessing Self-Blame. Unfortunately, the SIPU failed to update their version after implementing the early version into their program's intake questionnaires.

Procedures

During eight years of data collection, the SIPU assessed veterans upon their admission for 11 weeks of residential PTSD treatment. The current study includes data from veterans who completed the SSQ, COPE, Mississippi, and BDI assessment questionnaires as they entered the inpatient program for PTSD at the SIPU. Although some veterans returned for subsequent SIPU treatment episodes and completed the admission questionnaires a second and third time, re-admission data were not included in this study.

Data Analysis

Reliability of the SSQ measure was assessed by estimating internal consistency of the SSQ items using Cronbach's alpha, as well as item-total correlations. Factorial validity (Nunnally, 1978) of the SSQ was examined by identifying the factor structures underlying the measure using principal axes factor analysis with oblique rotation. Concurrent validity was determined by correlating social support as measured by the SSQ with hypothesized correlates of depression and PTSD, as measured by the BDI, and the Mississippi Scale, and a pre-publication version of the Brief COPE. Construct validity of the SSQ was evaluated by assessing convergent and discriminant validity of the measure. Convergent validity was assessed using two items that assess emotional social support from the SIPU's pre-publication version of the Brief Cope Inventory. Discriminant validity was assessed by using variables from the data set that theoretically should not be correlated with social support. For discriminant validity, the social support literature does not identify any demographic variables as being correlated with social support. Although demographic variables are not considered constructs, so an optimal discriminant validity analysis could not be conducted, two demographic variables from the data set (military branch of service or war-zone) were used as indicators to determine if there was any evidence of discriminant validity for the present study.

CHAPTER 3

RESULTS

The purpose of this study was to evaluate the validity and reliability of the SSQ for use among war veterans diagnosed with PTSD. The analysis investigated the construct validity of the SSQ measure by examining how the SSQ scores related to hypothesized correlates of social support. The findings of this study are presented in four sections. The first section summarizes the means and standard deviations of the four measures used in this study. The second section describes the results of a principal axis factor analysis conducted to explore the factor structures of the SSQ. The third section describes the internal consistency of the SSQ measure using Cronbach's alpha to provide reliability estimates of the "N" and "S" components. The fourth section describes construct validity of the SSQ by examining the correlations between SSQ scores and scores from the Mississippi Scale, Beck Inventory, and COPE.

Prior to reporting the findings of the analysis, it is appropriate to describe the preliminary preparation of the data set. The original sample size of the entire data set of subjects who completed the residential PTSD program admission questionnaires from 1990 - 1998 was 1866. Eight years of data collection by the specialized PTSD program included variation among staff inputting information, variation in data inputting methods, and changes in assessment tools. Therefore, a considerable number of inconsistencies in the data set needed to be addressed. Methods for handling duplicate data, missing data and data errors were implemented in order to prepare the data set for analysis.

First, duplicated data entries needed to be deleted. This was accomplished by comparing the date a veteran's information had been inputted into the data set with the date of the veteran's admission to the program. There were several cases of duplicated inputs (with different entry dates) entered for several admissions to the program. The entry that was most likely inputted into the data set soon after the veteran's admission date needed to be determined. Therefore, in these cases, duplicated entries were deleted in situations when the entry date was more than a few months after the veteran's admission date, and the other entry date was closer to the admission date. All duplicated entries of the Beck, Mississippi, SSQ, and COPE scores also were removed based on this decision process. Second, any subject who did not have SSQ scores was deleted from the data set.

Missing SSQ item scores were evident throughout the data set. Therefore, a decision was made that subjects having more than 10% missing SSQ item scores were omitted from the study. With the remaining subjects, a case-by-case mean substitution was completed, using an individual's average of "N" or "S" SSQ scores as the replacement value for that particular subject's missing item.

With the BDI, cases were deleted if there were more than two missing items by respondents. Cases were deleted from the Mississippi Scale data if there were more than four items missing. For those cases kept in the study with Mississippi Scale data missing four items or less, each missing item was scored as zero. Therefore, a respondent who did not answer all the questions of the Mississippi Scale had a lower total Mississippi Scale score than if a veteran had completed all items.

After all data entry errors were addressed, the final *N* for the data analysis was 689 subjects.

Description of Measures

Table 3 presents the means, standard deviations, ranges, and reliability coefficients of the SSQ, BDI, Mississippi Scale, and Brief COPE. As illustrated in the table, the mean number of social supports (SSQ “N” scores) was 1.96 ($SD = 1.54$). This suggests that veterans in this study, on average, have less than two social supports on whom they rely in times of need.

In terms of satisfaction level with their social supports as measured by the SSQ “S” scores, the mean for the veteran sample was 4.13 ($SD=1.38$). The SSQ “S” scores are rated on a 6-point Likert scale (the “S” scale items are even-numbered items on the measure). This finding suggests that, on average, veterans in this study were “a little satisfied” with those they identified as their social supports (the wording of number 4 of the 6-point scale; see Appendix C for wording of the SSQ).

The mean scores for the BDI, Mississippi Scale and Brief COPE are also summarized in Table 4. The range for the BDI suggests an “extremely severe” level of depression is 30 - 63 (Beck, 1961). The mean BDI score for veterans in this study was 31.44 ($SD=10.30$), signifying a very depressed sample. The criterion for PTSD based on the Mississippi Scale is a score equal to or greater than 107 (Keane et al., 1989). Mean Mississippi scores for the veteran sample was 135.82 ($SD = 16.73$) suggesting that veterans in this study had high levels of PTSD. The mean Brief COPE score for the veteran sample was 58.7. This suggests a medium-range of coping skills, although Carver (1997) does not report norms for the Brief COPE measure. Instead, Carver

suggests that researchers use the sub-scales of the Brief COPE and compare the relationships of these sub-scales with other variables. For this study, the two items in the Brief Cope that measure emotional social support were correlated with the SSQ, which will be reported in a later section.

Table 3

Summary of descriptive statistics and reliability estimates of SSQ N and S scores, BDI (depression), and Mississippi (PTSD) scales

	SSQ N scores	SSQ S scores	BDI	Mississippi
<i>Mean</i>	1.96	4.13	31.44	135.82
<i>S.D.</i>	1.54	1.38	10.30	16.73
<i>N</i>	689	689	689	689
<i>Range</i>	0-9	1-6	1-55	82-175
<i>Cronbach's α</i>	.97	.97	.89	.90

Note: Ranges for SSQ N and S scores are for each item; ranges for BDI, and Mississippi Scale are for the total scores.

SSQ N = Number of social supports measured by the SSQ.

SSQ S = Satisfaction with social supports measured by the SSQ.

BDI = Levels of depression measured by the Beck Depression Inventory.

Mississippi = Levels of PTSD symptoms measured by the Mississippi Scale for Combat-related PTSD.

Reliability

Internal consistency reliability of the SSQ “N” and “S” scores was determined using Cronbach’s alpha (α). Since the SSQ “N” scores measure the number of social supports, and the “S” scores measure a subject’s rating of satisfaction, the reliability estimates for the “N” and “S” scales were calculated separately. Sarason et al. (1983) also reported the reliability estimates of the “N” and “S” scores of the SSQ separately.

Those authors reported coefficients for “N” scores of .97, and “S” scores of .94. Reliability coefficients in the current study, as seen in Table 4, for the “N” and “S” scores were .97 for both scales. Stability of the SSQ was not examined due to the lack of subsequent testing of veterans being admitted to the residential PTSD program. Reliability estimates of the BDI for the sample in the current study was .89, and for the Mississippi Scale, .90.

Factor Structure

In the original psychometric evaluation of the SSQ (Sarason et al., 1983), factor analysis was conducted with a sample of college students. Since the SSQ has not been previously evaluated for use among war veterans, understanding the factor structure of the SSQ in this study is appropriate.

Principal axis factor analysis was performed to investigate the factor structure underlying the 27 SSQ “S” and 27 SSQ “N” items with the data set of 689 war veterans. Using an eigen value > 1.0 cut-off criterion for number of factors, the analysis revealed two factors underlying the SSQ “S” scale, with the first factor explaining nearly 58% of the variance, and the second factor explaining an additional 5%. Since orthogonality of the factors could not be assumed, oblique rotation of the factors was conducted. The factor structure revealed that all items loaded highly on both factors (factor loadings >.50). Also, the correlation between the two factors was high (.78). These results suggest that only one factor adequately defines the structure underlying the SSQ “S” scale.

Similar results were found with the SSQ “N” scores, with three factors emerging from the analysis. The first factor explained over 59% of the variance, the second

factor explained an additional 5.7%, and the third factor contributing another 3.8%. After oblique rotation, the factor structure revealed that all items loaded highly on all three factors (factor loadings > .40). The correlations among the three factors were high (> .53). These results suggest that only one factor adequately describes the SSQ "N" scale.

Concurrent Validity

A review of the literature in Chapter 1 suggests that lower social support is related to higher PTSD symptoms and higher depression. Thus, measures of PTSD and depression were used in this study to help establish the concurrent validity of the SSQ. Included in the questionnaires for all 689 subjects were the Mississippi Scale and Beck Depression Inventory. The correlation matrix in Table 4 summarizes the results of the correlation analysis. As illustrated in Table 4, the correlations suggest low, but statistically significant, relationships between SSQ "N" scores and "S" scores with both the BDI and Mississippi scores.

Table 4

Correlations of Social Support Questionnaire with Depression and PTSD measures.

	SSQ N scores	SSQ S scores	Depression	PTSD
SSQ N (average)	1.00	-	-	-
SSQ S (average)	0.40**	1.00	-	-
Depression	-0.17**	-0.22**	1.00	-
PTSD	-0.17**	-0.13**	0.65**	1.00

** $p < 0.01$ (2-tailed). Note: SSQ N = Number of social supports measured by the SSQ. SSQ S = Satisfaction with social supports measured by the SSQ.

As noted in Table 4, SSQ “N” scores correlated with depression scores modestly at $-.17$ ($p < .01$), and in the direction hypothesized from the literature. Similarly, the SSQ “S” scores correlated with depression at $-.22$ ($p < .01$). Analysis of the relationship between the SSQ and the Mississippi Scale revealed the SSQ “N” scores correlated with the Mississippi Scale at $-.17$ ($p < .01$), and the SSQ “S” scores correlated with the Mississippi Scale at $-.13$ ($p < .01$). These correlations also were in the hypothesized direction. While these correlations provide evidence of the concurrent validity of the SSQ, the correlations are considered low, and their statistical significance likely is due, at least in part, to the very large size of the sample.

While there was a statistically significant correlation between the “N” and “S” scores of the SSQ ($.40$, $p < 0.01$), the amount of variation explained by this correlation (R^2) is only $.16$, so that the significance of this correlation may be related to the large sample size. Therefore, it appears justified to conclude that the SSQ “N” and “S” scores are measuring different components of social support.

From 1996 – 1998, the SIPU collected data on coping skills using a pre-publication version of the Brief COPE. As mentioned in the literature review and in previous research, it appears that social support and coping are positively correlated (i.e., higher coping skills are associated with higher perceived social support). Therefore, the Brief COPE (Carver, 1997) was used as an additional variable to examine the concurrent validity of the SSQ. As mentioned in the previous chapter, the COPE Inventory (Carver, 1989) and Brief COPE (Carver, 1997) include items that assess social support within the entire questionnaire, as well as assess other coping skills a respondent uses in stressful circumstances. Since a pre-publication version of

the Brief COPE was used during the last two years of the SIPU's data collection, a separate correlation analysis was conducted for the pre-publication version of the Brief COPE and SSQ. Table 5 illustrates the descriptive statistics and reliability estimates of the Brief COPE used in the present study.

Table 5

Summary of descriptive statistics and reliability estimates of pre-publication version of the Brief COPE

<i>Mean</i>	58.7
<i>S.D.</i>	10.42
<i>N</i>	207
<i>Range</i>	32 - 82
<i>Cronbach's α</i>	.78

Brief COPE and SSQ scores were correlated using the subset of participants who completed both Brief COPE and SSQ scales. The *N* of the veteran sample that completed the Brief COPE and the SSQ was 207. Brief COPE scores and SSQ "N" scores were not significantly correlated (.031, $p = .653$). A small, but statistically significant correlation was found between SSQ "S" scores and Brief COPE scores (.195, $p < .005$). Therefore, this analysis finds that the pre-publication version of the Brief COPE provided some evidence to support the concurrent validity in SSQ "S" scores.

Construct validity. Construct validity refers to measures behaving as expected based on theoretical assumptions. According to Nunnally (1978), "The proof would come from determining the extent to which the measures 'fit' in a lawful way into a network

of relationships that would be expected on the basis of sensible theories” (p. 103). The use of convergent validity and discriminant validity methods were used to evaluate the construct validity of the SSQ.

Convergent validity. Convergent validity refers to the confirmation of a measurement's construct by using multiple methods of measuring the same construct (Campbell and Fiske, 1959; Pedhazur et al., 1991). Therefore, two items measuring emotional social support within the 24 items of the pre-publication version of the Brief COPE Inventory (Carver, 1997) were used as indicators to establish convergent validity. Brief COPE items that measure emotional social support (#5 and #13) were combined to create an “emotional social support” composite score. These items specifically state “I’ve been getting emotional support from others” and I’ve been getting comfort and understanding from someone.”

Table 6

Correlations with SSQ scores and Composite Score from two items of the Brief COPE

	SSQ N scores	SSQ S scores	Composite Score
SSQ N scores	1.00		
SSQ S scores	.294 **	1.00	
Composite Score	.187 **	.261 **	1.00

** p < .01 (2-tailed).

Note: SSQ N = Number of social supports measure by the SSQ.

SSQ S = Satisfaction with social supports measured by the SSQ.

Composite Score = Two items measuring emotional social support from Brief COPE.

The emotional social support composite score and SSQ scores were correlated among the subset of participants who completed both the Brief COPE and SSQ scales ($N = 207$). As noted in Table 6, the composite score of emotional support and SSQ “N” scores were significantly correlated ($r = .187, p < .01$). The SSQ “S” scores correlated with the composite score at a slightly higher and significant level ($r = .261, p < .01$). These findings were in the predicted direction and provide evidence to support the convergent validity of the SSQ. It is recognized that the two items of the Brief COPE used to examine the convergent validity of the SSQ do not constitute a valid or reliable instrument with which a thorough convergent validity analysis would be conducted. Also, very little variance of the SSQ scores is being explained by the two items of the Brief COPE ($R^2 = .035$ for SSQ “N” scores; $R^2 = .068$ for SSQ “S” scores). However, given the limitations of the data set, it was decided that using the two emotional social support items from the Brief COPE was the only option to begin an examination of convergent validity of the SSQ within the data provided by the SIPU.

Discriminant validity. Consistent with the recommendations for assessing the construct validity of measures, a discriminant validity analysis was also examined with the SSQ (Campbell & Fiske, 1959, Pedhazur, 1991). Campbell and Fiske (1959) state, “...for the establishment of construct validity, discriminant validation as well as convergent validation is required. Tests can be invalidated by too high correlations with other tests from which they were intended to differ” (p. 81). Given the present study’s data set, examination of discriminant validity – like the examination of convergent validity – was limited by the information gathered and provided by the SIPU. Therefore, demographic variables were the only options available for a discriminant

validity analysis. Discriminant validity in the present study was determined by examining the relationship between social support and two variables that are not theoretically related to social support. "Branch of military service" (i.e., Army, Marine Corp., Air Force, Navy, Coast Guard) and "location of war-zone" (i.e., Vietnam, Korea, Persian Gulf) are the demographic variables that met these criteria.

A one-way analysis of variance (ANOVA) was conducted on 308 of the veterans in the data set for whom data on these variables were available. The ANOVA examined whether there were any significant differences between the independent variables of "branch of military service" and "location of war-zone," and the dependent variables of SSQ "N" and "S" scores. A total of four ANOVAs were conducted (SSQ "N" scores with "branch of military service" and "war-zone"; SSQ "S" scores with "branch of military service" and "war-zone").

The first ANOVA looked at "branch of military service" and SSQ scores. Due to the smaller *N* sizes of veterans who served with the Navy, Air Force, and Marine Corps, the subjects who served in these non-Army military branches were collapsed into one group and compared with the Army veterans as the other group. The two "branch of military service" groups were not significantly different for number of social supports $F = 3.17 (1, 308) p = .076$. Similar results were found between "branch of military service" and SSQ "S" scores $F = .629 (1, 308) p = .428$.

Like the ANOVAs for "branch of military service," ANOVAs run with "war zone" did not find statistically significant differences in SSQ "N" scores $F = .412 (5, 308) p = .84$ nor "S" scores $F = .209 (5, 308) p = .959$. Eta-squared (η^2) were also computed in each ANOVA which suggested almost no variance explained in SSQ

scores by “branch of military service” and “war zone” variables. The findings of the ANOVAs, therefore, suggest that the demographic variables of “service branch” and “war-zone” are not related to SSQ scores. These findings offer support for the discriminant validity of the SSQ.

CHAPTER 4

DISCUSSION

Summary of Results

The findings of this study, which examined the reliability and validity of the SSQ measure, support the appropriateness of this measure for assessing current social support among veterans seeking treatment for PTSD. Specifically, the reliability of both the SSQ “N” and “S” scores was very high, consistent with the original reliability estimates by Sarason and colleagues (1983). Factorial validity of the SSQ “N” and “S” scores was also examined, using principal axis factor analysis. The factor structure of the SSQ “N” and “S” scales revealed only one factor describing each scale after using oblique rotation.

Concurrent validity of the SSQ was evaluated by examining whether SSQ scores were correlated with predicted correlates of social support, including PTSD, depression, and coping skills. The SSQ demonstrated low, but statistically significant, correlations with all three predicted correlates of social support. Consistent with studies on social support and depression or PTSD, both the SSQ “N” and SSQ “S” scores correlated in the predicted direction with the BDI (depression) and the Mississippi Scale (PTSD). The correlations between these measures provide tentative support for previous findings in the literature that suggest that higher social support is related to lower reported PTSD symptoms among veterans. The findings also indicated that, consistent with the literature, lower social support among the veteran sample is related to higher levels of depression. In addition, concurrent validity analysis demonstrated that the SSQ “S”

scores were positively and significantly correlated as predicted with a measure of coping skills (Brief COPE).

Construct validity of the SSQ among war veterans also was evaluated using concurrent, convergent and discriminant validity methods. Convergent validity analysis using two items from the Brief COPE that specifically measure emotional social support were positively and significantly correlated with SSQ “N” and SSQ “S” scores. Discriminant validity analysis, which utilized two demographic variables of “military branch of service” and “location of war-zone,” found no statistically significant differences between these demographic variables and SSQ scores.

Therefore, the hypotheses regarding the validity of the SSQ measure were tentatively confirmed: (1) SSQ scores were inversely correlated with PTSD severity at low but statistically significant levels; (2) SSQ scores were inversely correlated with severity of depression at low but statistically significant levels; (3) SSQ “S” scores were positively correlated with effective coping skills at a low but statistically significant level; (4) SSQ “N” and “S” scores were positively correlated with two items measuring emotional social support items from the Brief COPE at low but statistically significant levels; and (5) the SSQ was not correlated with variables with which the measure theoretically should not be correlated.

Comparison of Findings with Existing Literature

Social support measurement. As summarized earlier, studies have used different methods of measuring social support, which has resulted in numerous methodological problems in the social support literature (Dean et al., 1981; Flannery, 1990; Rock et al., 1984; Winemiller et al., 1993). One problem cited is that a wide-range of social support

measures have been developed, but a minority of these measures have been comprehensively evaluated for validity (Flannery, 1990). An example previously mentioned is with the Perceived Social Support Scale (PSS; Procidano et al., 1983). The PSS is a social support measure developed and used in a study with war veterans, and the authors studied the reliability of the instrument, but did not study the measure's validity.

Another problem stems from social support measures that are psychometrically evaluated, but used in subsequent studies among populations with whom the measure was not originally validated (Dean et al., 1981). An example is the social support measure that was the focus of the current study: the SSQ. The SSQ measure was originally developed and evaluated using samples of college students (Sarason et al., 1983). Like other social support measures, the SSQ has been used with non-college student samples in recent studies (Vedhara, Addy, & Wharton, 2000; Forbes & Roger, 1999) and in treatment settings. In one prior study, the SSQ was used to assess war veterans; however, the authors modified the measure and did not report reliability or validity information (Green & Berlin, 1987).

The present study used data collected in a residential PTSD program. The program used the SSQ for assessing current social support among veterans seeking treatment for over eight years. Although the SSQ had not been psychometrically evaluated for use among veterans when the PTSD program collected the data, this retrospective examination and analysis of the program's data set provides evidence for the psychometric adequacy of the SSQ for use with war veterans diagnosed with PTSD. The findings from this study appear to extend the work conducted by Green and Berlin

(1987) and suggest the SSQ may be used, with caution, to assess current social support with PTSD veterans.

Comparisons of the psychometric evaluations of the SSQ. Since many of the same psychometric methods were performed in the present study as were in the original validation study, it seems appropriate to venture comparisons between the two psychometric studies of the SSQ. However, since the Sarason et al. (1983) study and the present study were conducted using different methodologies and this study did not directly compare the two data sets, then the following comparisons are presented in terms of possible future studies using the SSQ.

Sarason et al. (1983) evaluated the SSQ with a sample of college students ($N = 602$) and the present study evaluated the SSQ with a sample of war veterans ($N = 689$). Overall, the comparison of the two studies suggests that the SSQ performed consistently among samples from two different populations: war veterans and college students.

In terms of reliability estimates in the present study (“N” scores = .97, “S” scores = .97), the SSQ remained consistent with the high reliability coefficients found in the original evaluation of the measure with college students (“N” scores = .97, “S” scores = .94). The present study and the Sarason et al. study (1983) produced similar correlation coefficients between the “N” and “S” scales. The modest correlation of .40 ($p < .01$) between the SSQ “N” and “S” scores in the present study was similar to the correlations noted by Sarason and colleagues (.34, p value not reported) when the measure was originally evaluated. This provides support for defining the “N” and “S” scales as separate components of perceived support, since higher correlations would have suggested a more unified measure of social support.

Sarason et al. (1983) performed factor analyses for the “N” and “S” scores in their original study of the SSQ. Strong first factors with each scale emerged, which accounted for 82% of the common variance for the “N” scores and 72% of the common variance for the “S” scores. These first factors are higher than the variance accounted for by the first factors of the scales in the present study (58% for the “N” scores, 59% for the “S” scores). Since Sarason et al. only found one factor, they did not perform a subsequent rotation of factors, which may account for the slight differences between the two studies, since the present study included oblique rotation of the factors. However, consistent with the findings of the present study, Sarason and colleagues concluded one factor was underlying each of the two SSQ scales, each of which represents different dimensions of social support.

Sarason and colleagues (1983) also conducted a subsequent study investigating the construct validity of the SSQ measure. With a sample of college students ($N = 100$ males, 127 females), these authors administered personality assessments, one of which included an assessment for depression (using the Multiple Adjective Affect Check List; MAACL). Since the present study included only males, this comparison will focus on the male subjects of Sarason’s study. Their analysis found an inverse correlation of $-.24$ ($p < .05$) between the SSQ “N” scores and depression, and an inverse correlation of $-.22$ ($p < .05$) between the SSQ “S” scores and depression. The present study found inverse correlations of $-.17$ ($p < .05$) between the SSQ “N” scores and depression, and $-.22$ ($p < .05$) between the SSQ “S” scores and depression. Sarason et al.’s conclusions regarding the relationship between SSQ scales and depression measure indicated significant inverse correlations. These authors did not expand upon their findings in

terms of the levels of correlations between the variables. The findings of both Sarason et al.'s study and the present study provide some evidence for construct validity for the measure; the correlations are low, but are statistically significant. Therefore, it appears that the SSQ performed consistently in its reliability, factor structure, and construct validity across both populations for whom the measure has been psychometrically evaluated.

In spite of the psychometric consistency of the SSQ in the above comparisons, the subjects' responses on the SSQ (college students and war veterans) in the two studies differed. In Sarason's study ($N = 602$), the mean "N" score with the college students was 4.25. In the present study, the mean "N" score with the PTSD war veterans was 1.96. In addition, the mean number of persons listed as supportive for the entire SSQ with Sarason's college student sample was 114.7. The mean number of persons listed as supportive for the entire SSQ with the present study's sample of war veterans was 53.1. This finding suggests that college students report more than twice the number of social supports than PTSD veterans. Smaller differences between the two studies were noted when comparing the mean SSQ "S" scores. The mean "S" score with college students was 5.38 ("fairly satisfied"), while the mean "S" score with war veterans was 4.13 ("a little satisfied"). The differences in satisfaction level between Sarason's college student sample and the war veteran sample were not examined statistically.

An aspect of the war veterans' SSQ mean scores as they relate to the diagnosis of PTSD is worthy of mention. Although war veterans diagnosed with PTSD, on the average, had very few social supports, they reported some satisfaction with this low

number. This finding is not surprising, since the diagnosis of PTSD includes symptoms of social isolation. Therefore, veterans diagnosed with PTSD who tend to socially isolate are likely to have low levels of social support. In addition, veterans seeking PTSD residential treatment have high-levels of PTSD – as reflected in the present study's sample – which would suggest fewer social supports.

The present study as compared to Green and Berlin (1987). Green and Berlin (1987) used a modified version of the SSQ in their research with Vietnam combat veterans. Since the Green and Berlin study is the only other study that used the SSQ with war veterans, it is appropriate to discuss their findings in comparison to the present study's findings. As mentioned in Chapter 1, Green and Berlin did not conduct any psychometric evaluation of the SSQ for use among war veterans prior to or during their study. These authors modified the SSQ to include questions regarding the veterans' use of social supports during their first year from the Vietnam War. In their study, Green and Berlin measured PTSD (using the Figley Rating Scale) and conducted correlations between PTSD symptoms and social support. Green and Berlin found a significant inverse correlation between PTSD symptoms and social support networks used by veterans within their first year after the war ($r = -.26; p < .05$). In their study, these authors only discussed the correlation of the additional items assessing veterans' social support network accessed in their first year after the war and reported no findings regarding their use of the SSQ.

Similar to the present study's findings, Green and Berlin (1987) found an inverse relationship between PTSD symptoms and social support. Although Green and Berlin focused their social support assessment on past social support networks, the

inverse correlations between social support and PTSD discussed in their study ($r = -.26$; $p < .05$) were low, but statistically significant. Their findings were slightly higher than the inverse correlations of the present study.

Current social support and war-related PTSD. As discussed in Chapter 1, the relationship between war veterans diagnosed with PTSD and their current social supports has been studied extensively (Barrett and Mizes, 1988; Boscarino, 1995; Card, 1987; Hendrix et al., 1995; Kadushin, 1985; Keane et al., 1985; Johnson et al., 1997). Nearly all of the studies examining this relationship have concluded that lower perceived social support among war veterans is correlated with higher levels of PTSD. Consistent with previous studies of social support and PTSD, the results of the present study support the notion that lack of current social support among war veterans is related to higher levels of PTSD.

One possible explanation of the inverse relationship noted above might be elucidated through the mean SSQ “S” (satisfaction) score of the war veterans in the present study. The present study found war veterans in the sample reporting that they were on average “a little satisfied” ($M = 4.13$) with their overall social support. This mean satisfaction level reported in the war veteran sample is a higher satisfaction level than would be assumed of subjects with very low levels of social support. One could speculate that since war veterans are not dissatisfied with their current levels of social support, that they would do little to change social supports. The satisfaction level reported by veterans in this study may be reflective of their social isolation and emotional detachment, which are major symptoms of the PTSD diagnosis; however this

speculation is not conclusive and the scope of the present study did not investigate this relationship.

Limitations of the present study

There are several limitations of the present study stemming from the nature of archival data research within a residential VA program: the use of self-report measures, homogeneity of the sample, possible over-reporting of problems by veterans, limitations of the data-set, and levels of significance.

Use of self-report measures. One limitation of this study is that data are based on self-report measures. All assessment information used in the present study regarding severity of symptoms and social supports are from the subjective viewpoints of participants. There were no objective observations or alternative methods to gain less subjective information. The self-report of problems may influence the accuracy of the information if subjects are in a state of crisis or in need of acute psychiatric hospitalization.

Homogeneity of the sample. A pronounced limitation of the present study is the lack of heterogeneity of the war veteran sample. As was noted earlier, a majority of the veterans participating in the study were Vietnam veterans (95%), unemployed (85%), male (100%), Caucasian (64%), disabled (67%), who had served in the Army (66%). In addition, all veterans were diagnosed with PTSD in order to qualify for admission to the PTSD program.

In addition to the demographics reflecting a nearly homogeneous sample, veterans' scores on the measures used in this study also reflect a high percentage of severe PTSD and depression. As discussed in the previous chapter, the sample means

for the Mississippi scale suggested very high PTSD ($M = 136$, $S.D. = 16.7$), with the cut-off (positive for PTSD) score for the measure at 108. This suggests that even veterans one standard deviation below the mean were reporting PTSD symptoms higher than the cut-off score on the measure. Similarly, the mean BDI score among the war veteran sample in this study was within the "extremely severe" level of depression ($M = 31$, $S.D. = 10.3$). As a result of the homogeneity of the sample, there is very little variance in the data set with respect to demographics and psychopathology. This, in turn, makes it more difficult to find covariation among variables when the variance of the subjects is small, reduces the correlations among variables (due to the truncated range of scores), and limits the generalizability of the findings of this study to other settings or populations.

Possible over-reporting of problems. Related to the high scores noted in the present study is the issue of possible over-reporting of psychopathology by veterans seeking inpatient treatment. Unique to the VA health-care system is an increased chance of veteran patients over-reporting symptoms, especially among veterans who are deemed "service-connected disabled" through the VA Benefits Office. "Service-connected" veterans receive monetary compensation for their medical and mental health diagnoses. The "service-connection" of disabled veterans is a long-standing policy stemming from the Civil War. The situation regarding possible over-reporting of symptoms is particularly relevant in this study because a veteran's monetary benefits from the VA for a service-connected PTSD disability produces a temporary increase to 100% disability rating while he or she is engaged in residential treatment. This increase in "service-connected" percentage was in effect throughout the time of data

collection by the SIPU. An increase to 100% disability can translate to approximately \$1500 per month in tax-free income. In addition, some veterans who are in the process of applying for an increase in a service-connected disability rating have been known to apply for residential PTSD treatment as a means of demonstrating a more serious level of disability.

The over-reporting situation may have an influence on how veterans being admitted to a residential PTSD program may present themselves to a treatment team. If service-connected veterans assume that information provided to a PTSD program will eventually help bolster their claim for an increase in disability, their tendency to inflate responses on assessment measures may be increased. It is unknown how frequently the over-reporting issue occurs within VA residential treatment programs; however, the data used in the present study very likely include subjects who reported higher severity of pathology in the hopes of increasing their disability claims. The possibility of over-reporting by veterans may have skewed the BDI and Mississippi Scale scores towards higher depression and PTSD symptoms, respectively, in the SIPU's data set. Therefore, it is recommended that the findings of the present study be interpreted with the over-reporting issue in mind.

Limitations of the data set. The present study was conducted with an existing data set from a residential PTSD treatment program. For eight years, war veterans admitted to the PTSD program completed demographic and psychological testing questionnaires. Due to an archival data set being used in the present study, analysis was limited to the measures that were already implemented by the PTSD program. The data set did not include any comparison group data, which would have provided more

comparative information regarding the SSQ's utility among war veterans. There also were no data collected post-treatment, which would provide even more information regarding changes in symptom severity of levels of social support, and allow evaluation of the SSQ regarding sensitivity to change. As a result, the analysis was limited by the existing information collected by the program.

In addition, during the data collection, there were changes in questionnaires used to collect demographic data, as well as high inconsistencies in data entry. The resulting data set that was analyzed had numerous errors, duplicated entries, and missing information. In addition, the instruments used to collect demographic information changed, which resulted in different data coding. As a result, over 1000 of the subjects admitted to the program during the data collection time period were deleted from the present study's analysis. Although the remaining sample size of the data set ($N = 689$) still constitutes a very large sample, the lack of consistency in data collection resulted in analyzing approximately one-third of the total of eight years of admission data.

Limitations of the measures. Another limitation of the present study pertains to the measurement instruments used by the PTSD program. The SSQ was the only social support measure used by the program, which challenged the ability to perform convergent validity analysis. A second social support measure was not used prior to 1996 on which the convergent validity analysis could be conducted. An adequate – but not ideal – substitute for measuring social support used two items measuring emotional social support (#5 and #13) from the Brief COPE measure. The residential PTSD program instituted the Brief COPE in 1996, six years after the initial data gathering had begun. Therefore, convergent validity analysis was performed on a reduced sample

size ($N = 207$) from the original data set of SSQ scores ($N = 689$). In addition, only two items from the Brief COPE were used, which did not provide a reliable and valid instrument with which to appropriately conduct convergent validity. However, by using the two items from the Brief COPE as indicators, evidence was found to suggest convergent validity with the SSQ scales. A more extensive validated social support measure would have been a preferred instrument with which to conduct convergent validity analysis. Therefore, the reduction in sample size by using the Brief COPE and by using only two items from this measure limits the convergent validity findings, and conclusions need to be interpreted cautiously.

Similar limitations of the data collected impacted on the ability to conduct the discriminant validity analysis. As suggested by Campbell and Fiske (1959), a multitrait-multimethod process should be implemented to evaluate convergent validity and discriminant validity of a measure. Using measures of different constructs would have been a preferred multitrait method in determining discriminant validity. The SIPU's data set did not include other measures of constructs with which a discriminant validity analysis could be conducted. As a result, it was decided that demographic variables of "branch of military service" and "war zone" would be used as discriminant validity variables. There was some evidence to support discriminant validity of the SSQ using these demographic variables. However, it is recognized that these demographic variables do not constitute constructs, which may have an impact on the accuracy of the present study's discriminant validity findings.

Levels of significance. Although construct validity of the SSQ was tentatively established, the absolute values of the correlations, and hence their ability to explain variations, were low – though statistically significant. Since the directions of the correlations were consistently in the predicted direction, this adds to the evidence of construct validity. However, statistical significance of these correlations likely was due, in part, to the very large sample size. Moreover, since six correlations were conducted (SSQ “N” and “S” scores with the BDI, COPE, and Mississippi measures), there is an additional possibility of inflated Type I error throwing the significance of these correlations even more into question. For example, using the Bonferroni correction ($.05/N$, where N = number of calculations) to control for inflated Type I error, the overall level of significance would be adjusted to .008 ($.05/6$). Thus, none of the six correlations would have been statistically significant at this level. This suggests the need for even more caution in interpreting these results.

Limitations of the SSQ measure. The SSQ consists of 54 items, which is admittedly a very long instrument. The SSQ was among several other psychological assessment instruments given by the SIPU during the week of admission to the program. Therefore, each veteran in the present study would have completed several hundred items in the intake questionnaires given by the SIPU. This easily could have produced subject fatigue and decreased the validity of the responses. In addition, the SSQ “N” items appear to ask respondents about current emotional social supports, and not about material or instrumental social supports. As a result, the SSQ appears to be not only a very lengthy questionnaire, but also one that asks individuals very similar questions throughout the measure. This redundancy and the length of the SSQ

instrument may have resulted in numerous missing items or veterans opting to fill out the same answers throughout the questionnaire.

Implications for future research

Psychometrically evaluating the SSQ for use among war veterans diagnosed with PTSD has numerous implications for future research. However, interpretations of the findings of this study must be considered within the context of the limitations outlined above.

By examining the reliability and validity of the SSQ for use among war veterans, this measure performed adequately enough to suggest that the SSQ could be used reliably, and with some degree of validity, in future studies focused on war-related PTSD and social support. Although the present study's subjects were nearly homogeneous, low but significant correlations in predicted directions among the variables emerged in the analysis. Future study could include a more heterogeneous veteran sample, PTSD veterans participating in outpatient treatment, inclusion of a comparison group, and inclusion of veterans from different ethnic backgrounds. A more varied sample of war veterans would provide more information regarding the utility of the SSQ among a wider range of war veterans with different levels of PTSD severity.

Another possible study could be based on the findings from this study of veterans reporting very low numbers of social support, and their being satisfied with the low numbers of social support. Questions could be added to the SSQ that correspond with social isolation and avoidance. By modifying the current SSQ with a war-related PTSD version, more information regarding the level of social avoidance could be

revealed and studied. A modified “war-related PTSD” SSQ could then be psychometrically evaluated for assessing current social support among war veterans.

As discussed in Chapter 1, social support studies have been critiqued for developing new social support measures without using existing social support measures. Therefore, another suggested future study could include psychometric examinations of the SSQ among other populations. These types of studies would further determine the utility of this measure, as well as provide information about different populations and social support as measured by one, consistent social support instrument.

In addition to the research options suggested above, evaluating the abbreviated version of the SSQ, the SSQ6 (Sarason, Sarason, Shearin, and Pierce, 1987) for use among PTSD war veterans could be a useful clinical research project. The SSQ6 was developed as a short, reliable, psychometrically acceptable social support assessment tool in clinical settings where time limits are a consideration. Sarason et al. (1987) conducted a full psychometric evaluation of the SSQ6, comparing their findings with the 27-item SSQ and another short-form SSQ, the SSQ3. The abbreviated versions of the SSQ were developed from principal factor analysis method, with Varimax rotation, that revealed factor loadings for the “N” and “S” scores. The authors went through a selection process of items based on these loadings. The SSQ6 items consist of six items from the full-scale SSQ that had the highest loadings across both “N” and “S” scales. Both the SSQ3 and SSQ6 were found to have acceptable psychometric properties when evaluated among a sample of college students. However, the SSQ6 demonstrated greater internal consistency reliability than the SSQ3, and the SSQ6 correlated highly with the full-scale SSQ. Sarason and colleagues (1987) admit that the SSQ is the

preferred social support measure of the three SSQ measures studied; however, given clinical time constraints, these authors consider the SSQ6 as an acceptable substitute. Since many PTSD programs servicing veterans continue to have limited resources, psychometrically evaluating the SSQ6 for use among war veterans could have research and clinical practice benefits.

One possible follow-up study to the present study would be to use the SIPU's data set and extract the six items making up the SSQ6 from the full SSQ items. Although the findings from a follow-up study with the existing data set would be confounded by the veteran sample having answered questions within the full SSQ as well as other psychological measures, the initial findings from this follow-up analysis could provide some evidence to support the SSQ6 as a possible alternative to the lengthier SSQ.

Implications for practice

Based on the findings of the present study, the SSQ demonstrated acceptable psychometric properties and stands out as the first measure of current social support appropriate for use with PTSD veterans. The implications stemming from this finding for social work practice can apply to a micropractice level (treatment interventions) and to a mezzo practice level (organizational interventions).

Micro-level intervention. As with the research literature on social support, clinical programs working with veterans do not adhere to a consistent way of measuring and assessing social support. Many of the social support measures developed for use with veterans diagnosed with PTSD focus on homecoming stress or social support available within the first year of a veteran's return from the war-zone (Barrett et al.,

1988; Johnson et al., 1997). However, in clinical settings, the veteran's present-day problems and available resources typically are the focus of social work interventions. Therefore, a more appropriate measure for social support would be an instrument that assesses current social support resources. The information gained from assessing current levels of social support can be integrated into a veterans' treatment plan, and a social worker could better understand what informal and formal social supports presently exist for the veteran client. Based on the psychometric evaluation of the present study, the SSQ can be considered an acceptable, although lengthy, instrument for social workers and other mental health professionals to use for assessing current social support with the war veteran population.

Another finding of the present study that has micropractice implications, is that war veterans diagnosed with PTSD may identify higher than expected satisfaction-levels with their low numbers of current social supports. Again, this finding can result in a war veteran's resistance to increasing his or her existing social supports. Once a war veteran begins to build new relationships, a counselor can assist the veteran with the emotional process of investigating underlying traumatically-based issues.

The present study confirmed the inverse relationship between PTSD and social support. This inverse relationship can be the basis for interventions that increase levels of social support, since higher social support levels are correlated with lower PTSD symptoms. Counselors working with PTSD veterans can work toward increasing the number of social supports available to their clients, albeit with an awareness of some veterans' potential resistance to seeking out new social support resources.

Studies using the SSQ as a post-test measure were not located in the literature. Future studies may profitably do so. Social support could be targeted as a major component of PTSD treatment. Clinical research with war veterans could investigate whether PTSD treatment intervention has a relationship with changes in the number and satisfaction levels of social support. This level of understanding would have significant implications for numerous PTSD treatment programs, which may incorporate additional social supports within the treatment milieu, or modify treatment plans to include increasing social supports.

Mezzo-level intervention. Although the inverse relationship between PTSD and social support has been discussed in the literature in numerous publications, the findings of this study are based on a psychometrically evaluated measure of current social support with a seriously impaired PTSD veteran sample. Clinical settings can apply this finding to their PTSD treatment milieu, and expand group therapies, structured social gatherings, or identify social resources in the community for veteran clients.

Mental health counselors working within specialized residential PTSD programs, outpatient PTSD clinics, and Veterans Outreach Centers (Vet Centers) can consider the SSQ an assessment tool for their treatment settings. The SSQ also can be incorporated at a VA-system level among existing specialized PTSD programs. Incorporation of the SSQ across the VA health-care community could allow for system-wide consistency in measuring current levels of social support for veterans seeking treatment for PTSD.

Although the SSQ demonstrated acceptable levels of reliability and the present study provided some evidence to support the validity of the measure for use among war

veterans diagnosed with PTSD, it remains a cumbersome and very lengthy instrument. Therefore, the SSQ is not considered a preferred measure for assessing social support for the war veteran population due to the redundancy of questions, as well as the impractical length of the instrument.

In the validity analysis of the present study, it was found that all the correlations were at low, but statistically significant, levels and in the predicted direction. Initially, these correlations appeared to suggest poor utility of the SSQ for use among war veterans. However, given the high degree of homogeneity of the veteran sample in the present study – which limits the variance of the data - there were still a number of statistically significant findings in the predicted directions. In spite of the very restricted (high distress, high PTSD, high depression) sample of veterans, the statistically significant correlations suggest that the SSQ performed better than initially assumed. In addition, the correlations found in the present study were only slightly lower than the validity correlations from the original Sarason et al. (1983) study. The latter study used the SSQ with a less pathological sample and with more variance within the sample. Therefore, the initial assumption that the SSQ may be a weak instrument for assessing social support among veterans diagnosed with PTSD may not be accurate, since the psychometric evaluation of the SSQ found that the measure did perform in the predicted direction with other constructs, in spite of the highly restricted sample with which the evaluation of the SSQ occurred.

Conclusion

The relationship between social support and PTSD has been investigated and discussed in the literature for over 20 years. In spite of the extensive knowledge gained about this relationship, inconsistencies with social support measurement across studies have been observed. The present study, based on a comprehensive review of the social support literature, is the first to examine the appropriateness of the SSQ for assessing current social support among veterans seeking treatment for PTSD. This study provided evidence supporting previous knowledge regarding social support and PTSD, and expanded the utility of the SSQ to the war veteran population through psychometric analysis. This study's findings are relevant for future research, clinical social work assessment and interventions and support expansion of social support resources to assist veterans diagnosed with PTSD. The limitations of this study included the use of a nearly homogeneous sample of war veterans and the use of a very large, but not always complete, existing data set.

In addition, veterans from Vietnam, Korea, WWII, and Persian Gulf may no longer be alone in their struggles with war-related traumatic stress symptoms. A new generation of individuals with PTSD will likely emerge from the September 11th tragedies and current "war on terrorism." One outcome from the events of September 11th is that the "border" separating civilians and veterans as "survivors of war" has been indelibly blurred. This underscores the need for an increased understanding by mental health providers of all aspects of assisting with the emotional healing of traumatized individuals, including social supports.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Barrett, T.W. & Mizes, J.S. (1988).	Thirty- question social support questionnaire developed for the study. No psychometrics done.	Figley's combat Severity Scale; Hopkins Symptom Checklist for other psych and physical complaints. BDI too.	Vets w/ high social support had fewer PTSD symptoms; those with high combat trauma had more PTSD symptoms. No significant interaction between soc support and combat level.
Barrett, D.H., Resnick, H.S., Foy, D.W., Dansky, B.S., Flanders, W.D., & Stroup, N.E. (1996).	Antisocial Behaviors: Diagnostic Interview Schedule; Used SAS for analysis.	Combat Exp: CES	Correlation analysis revealed significant positive assoc. between # of childhood behavior problems, the CES and the # of PTSD symptoms. Extreme trauma may play an important role in development of adult antisocial behaviors.
Boscarino, J.A. (1995).	Fifteen point scale, based on seven questions related to key facets of social support (# of friends, satisfaction w/relationships, counting on someone when in trouble); qualitative measures, from the Diagnostic Interview Schedule (DIS).	Data collected through psychiatric interviews, military records and telephone interviews. No special PTSD measure used.	VN veterans with low social support had a nearly 80% greater risk of PTSD than veterans with average social support; low support also had a nearly 180% greater risk than veterans with high social support. Cannot conclude causal role of soc support.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Card, J.J (1987).	Surveyed veterans through questionnaires. Questions asked about marriages, children, life satisfaction. No special SS assessment.	No special PTSD measure used. Questions on existence of nightmares, problems with control, anger; all questions were considered indicators of PTSD symptoms.	Environmental variables, such as having a spouse, or being a church-goer were associated with reduced levels of PTSD, or with reduction of degree of association between combat and PTSD.
Farberow, N.L., Kang, H.K., & Bullman, T.A. (1990).	No SS measure used.	Retrospective review of suicide and motor vehicle accident cases.	Conclusions should be considered tentative. Risk of suicide was increased if veteran was single/divorced/separated, unemployed, depressed, had history of post service emotional problems, and post service suicide attempt. Severe depression was most important risk factor for suicide.
Flannery, R.B. (1990).	Reviewed the VN-era Veterans Adjustment Survey (VEVAS), which includes questions regarding social support: 6 regarding support during the war, 4 items regarding support within first year of return.		Overview article about social support and psychological trauma. Noted social support studies with few operational definitions of social support and psychometrically weak measures.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Fontana, A., Rosenheck, R., & Horvath, T. (1997).	Used items within National Vietnam Veterans Readjustment Study (NVVRS) that focused on unit cohesion and homecoming support. Homecoming support = two components: helpfulness in times of need and availability of others for confiding.	Measured as the predicted probability of being diagnosed with PTSD as computed in the NVVRS.	Lack of support upon returning from Vietnam would close off opportunities for veterans to assimilate their war experiences. Lack of communication would result in chronic PTSD symptoms.
Green, M. A., & Berlin, M.A. (1987).	SSQ (Sarason, et al, 1983); modified the measure by adding questions regarding SS resources in first year post-VN. No psychometrics done on the measure.	Combat Rating Scale: 10-item self-rating scale of combat intensity; and Impact of Events Scale (IES).	Negative correlation between PTSD symptoms and veteran's use of SS during the first year back from war-zone. Significant reduction of SS within first year home.
Hendrix, C.C., Jurich, A.P., & Schumm, W.R. (1995)	Familial social support measured.		Significant associations between combat exposure and the development of psychological impairment. Negative correlations between psychological impairment and veteran's perceptions of family satisfaction.
Irving, L.M., Telfer, L., & Blake, D.D. (1997).	Perceived social support scales (PSS; Procidano & Heller, 1983).	Mississippi Scale for Combat-related PTSD; Combat Exposure Scale.	Examined the relationship between dispositional hope and coping and social support among Vietnam veterans. Perceived social

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Irving et al. (1997), continued			support measure produced reliability coefficients of .89 (friends subscale) and .94 (friends subscale). Results indicated higher hope associated with higher coping and perceived social support among veterans.
Johnson, D. R., Lubin, H., Rosenheck, R., Fontana, A., Southwick, S., & Charney, D. (1997)	The West Haven Homecoming Stress Scale (WHHSS). Developed a self-report measure of homecoming support for veterans, assessing level of support.	Mississippi Scale for Combat-related PTSD; Combat Exposure Scale	Reliability and validity testing done; factor analysis reveals factor structure of the measure. Homecoming stress is the most significant predictor of current PTSD: supersedes combat exposure, other non-war traumas, current perceptions of social support, and stressful life events. Veterans' perceptions of their experience immediately after the war, not currently, is most predictive of current sx.
Kadushin, C. (1985)	Legacies of VN study: Naturally occurring social supports. Respondents listed out names of persons who helped them find employment, was their partner/spouse, best friends, and VN veteran friends.	none	Veterans with helpful spouses reported less PTSD symptoms and demoralization. Veterans with unhelpful spouses were worse off than veterans who were not married.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Keane, T.M., Scott, W.O., Chavoya, G.A., Lamparski, D.M., & Fairbank, J.A. (1985).	Five dimensions of social support assessed: material aid, physical assistance, sharing thoughts/feelings in conversations, advice guidance or info, and positive social contact. Two measures: Actual & potential. Two measures: Satisfaction w/degree of support on scale 1-7. and importance during a particular time period.	Clinical interview and structured PTSD diagnostic checklist (based on <i>DSM-III</i>) criteria +ability to identify traumatic events + MMPI and MMPI PTSD sub-scale + and psycho-physiological assessment procedure.	Traumatized Vietnam veterans had significant reduction of social networks over time. PTSD veterans experienced some reduction of soc support immediate upon returning home. Premilitary adjustment: PTSD veterans reported levels of soc support that are not diff from other two comparison groups. Data suggests gradual reduction in social support over time for PTSD vets.
King, D.W., King, L.A., Foy, D.W., Keane, T. M., & Fairbank, J.A. (1999).	Conducted confirmatory factor analyses on items within the National Vietnam Veterans Readjustment Study (NVVRS) and identified 8 variables that represented social support. Examined functional (7 variables) and structural social support (1 variable).	Mississippi Scale items (Keane et al., 1988); also used symptom count from the NVVRS's adaptation of the Diagnostic Interview Schedule	Exposure to multiple stressful events over time may drive current symptoms. Accessing intrapersonal, interpersonal and environmental resources may neutralize negative impact. A chaotic family environment with parental dysfunction and poor attachment may compromise the veteran's ability to build a support network in later years.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Nezu, A.M. & Carnervale, G.J. (1987).	No SS measure used. Problem Solving Inventory (PSI; Heppner & Peterson, 1982) and Coping Reactions Inventory (CRI; Billings & Moos, 1981).	No PTSD measure; Diagnosis determined by symptom reporting during a clinical interview.	PTSD veterans and adjustment disordered veterans had significantly more problem-solving difficulties and coping difficulties.
Powell, G.J., & Doan, R.E. (1992)	Vignettes created of veterans returning home from war: high combat, low SS; high combat, high SS; low combat; low SS; low combat, high SS.	Impact of Events scale and Self-rating Anxiety Scale	Results indicated a significant main effect for SS with IES. Significant main effects for combat and SS with self-rated anxiety. A relationship between actual VN veteran symptoms and perceived symptoms of non-veteran subjects was observed. Association of SS was significant on both anxiety and IES.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Roberts, W.R., Penk, W.E., Gearing, M.L., Robinowitz, R., Dolan, M.P., & Patterson, E.T. (1982).	Family Environment Scale; Horowitz Interpersonal Problem Inventory.	VN-Era Veterans Survey (Figley).	PTSD group scored significantly higher on problems dealing with intimacy and sociability than did comparison groups. PTSD veterans scored higher on the MMPI score for paranoia, psychopathic deviance, social introversion, social maladjustment, family problems and manifest hostility. PTSD group did not differ on Family Environ Scale.
Shehan, C.L. (1987).	Descriptive article about spouse support and VN veterans' adjustment to PTSD. Presents a conceptual model of the role of spouse support.		Socioemotional support must be based on identifying verbal and nonverbal communication that is supportive. Concept of SS is unclear and inconsistent across the literature.

Social Support and PTSD Studies

Study	Social Support Measure	PTSD Measure	Conclusion
Solkoff, N., Gray, Ph., & Keill, S. (1986).	Interviews (1hr-1.5hrs) asking about demographics; upbringing/premilitary information, degree of satisfaction & optimism, post-d/c events, homecoming, transition. No specialized SS measure.	Interviews asking: duties in VN/combat exposure, proximity to death, extent to which they were involved in killing, death of friends, injuries, personal vulnerability, anxiety/guilt, use of drugs, attitudes toward Vietnamese people. No specialized PTSD measure.	PTSD pts reported more negative perceptions of welcome home, more problems in transitioning to civilian status, fewer contacts with other veterans, reported more sleep problems, less support from family and spouses upon returning home, less satisfaction currently with their lives and less optimism for future.
Stretch, R.H. (1985).	VN-Era Veterans Adjustment Survey. Reliable; queries demographics, social support and psychosocial health.	VN-Era Veterans Adjustment Survey. Reliable; attitudes & opinions about war, combat experience.	Greatest explained variance accounted for by combat experience (12%) and social support (12%). PTSD may be affected by combat AND social support recieved during and after service. Social support may play a role in determining whether veteran is able to cope with PTSD.

Perceived Social Support Measurement Studies and Psychometrics

Author	Measure	Psychometrics
Barrera, M., Sandler, I.N., & Ramsey, T.B. (1981)	Arizona Social Support and Interview Schedule	Reliability: 0.88 (full scale); Validity: Not reported.
Cohen, S., & Hoberman, H.M. (1983)	Interpersonal Support Evaluation List (ISEL)	Reliability: for full-scale = 0.90; Test-retest = 0.90; for sub-scales = internal consistency and test-retest reliability range from 0.70 - 0.80. Validity: Not reported.
Curtrona, C.E., & Russell, D.W. (1987)	Social Provisions Scale (SPS)	Reliability: Not reported. Validity: Not reported.
Flaherty, J.A., Garviria, F.M., & Pathak, D.S. (1983)	Social Support Network Inventory (SSNI)	Reliability: 0.821 Validity: Convergent validity and concurrent validity.
Milne, D., & Netherwood, P. (1997)	Support Observation System (SOS)	Reliability: Interrater reliability was 80-88%; kappa coefficients = 0.67 and 0.84. Validity: Content and concurrent.

Perceived Social Support Measurement Studies and Psychometrics

Norbeck, J.S., Lindsey, A.M., & Carrieri, V.L. (1981)	Norbeck Social Support Questionnaire (NSSQ)	Reliability: Test-retest ranged from .85-.92; intercorrelations among all items .97. Validity: Concurrent and content.
Pearlin, L.I., Menaghan, E.G., Lieberman, M.A., & Mullan, J.T. (1981)	Single measure created for this particular study.	Reliability: Not reported. Validity: Not reported.
Reis, J. (1988)	Wilcox Social Support Network Survey	Reliability: Item-total correlations ranged from .35-.57. Internal consistency estimates = .81. Validity: Not reported.
Sarason, I.G., Sarason, B.R., Shearin, E.N., & Pierce, G.R. (1987)	Social Support Questionnaire 3 (SSQ3) and Social Support Questionnaire 6 (SSQ6)	Reliability: SSQ3 N and S scores = 0.84; internal reliabilities (Cronbach's α) SSQ3 N = 0.75 and S = 0.78 (lower than regular SSQ). SSQ6 N = 0.97 and S = 0.96; internal reliabilities (Cronbach's α) SSQ6 for N & S scores ranged from .90-.93.

Perceived Social Support Measurement Studies and Psychometrics

Sarason et al. (1987),
continued

Validity: Construct
validity for SSQ6 using
Beck, MAACL, PBI,
ISSB, FES, and PSS.
Other: Principal factor
analysis with Varimax
rotation with SSQ6.

Sarason, I.G., Levine,
H.M., Basham, R.B., &
Sarason. B.R. (1983)

Social Support Questionnaire
(SSQ)

Reliability: Item-total
score ranged from
.48-.72; correlations
between number of
supports (N) and
level of satisfaction
(S) was .34. Test-
retest correlations for
N and S scores were
.90 and .83,
respectively over 4-
week interval.
Other: Factor
Analysis indicated
factor loadings
exceeded 0.6 for N
score and 0.3 for S
score.

Perceived Social Support Measurement Studies and Psychometrics

Tilden, V.P., Nelson, C.A., & May, B.A. (1990)	Interpersonal Relationships Inventory (IPRI)	<p>Reliability: (Cronbach's α) = 0.82 - 0.91. Two-week stability was 0.91 for support, 0.84 for reciprocity, and 0.81 for conflict.</p> <p>Validity: Construct validity (r = 0.65) with social support and conflict. Criterion-related validity with another social support measure (Personal Resources Questionnaire) (r = 0.64).</p> <p>Other: Exploratory principal components factor analysis.</p>
Turner, R.J., Frankel, B.G., & Levin, D.M. (1983)	Revised Kaplan Scale	<p>Reliability: Two subdimensions of measure were considered highly satisfactory, but no coefficients were reported.</p> <p>Validity: Not reported.</p> <p>Other: Factor analysis identified two factors (love/esteem support and social network items).</p>
Weinert, C. (1987)	Personal Resource Questionnaire (PRQ)	<p>Reliability: Conducted, but no coefficients reported.</p> <p>Validity: Construct validity noted between</p>

Perceived Social Support Measurement Studies and Psychometrics

Weinert (1987), continued	measure with depression and anxiety scales. Other: None
------------------------------	---

Weinert (1990)	Personal Resources Questionnaire 85 (PRQ85)	Reliability: Alpha coefficients ranged from .87-.90. Validity: Moderate correlations? Other: Factor Analysis suggests underlying structure of measure is 3- factor structure.
----------------	--	---

SOCIAL SUPPORT QUESTIONNAIRE

Name _____ Student Number _____

Age _____ Sex _____ Date _____

Class in School: Freshman Sophomore Junior Senior Graduate

INSTRUCTIONS

The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the person's initials and their relationship to you (see example). Do not list more than one person next to each of the letters beneath the question.

For the second part, circle how satisfied you are with the overall support you have.

If you have no support for a question, check the words "no one," but still rate your level of satisfaction. Do not list more than nine persons per question.

Please answer all questions as best you can. All your responses will be kept confidential.

EXAMPLE

Ex) Who do you know whom you can trust with information that could get you in trouble?

_____ No one	A)	R.N. (brother)	D)	T.N. (father)	G)
	B)	L.M. (friend)	E)	L.M. (employer)	H)
	C)	R.S. (friend)	F)		I)

How satisfied?

very	fairly	a little	a little	fairly	very
Satisfied	satisfied	satisfied	dissatisfied	dissatisfied	dissatisfied

1) Whom can you really count on to listen to you when you need to talk?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

2) How satisfied?

- | | | | | | |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|
| 6) very
Satisfied | 5) fairly
satisfied | 4) a little
satisfied | 3) a little
dissatisfied | 2) fairly
dissatisfied | 1) very
dissatisfied |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|

3) Whom could you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

4) How satisfied?

- | | | | | | |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|
| 6) very
Satisfied | 5) fairly
satisfied | 4) a little
satisfied | 3) a little
dissatisfied | 2) fairly
dissatisfied | 1) very
dissatisfied |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|

5) Whose lives do you feel that you are an important part of?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

6) How satisfied?

- | | | | | | |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|
| 6) very
Satisfied | 5) fairly
satisfied | 4) a little
satisfied | 3) a little
dissatisfied | 2) fairly
dissatisfied | 1) very
dissatisfied |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|

7) Whom do you feel would help you if you were married and had just separated from your spouse?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

8) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

9) Whom could you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?

0)_____ No one	A)	D)	G)
	B)	E)	H)
	C)	F)	I)

10) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

11) Whom can you talk with frankly, without having to watch what you say?

0)_____ No one	A)	D)	G)
	B)	E)	H)
	C)	F)	I)

12) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

13) Who helps you feel that you truly have something positive to contribute to others?

0)_____ No one	A)	D)	G)
	B)	E)	H)
	C)	F)	I)

14) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

15) Whom can you really count on to distract you from your worries when you feel under stress?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

16) How satisfied?

- | | | | | | |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
| 6) very Satisfied | 5) fairly satisfied | 4) a little satisfied | 3) a little dissatisfied | 2) fairly dissatisfied | 1) very dissatisfied |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|

17) Whom can you really count on to be dependable when you need help?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

18) How satisfied?

- | | | | | | |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
| 6) very Satisfied | 5) fairly satisfied | 4) a little satisfied | 3) a little dissatisfied | 2) fairly dissatisfied | 1) very dissatisfied |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|

19) Whom could you really count on to help you out if you had just been fired from your job or expelled from school?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

20) How satisfied?

- | | | | | | |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
| 6) very Satisfied | 5) fairly satisfied | 4) a little satisfied | 3) a little dissatisfied | 2) fairly dissatisfied | 1) very dissatisfied |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|

21) With whom can you totally be yourself?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

22) How satisfied?

- | | | | | | |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|
| 6) very
Satisfied | 5) fairly
satisfied | 4) a little
satisfied | 3) a little
dissatisfied | 2) fairly
dissatisfied | 1) very
dissatisfied |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|

23) Whom do you feel really appreciates you as a person?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

24) How satisfied?

- | | | | | | |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|
| 6) very
Satisfied | 5) fairly
satisfied | 4) a little
satisfied | 3) a little
dissatisfied | 2) fairly
dissatisfied | 1) very
dissatisfied |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|

25) Whom can you really count on to give you useful suggestions that help you to avoid making mistakes?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

26) How satisfied?

- | | | | | | |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|
| 6) very
Satisfied | 5) fairly
satisfied | 4) a little
satisfied | 3) a little
dissatisfied | 2) fairly
dissatisfied | 1) very
dissatisfied |
|----------------------|------------------------|--------------------------|-----------------------------|---------------------------|-------------------------|

27) Whom can you count on to listen openly and uncritically to your innermost feelings?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |

- 28) How satisfied?
- | | | | | | |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
| 6) very Satisfied | 5) fairly satisfied | 4) a little satisfied | 3) a little dissatisfied | 2) fairly dissatisfied | 1) very dissatisfied |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
- 29) Who will comfort you when you need it by holding you in their arms?
- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |
- 30) How satisfied?
- | | | | | | |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
| 6) very Satisfied | 5) fairly satisfied | 4) a little satisfied | 3) a little dissatisfied | 2) fairly dissatisfied | 1) very dissatisfied |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
- 31) Whom do you feel would help if a good friend of yours had been in a car accident and was hospitalized in serious condition?
- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |
- 32) How satisfied?
- | | | | | | |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
| 6) very Satisfied | 5) fairly satisfied | 4) a little satisfied | 3) a little dissatisfied | 2) fairly dissatisfied | 1) very dissatisfied |
|-------------------|---------------------|-----------------------|--------------------------|------------------------|----------------------|
- 33) Whom can you really count on to help you feel more relaxed when you are under pressure or tense?
- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |
- 34) How satisfied?
- | | | | | | |
|---------|-----------|-------------|-------------|-----------|---------|
| 6) very | 5) fairly | 4) a little | 3) a little | 2) fairly | 1) very |
|---------|-----------|-------------|-------------|-----------|---------|

Satisfied satisfied satisfied dissatisfied dissatisfied dissatisfied

35) Whom do you feel would help if a family member very close to you died?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

36) How satisfied?

- | | | | | | |
|-----------|-----------|-------------|--------------|--------------|--------------|
| 6) very | 5) fairly | 4) a little | 3) a little | 2) fairly | 1) very |
| Satisfied | satisfied | satisfied | dissatisfied | dissatisfied | dissatisfied |

37) Who accepts you totally, including both your worst and your best points?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

38) How satisfied?

- | | | | | | |
|-----------|-----------|-------------|--------------|--------------|--------------|
| 6) very | 5) fairly | 4) a little | 3) a little | 2) fairly | 1) very |
| Satisfied | satisfied | satisfied | dissatisfied | dissatisfied | dissatisfied |

39) Whom can you really count on to care about you, regardless of what is happening to you?

- | | | | |
|----------------|----|----|----|
| 0)_____ No one | A) | D) | G) |
| | B) | E) | H) |
| | C) | F) | I) |

40) How satisfied?

- | | | | | | |
|-----------|-----------|-------------|--------------|--------------|--------------|
| 6) very | 5) fairly | 4) a little | 3) a little | 2) fairly | 1) very |
| Satisfied | satisfied | satisfied | dissatisfied | dissatisfied | dissatisfied |

41) Whom can you really count on to listen to you when you are very angry at someone else?

- 0)_____ No one A) D) G)
 B) E) H)
 C) F) I)
- 42) How satisfied?
- 6) very 5) fairly 4) a little 3) a little 2) fairly 1) very
 Satisfied satisfied satisfied dissatisfied dissatisfied dissatisfied
- 43) Whom can you really count on to tell you, in a thoughtful manner, when you need to improve in some way?
- 0)_____ No one A) D) G)
 B) E) H)
 C) F) I)
- 44) How satisfied?
- 6) very 5) fairly 4) a little 3) a little 2) fairly 1) very
 Satisfied satisfied satisfied dissatisfied dissatisfied dissatisfied
- 45) Whom can you really count on to help you feel better when you are feeling generally down-in-the-dumps?
- 0)_____ No one A) D) G)
 B) E) H)
 C) F) I)
- 46) How satisfied?
- 6) very 5) fairly 4) a little 3) a little 2) fairly 1) very
 Satisfied satisfied satisfied dissatisfied dissatisfied dissatisfied
- 47) Whom do you feel truly loves you deeply?
- 0)_____ No one A) D) G)
 B) E) H)
 C) F) I)
- 48) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

49) Whom can you count on to console you when you are very upset?

0)_____ No one	A)	D)	G)
	B)	E)	H)
	C)	F)	I)

50) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

51) Whom can you really count on to support you in major decisions you make?

0)_____ No one	A)	D)	G)
	B)	E)	H)
	C)	F)	I)

52) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

53) Whom can you really count on to help you feel better when you are very irritable, ready to get angry at almost anything?

0)_____ No one	A)	D)	G)
	B)	E)	H)
	C)	F)	I)

54) How satisfied?

6) very Satisfied	5) fairly satisfied	4) a little satisfied	3) a little dissatisfied	2) fairly dissatisfied	1) very dissatisfied
----------------------	------------------------	--------------------------	-----------------------------	---------------------------	-------------------------

THE REVISED MISSISSIPPI SCALE

Instructions: Please circle the number that best describes how you feel about each statement.

	1	2	3	4	5
	NOT AT ALL TRUE	RARELY TRUE	SOMETIMES TRUE	FREQUENTLY TRUE	ALMOST ALWAYS TRUE
1. Before the military/war, I had more close friends than I have now.	1	2	3	4	5
2. I do not feel guilt over the things that I did in the military/war.	1	2	3	4	5
3. If someone pushes me too far, I am likely to become agitated.	1	2	3	4	5
4. If something happens that reminds me of the military/war, I become very distressed and upset.	1	2	3	4	5
5. The people who know me best are worried about my temper.	1	2	3	4	5
6. I am able to get emotionally close to others.	1	2	3	4	5
7. I have nightmares of experiences in the military/war that really happened.	1	2	3	4	5
8. When I think of some of the things I did in the military/war, I wish I were dead.	1	2	3	4	5
9. It seems as if I have no feelings.	1	2	3	4	5
10. Lately, I have felt like killing myself.	1	2	3	4	5
11. I fall asleep, stay asleep and awaken only when the alarm goes off.	1	2	3	4	5
12. I wonder why I am still alive when others died in the military/war.	1	2	3	4	5
13. Being in certain situations makes me feel as though I am back in the military/war.	1	2	3	4	5
14. My dreams at night are so real that I waken in a cold sweat and force myself to stay awake.	1	2	3	4	5
15. I feel like I cannot go on.	1	2	3	4	5
16. I do not laugh or cry at the same things other people do.	1	2	3	4	5
17. I still enjoy doing many things that I used to enjoy.	1	2	3	4	5
18. Daydreams are very real and frightening.	1	2	3	4	5
19. I have found it easy to keep a job since my separation from the military/war.	1	2	3	4	5
20. I have trouble concentrating on tasks.	1	2	3	4	5

Appendix D

1 NOT AT ALL TRUE	2 RARELY TRUE	3 SOMETIMES TRUE	4 FREQUENTLY TRUE	5 ALMOST ALWAYS TRUE			
21. I have cried for no good reason.			1	2	3	4	5
22. I enjoy the company of others.			1	2	3	4	5
23. I am frightened by my urges.			1	2	3	4	5
24. I fall asleep easily at night.			1	2	3	4	5
25. Unexpected noises make me jump.			1	2	3	4	5
26. No one understands how I feel, not even my family.			1	2	3	4	5
27. I am an easy-going, even-tempered person.			1	2	3	4	5
28. I feel there are certain things that I was involved with in the military/war that I can never tell anyone, because no one would ever understand.			1	2	3	4	5
29. There have been times when I used alcohol (or other drugs) to help me sleep or to make me forget about the things that happened while I was in the military/war.			1	2	3	4	5
30. I feel comfortable when I am in a crowd.			1	2	3	4	5
31. I lose my cool and explode over minor everyday things.			1	2	3	4	5
32. I am afraid to go to sleep at night.			1	2	3	4	5
33. I try to stay away from anything that will remind me of events which happened in the military/war.			1	2	3	4	5
34. My memory is as good as it ever was.			1	2	3	4	5
35. I have a hard time expressing my feelings, even to the people I care about.			1	2	3	4	5
36. At times I suddenly act or feel as though something that happened in the military/war were happening all over again.			1	2	3	4	5
37. I am not able to remember some important things that happened in the military/war.			1	2	3	4	5
38. I feel "super alert" or "on guard" much of the time.			1	2	3	4	5
39. If something happens that reminds me of the military/war, I get so anxious or panicky that my heart pounds hard; I have trouble getting my breath; I sweat, tremble, shake, or feel dizzy, tingly, or faint.			1	2	3	4	5
40. When I think of things that happened in the military/war, I feel helpless or overwhelmed.			1	2	3	4	5

BECK DEPRESSION INVENTORY

DATE:

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling in the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and I can't snap out of it
3 I am so sad or unhappy that I can't stand it.
2. 0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.
3. 0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.
4. 0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.
5. 0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.
6. 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.
7. 0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.
8. 0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.
9. 0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.
10. 0 I don't cry any more than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.
11. 0 I am no more irritated now than I every am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.

12. 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.
13. 0 I make decision about as well as I ever could.
1 I put off making decision more than I used to.
2 I have greater difficulty in making decision than before.
3 I can't make decisions at all anymore.
14. 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance.
3 I believe that I look ugly.
15. 0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.
16. 0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. 0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.
18. 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.
19. 0 I haven't lost much weight, if any, lately.
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.

I am purposely trying to lose weight by eating less. Yes _____
No _____
20. 0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to think about anything else.
3 I am so worried about my physical problems that I cannot think about anything else.
21. 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

**COPE
(Brief Version)**

Appendix F

Name: _____

Date: _____

INSTRUCTIONS:

These items deal with ways you have been coping with the PTSD symptoms in your life during the past week. There are many ways to try to deal with problems. These items ask what you've been doing to cope with your PTSD. Obviously people deal with things in different ways, but we're interested in how you've tried to deal with it. We want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not – just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all.

3 = I've been doing this a medium amount.

2 = I've been doing this a little bit.

4 = I've been doing this a lot.

- _____ 1. I've been turning to work or other activities to take my mind off things.
- _____ 2. I've been concentrating my efforts on doing something about the situation I'm in.
- _____ 3. I've been saying to myself "this isn't real."
- _____ 4. I've been using alcohol or other drugs to make myself feel better.
- _____ 5. I've been getting emotional support from others.
- _____ 6. I've been giving up trying to deal with it.
- _____ 7. I've been taking action to make the situation better.
- _____ 8. I've been refusing to believe that it has happened.
- _____ 9. I've been saying things to let my unpleasant feelings escape.
- _____ 10. I've been using alcohol and other drugs to help me get through it.
- _____ 11. I've been trying to see it in a different light, to make it seem more positive.
- _____ 12. I've been trying to come up with a strategy about what to do.
- _____ 13. I've been getting comfort and understanding from someone.
- _____ 14. I've been giving up the attempt to cope.
- _____ 15. I've been looking for something good in what is happening.
- _____ 16. I've been making jokes about it.
- _____ 17. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.
- _____ 18. I've been accepting the reality of the fact that it has happened.
- _____ 19. I've been expressing my negative feelings.
- _____ 20. I've been trying to find comfort in my religion or spiritual beliefs.
- _____ 21. I've been learning to live with it.
- _____ 22. I've been thinking hard about what steps to take.
- _____ 23. I've been praying or meditating.
- _____ 24. I've been making fun of the situation.

REFERENCES

- Abueg, F. R., & Fairbank, J. A. (1992). Behavioral treatment of posttraumatic stress disorder and co-occurring substance abuse, in P.A. Saigh, (Ed.). *Posttraumatic stress disorder: a behavioral approach to assessment and treatment* (pp. 111-146). Boston: Allyn and Bacon,.
- Allgower, A., Wardles, J., & Steptoe, A. (2001). Depressive symptoms, social support, and personal health behaviors in young men and women. *Health Psychology, 20* (3), 223-227.
- American Psychiatric Association (1980). *Diagnostic and Statistical Manual (3rd ed.)*. Washington, DC: Author.
- American Psychiatric Association (1987). *Diagnostic and Statistical Manual (3rd ed., revised)*. Washington, DC: Author.
- American Psychiatric Association (1994). *Diagnostic and Statistical Manual (4th ed.)*. Washington, DC: Author.
- Aneshensel, C.S., & Frerichs. R.R. (1982). Stress, support, and depression: a longitudinal causal model. *Journal of Community Psychology, 10*, 363-376.
- Aneshensel, C.S., & Stone, J.D. (1982). Stress and depression. *Archives of General Psychiatry, 39*, 1392-1396.
- Barrera, M., Sandler, I.N., & Ramsey, T. B. (1981). Preliminary development of a scale of social support: Studies on college students, *American Journal of Community Psychology, 9*, 435-447.

- Barrett, T.W., & Mizes, J.S. (1988). Combat level and social support in the development of posttraumatic stress disorder in Vietnam veterans. *Behavior Modification*, 12 (1), 100-115.
- Barrett, D.H., Resnick, H.S., Foy, D.W., Dansky, B.S., Flanders, W.D., & Stroup, N.E. (1996). Combat exposure and adult psychosocial adjustment among U.S. Army veterans serving in Vietnam, 1965-1971, *Journal of Abnormal Psychology*, 105 (4), 575-581.
- Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571.
- Berkman, L.F. & Syme, S.L. (1979). Social networks, host resistance, and mortality: a nine –year follow-up study of Alameda County residents. *American Journal of Epidemiology*, 109, 186-204.
- Berkman, L.F., Vaccarion, V., & Seeman, T. (1993). Gender differences in cardiovascular morbidity and mortality: The contribution of social networks and support. *Annals of Behavioral Medicine*, 15, 112-118.
- Billings, A.G., & Moos, R.H. (1982). The role of coping resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 7 (2), 139-157.
- Blazer, D.G. (1983). Impact of late-life depression on the social network. *American Journal of Psychiatry*, 2, 162-165.
- Borus, J.F. (1973). Reentry: I. Adjustment issues facing the Vietnam returnee. *Archives of General Psychiatry*, 28 (4), 501-506.

- Boscarino, J.A. (1995). Post-traumatic stress and associated disorders among Vietnam veterans: the significance of combat exposure and social support. *Journal of Traumatic Stress, 8* (2), 317-336.
- Brim, J., Witcoff, C., & Wetzell, R.D. (1982). Social network characteristics of hospitalized depressed patients. *Psychological Reports, 50*, 423-433.
- Brugha, T.S., Bebbington, P.E., Stretch, D.D., MacCarthy, B., & Wykes, T. (1997). Predicting the short-term outcome of first episodes and recurrences of clinical depression: a prospective study of life events, difficulties, and social support networks. *Journal of Clinical Psychiatry, 58* (7), 298-306.
- Bullman, T.A., Kang, H.K., & Thomas, T.L. (1991). Posttraumatic stress disorder among Vietnam veterans on the Agent Orange Registry: a case-control analysis. *Annals of Epidemiology, 1* (6), 505-512.
- Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multiethod matrix. *Psychological Bulletin, 56*, 81-105.
- Card, J. J. (1987). Epidemiology of PTSD in a national cohort of Vietnam veterans. *Journal of Clinical Psychology, 43* (1), 6-17.
- Carver, C.S., Scheier, M.F., & Weintraub, J.K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267-283.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*, 300-314.

- Cohen, S. Gottlieb, B.H., & Underwood, L.G. (2000). Social relationships and health. In S. Cohen, L.G. Underwood, & B.H. Gottlieb (Eds.) *Social Support Measurement and Intervention: A Guide for Health and Social Science*, (pp. 3-25). New York: Oxford Press.
- Cohen, S., & Hoberman, H.M. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology*, 13 (2), 99-125.
- Cohen, S., & McKay, G. (1984). Social support, stress and the buffering hypothesis: a theoretical analysis, In A. Baum, S.E. Taylor, & J.E. Singer (Eds.) *Handbook of psychology and health*, (pp. 253-265). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, S., & Syme, S. L. (1985). Issues in the study and application of social support, In S. Cohen & S. L Syme, *Social Support and Health*, San Diego: Academic Press, 3-21.
- Cohen, S., & Wills, T.A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310-357.
- Connor, K.M., & Davidson, J.R. (1997). Familial risk factors in posttraumatic stress disorder. *Annals of the New York Academy of Sciences*, 821, 35-51.
- Coyne, J.C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation, *Journal of Consulting and Clinical Psychology*, 54 (4), 454-460.
- Cutrona, C.E., & Russell, D. (1987). The provisions of social relationships and adaptation to stress. In W.H. Jones & D. Perlman (Eds.), *Advances in personal relationships* (pp. 37-67). Greenwich, CT: JAI Press.

- Cutrona, C.E., & Russell, D.W. (1990). Type of social support and specific stress: toward a theory of optimal matching, in B.R. Sarason & I.G. Sarason (Eds.) *Social support: An interactional View* (pp. 319-366), NY: Wiley & Sons.
- Daniels, L.R., & Scurfield, R.M. (1994). War-related post-traumatic stress disorder: chemical addictions and nonchemical habituating behaviors, In M.B. Williams & J.F. Sommer (Eds.). *Handbook of post-traumatic therapy* (pp. 205-218). Westport, Connecticut: Greenwood Press.
- Davidson, J. R., & Fairbank, J. A. (1993). The epidemiology of posttraumatic stress disorder, in J.R.T. Davidson and E.B. Foa (Eds.) *Posttraumatic stress disorder: DSM-IV and beyond, 1st edition* (pp. 147-169). Washington, DC: American Psychiatric Press.
- Dean, A. & Ensel, W.M. (1982). Modelling social support, life events, competence, and depression in the context of age and sex. *Journal of Community Psychology*, 10, 392-408.
- Dean, A., Lin, N., & Ensel, W.M. (1981). The epidemiological significance of social support systems in depression. *Research in Community and Mental Health*, 2, 77-109.
- Donovan, B. S.; Padin-Rivera, E.; Dowd, T.; & Blake, D. D. (1996). Childhood factors and war zone stress in chronic PTSD. *Journal of Traumatic Stress*, 9 (2), 361-368
- Elliott, T.R., & Shewchuk, R.M. (1995). Social support and leisure activities following severe physical disability: testing the mediating effects of depression. *Basic and Applied Social Psychology*, 16 (4), 471-487.

- Emery, V., Olga, B., Emery, P.E., Shama, D.K., Quiana, N.A., & Jassani, A.K. (1991). Predisposing variables in PTSD patients, *Journal of Traumatic Stress*, 4 (3), 325-343.
- Farberow, N.L., Kang, H.K., & Bullman, T.A. (1990). Combat experience and post service psychosocial status as predictors of suicide in Vietnam veterans, *Journal of Nervous and Mental Disease*, 178 (1), 32-37.
- Flaherty, J.A., Gaviria, F.M., & Pathak, D.S. (1983). The measurement of social support: The Social Support Network Inventory. *Comprehensive Psychiatry*, 24 (6), 521-529.
- Flannery, R.B. (1990). Social support and psychological trauma: a methodological review, *Journal of Traumatic Stress*, 3(4), 593-611.
- Florian, V., Mikulincer, M., & Taubman, O. (1995). Does hardiness contribute to mental health during a stressful real-life situation? The roles of appraisal and coping. *Journal of Personality and Social Psychology*, 68 (4), 687-695.
- Folkman, S., & Lazarus, R.S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology*, 54 (3), 466-475.
- Fontana, A., & Rosenheck, R.A. (1993). A causal model of the etiology of war-related PTSD. *Journal of Traumatic Stress*, 6 (4), pp. 475-500.
- Fontana, A., & Rosenheck, R.A. (1994). Posttraumatic stress disorder among Vietnam theater veterans: a causal model of etiology in a community sample. *Journal of Nervous and Mental Disease*, 182 (12), 677-684.
- Fontana, A., Rosenheck, R., & Horvath, T. (1997). Social support and psychopathology in the war zone, *Journal of Nervous and Mental Disease*, 185 (11), 675-681.

- Forbes, A., & Roger, D., (1999). Stress, social support and fear of disclosure, *British Journal of Health Psychology*, 4 (2), 165-179.
- Fratiglioni, L., Wang, H.X., Ericsson, K., Maytan, M., & Winblad, B. (2000). Influence of social network on occurrence of dementia: a community-based longitudinal study, *Lancet*, 355, 1315-1319.
- Gold, P.B., Engdahl, B.E., Eberly, R.E., Blake, R.J., Page, W.F., & Frueh, B.C. (2000). Trauma exposure, resilience, social support, and PTSD construct validity among former prisoners of war, *Social Psychiatry and Psychiatric Epidemiology*, 35, 36-42.
- Grant, I., Patterson, T.L., & Yager, J. (1988). Social supports in relation to physical health and symptoms of depression in the elderly. *American Journal of Psychiatry*, 145 (10), 1254-1257.
- Green, M.A. & Berlin, M.A. (1987). Five psychosocial variables related to the existence of post-traumatic stress disorder symptoms, *Journal of Clinical Psychology*, 43 (6), 643-649.
- Green, B.L., Grace, M.C., Lindy, J.D., Gleser, G.C., & Leonard, A.C. (1990). Risk factors for PTSD and other diagnoses in a general sample of Vietnam veterans, *American Journal of Psychiatry*, 147 (6), 729-733.
- Helgeson, V., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology*, 15, 135-148.

- Hendrix, C.C., Jurich, A.P., & Schumm, W.R. (1995). Long-term impact of Vietnam war service on family environment and satisfaction. *Families in Society: The Journal of Contemporary Human Services*, 76 (8), 498-506.
- House, J.S., & Kahn, R.L. (1985). Measures and concepts of social support. In S. Cohen & S.L. Syme (Eds). *Social Support and Health* (pp. 83-107). San Diego: Academic Press.
- House, J.S., Landis, K.R., & Umberson, D. (1988). Social relationships and health. *Science*, 241, 540-545.
- Hybels, C.F., Blazer, D.G., & Pieper, C.F. (2001). Toward a threshold for subthreshold depression: an analysis of correlates of depression by severity of symptoms using data from an elderly community sample. *The Gerontologist*, 41 (3), 357-365.
- Irving, L.M., Telfer, L., & Blake, D.D. (1997). Hope, coping, and social support in combat-related posttraumatic stress disorder, *Journal of Traumatic Stress*, 10 (3), 465-479.
- Jemmott, J.B., & Locke, S.E. (1984). Psychosocial factors, immunologic mediation, and human susceptibility to infectious diseases: How much do we know? *Psychological Bulletin*, 95(1), 78-108.
- Johnson, D. R., Lubin, H., Rosenheck, R., Fontana, A., Southwick, S., & Charney, D. (1997). The impact of the homecoming reception on the development of posttraumatic stress disorder: The West Haven Homecoming Stress Scale (WHHSS), *Journal of Traumatic Stress*, 10 (2), 259-277.

- Kaplan, G.A., Salonen, J.T., Cohen, R.D., Brand, R.J., Syme, S.L., & Puska, P. (1988). Social connections and mortality from all causes and from cardiovascular disease: Prospective evidence from Eastern Finland. *American Journal of Epidemiology*, 128, 370-380.
- Kadushin, C. (1985). Social networks, helping networks, and Viet Nam veterans, In S. M. Sonnenberg, A. S. Blank, & Talbott, J.A. (Eds.), *The trauma of war: stress and recovery in Viet Nam veterans*, (pp. 57-68). Washington: American Psychiatric Press.
- Keane, T.M., Scott, W. O., Chavoya, G. A., Lamparski, D.M., & Fairbank, J.A. (1985). Social support in Vietnam veterans with posttraumatic stress disorder: a comparative analysis. *Journal of Consulting and Clinical Psychology*, 53 (1), 95-102.
- Keane, T.M., Caddell, J.M., & Taylor, K.L. (1988). Mississippi Scale for Combat-Related Posttraumatic Stress Disorder: three studies in reliability and validity. *Journal of Consulting and Clinical Psychology*, 56 (1), 85-90.
- Kessler, R.C., & McLeod, J.D. (1984). Sex differences in vulnerability to undesirable life events. *American Sociological Review*, 49, 620-631.
- Kim, O. (2001). Sex differences in social support, loneliness, and depression among Korean college students. *Psychological Reports*, 88, 521-526.
- King, D.W., King, L.A., Foy, D.W., Keane, T.M., & Fairbank, J.A. (1999). Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: risk factors, war-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology*, 108 (1), 164-170.

- Kulka, R.A., Schlenger, W.E., Fairbank, J.A., Hough, R.L., Jordan, B.K., Marmar, C.R., & Weiss, D.S. (1990). Why is it that some developed PTSD and others did not? In *Trauma and the Vietnam War generation: report of findings from the National Vietnam Veterans Readjustment Study* (pp. 73-85). New York: Brunner/Mazel.
- Lakey, B., & Cohen, S. (2000). Social support theory and measurement. In S. Cohen, L.G. Underwood, & B.H. Gottlieb (Eds.) *Social Support Measurement and Intervention: A Guide for Health and Social Sciences* (pp. 29-52). New York: Oxford Press.
- Lieberman, M.A. (1982). The effects of social supports on responses to stress. In L. Goldberger & S. Breznitz (Eds.), *Handbook of Stress: Theoretical and Clinical Aspects* (pp. 764-782). New York: Free Press.
- Lieberman, M.A. (1986). Social supports – the consequences of psychologizing: a commentary, *Journal of Consulting and Clinical Psychology*, 54 (4) 461-465.
- Macklin, M.L., Metzger, L.J., Litz, B.T., McNally, R.J., Lasko, N.B., Orr, S.P., & Pitman, R. K. (1998). Lower precombat intelligence is a risk factor for posttraumatic stress disorder, *Journal of Consulting and Clinical Psychology*, 66 (2), 323-326.
- Mikulincer, M., & Florian, V. (1995). Appraisal of and coping with a real-life stressful situation: The contribution of attachment styles. *Personality and Social Psychology Bulletin*, 21 (4), 406-414.
- Milne, D., & Netherwood, P. (1997). Seeking social support: An observational instrument and illustrative analysis, *Behavioural & Cognitive Psychotherapy*, 25 (2), 173-185.

- Monroe, S.M., Bromet, E.J., Connel, M.M., & Steiner, S.C. (1986). Social support, life events, and depressive symptoms: A 1-year prospective study. *Journal of Consulting and Clinical Psychology*, 54 (4), 424-431.
- Nezu, A.M. & Carnervale, G.J. (1987). Interpersonal problem solving and coping reactions of Vietnam veterans with posttraumatic stress disorder, *Journal of Abnormal Psychology*, 96 (2), 155-157.
- Norbeck, J.S, Lindsey, A.M., & Carrieri, V.L. (1981). The development of an instrument to measure social support, *Nursing Research*, 30 (5), 264-269.
- Nunnally, J.C. (1978). *Psychometric theory*, 2nd edition. McGraw Hill: San Francisco, 94-113.
- O'Hara, M.W. , Rehm, L.P., & Campbell, S.B. (1983). Postpartum depression: A role for social network and life stress variables. *Journal of Nervous and Mental Disease*, 171 (6), 336-341.
- Orth-Gomer, K., & Unden, A.-L. (1987). The measurement of social support in population surveys. *Social Science and Medicine*, 24, 83-94.
- O'Toole, B.I., Marshall, R.P., Schureck, R.J., & Dobson, M. (1998). Risk factors for posttraumatic stress disorder in Australian Vietnam veterans, *Australian and New Zealand Journal of Psychiatry*, 32 (1), 21-31
- Pedhazur, E.J., & Schmelkin, L.P. (1991). Measurement, Design, and Analysis: an integrated approach. Hillsdale, NJ: Lawrence Erlbaum Associates, 73-75.
- Pearlin, L.I., Menaghan, E.G., Lieberman, M.A., & Mullan, J.T. (1981). The stress process, *Journal of Health and Social Behavior*, 22, 337-356.

- Pearlin, L.I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19*, 2-21.
- Pengilly, J.W., & Dowd, E.T. (2000). Hardiness and social support as moderators of stress. *Journal of Clinical Psychology, 56* (6), 813-820.
- Perkal, A. (1992). War related post traumatic stress disorder: A historical perspective. *National Center for PTSD Clinical Newsletter, 2* (2), 19.
- Pierce, G.R., Lakey, B., Sarason, I.G., Sarason, B.R., & Joseph, H.J. (1997). Personality and social support processes: A conceptual overview. In G.R. Pierce, B. Lakey, I.G. Sarason, & B.R. Sarason (Eds.) *Sourcebook of social support and personality*. New York: Plenum Press.
- Powell, G.J., & Doan, R.E. (1992). Combat and social support as variables in perceived symptomatology of combat-related posttraumatic stress disorder, *Psychology Reports, 3*, 1187-1194.
- Procidano, M.E., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of community Psychology, 11*, 1-24.
- Ptacek, J.T., & Gross, S.A. (1997). Coping as an individual difference variable. In G.R. Pierce, B. Lakey, I.G. Sarason, & B.R. Sarason (Eds.) *Sourcebook of Social Support and Personality* (pp. 69-91). New York: Plenum Press.
- Reis, J. (1988). A factorial analysis of a compound measure of social support. *Journal of Clinical Psychology, 44* (6), 876-890.

- Ren, X.S., Skinner, K.M., Lee, A., & Kazis, L. (1999). Social support, social selection and self-assessed health status: results from the Veterans Health Study in the United States, *Social Science and Medicine*, 48 (12), 1721-1734.
- Roberts, W.R., Penk, W.E., Gearing, M.L., Robinowitz, R., Dolan, M.P., & Patterson, E.T. (1982). Interpersonal problems of Vietnam combat veterans with symptoms of posttraumatic stress disorder, *Journal of Abnormal Psychology*, 91 (6), 444-450.
- Rock, D.L., Green, K.E., Wise, B.K., & Rock, R.D. (1984). Social support and social network scales: a psychometric review, *Research in Nursing and Health*, 7, 325-332.
- Sarason, I.G., Levine, H.M., Basham, R.B., & Sarason, B.R. (1983). Assessing social support: the social support questionnaire, *Journal of Personality and Social Psychology*, 44 (1), 127-139.
- Sarason, I.G., & Sarason, B.R. (1982). Concomitants of social support: Attitudes, personality characteristics, and life experiences. *Journal of Personality*, 50 (3), 331-344.
- Sarason, I.G., Sarason, B.R., Potter, E.H., & Antoni, M.H. (1985). Life events, social support, and illness. *Psychosomatic Medicine*, 47 (2), 156-163.
- Sarason, I.G., Sarason, B.R., Shearin, E.N., & Pierce, G.R. (1987). A brief measure of social support: practical and theoretical implications, *Journal of Social and Personal Relationships*, 4, 497-510.
- Shakespeare, W. (1597, version 1974). Act II, Scene III. In A.R. Humphreys (Ed.) *The first part of King Henry IV*. New York: Harper & Row.

- Shalev, A.Y., Peri, T., Canetti, L., & Schreiber, S. (1996). Predictors of PTSD in injured trauma survivors: a prospective study, *American Journal of Psychiatry*, 153, 2, 219-225.
- Shehan, C.L. (1987). Spouse support and Vietnam veterans' adjustment to Post-traumatic stress Disorder, *Family Relations*, 36, 55-60.
- Solkoff, N., Gray, P., & Keill, S. (1986). Which Vietnam veterans develop posttraumatic stress disorders? *Journal of Clinical Psychology*, 42 (5), 687-698.
- Steinberg, M., & Gottlieb, B.H. (1994). Appraisals of spousal support among women facing conflicts between work and family. In B.R. Burleson, T.L. Albrecht, & I.G. Sarason (Eds.), *The communication of social support*. Newbury Park, CA: Sage.
- Stretch, R.H. (1985). Posttraumatic stress disorder among U.S. Army Reserve Vietnam and Vietnam-Era veterans, *Journal of Consulting and Clinical Psychology*, 53 (6), 935-936.
- Stretch, R.H. (1986). PTSD among Vietnam and Vietnam-era veterans, in C.R. Figley (Ed.), *Trauma and It's Wake: Traumatic Stress Theory, Research and Intervention – Volume 2* (pp. 156-192). Brunner-Mazel: New York.
- Taylor, S.E., Peplau, L.A., & Sears, D.O. (1994). Social Support. In *Social Psychology* (8th Edition), Englewood Cliffs, NJ: Prentice Hall, 482-484.
- Tilden, V.P., Nelson, C.A., & May, B.A. (1990). Use of qualitative methods to enhance content validity, *Nursing Research*, 39(3), 172-175.

- Thoits, P. A. (1982). Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress, *Journal of Health and Social Behavior*, 23, 145-159.
- Thoits, P.A. (1986). Social support as coping assistance. *Journal of Consulting and Clinical Psychology*, 54 (4), 416-423.
- True, W.R., & Pitman, R.K. (1999). Genetics and posttraumatic stress disorder. In P.A. Saigh, J.D. Bremner, (Eds.). *Posttraumatic stress disorder: a comprehensive text* (pp. 144-159). Boston: Allyn and Bacon.
- Turner, R.J. (1981). Social support as a contingency in psychological well-being. *Journal of Health and Social Behavior*, 22, 357-367.
- Turner, R.J., Frankel, B.G., & Levin, D.M. (1983). Social support: conceptualization, measurement, and implications for mental health, *Research in community and Mental Health*, 3, 67-111.
- Uchino, B.N., Cacioppo, J.T., & Kiecolt-Glaser, J.K. (1996). The relationship between social support and physiological processes. *Psychological Bulletin*, 119, 488-531.
- Vedhara, K., Addy, L., & Wharton, L. (2000). The role of social support as a moderator of the acute stress response: in situ versus empirically-derived associations, *Psychology and Health*, 15(3), 297-307
- Vilhjalmsson, R. (1993). Life stress, social support and clinical depression: a reanalysis of the literature. *Social Science Medicine*, 37 (3), 331-342.
- Wilcox, B.L. (1981). Social support, life stress, and psychological adjustment: A test of the buffering hypothesis. *American Journal of Community Psychology*, 9, 371-386.

- Wills, T.A., & Shinar, O. (2000). Measuring perceived and received social support. In Cohen, S., Underwood, L.G., and Gottlieb, B.H. (Eds.), *Social Support Measurement and Intervention* (pp. 86-130). New York: Oxford Press.
- Weinert, C., & Tilden, V.P. (1990). Measures of social support: Assessment of validity. *Nursing Research*, 39 (4), 212-216.
- Weinert, C. (1987). A social support measure: PRQ85, *Nursing Research*, 36 (5), 273-277.
- Winemiller, D.R., Mitchell, M.E., Sutliff, J., & Cline, D.J. (1993). Measurement strategies in social support: A descriptive review of the literature. *Journal of Clinical Psychology*, 49(5), 638-648.
- Yerkes, S.A., & Holloway, H.C. (1996). War and homecomings: the stressors of war and of returning from war. In R.J. Ursano & A.E Norwood (Eds.), *Emotional aftermath of the Persian Gulf War: veterans, families, communities, and nations* (pp. 25-42). Washington: American Psychiatric Press.