

THE ROLE OF SOCIAL SUPPORT IN PTSD AND DEPRESSION SYMPTOM SEVERITY

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DEDICATION

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THE ROLE OF SOCIAL SUPPORT IN PTSD AND DEPRESSION SYMPTOM SEVERITY

by

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Abstract

BACKGROUND: Many individuals diagnosed with posttraumatic stress disorder (PTSD) have been shown to experience symptoms of avoidance. These symptoms decrease access to social support, which has been shown to be a resilience factor associated with developing PTSD after trauma. MST-related PTSD represents a relative gap in the research. The aim of the current study was to determine if the presence of social support was associated with less MST-related PTSD and depressive symptom severity.

SUBJECTS: A sample of 128 participants from a larger study that was examining the effectiveness of Cognitive Processing Therapy (CPT) in survivors of MST.

METHOD: The scores of the CAPS, BDI-II, and three questions from the VPAT, a questionnaire specifically developed for the larger study at baseline were compared to see if an association existed between PTSD and depression symptom severity and social support.

RESULTS: A series of simple linear regressions were run with the total score of the CAPS, individual criteria of the CAPS against the total social support score and each individual question pertaining to social support. Additionally, the total BDI-II score was run against the total social support score as well as each individual question on the VPAT pertaining to social support.

DISCUSSION: Based on these results, it appears that the presence of social support is not associated with less PTSD symptom severity. Moreover, the presence of social support was not related to less depressive symptom severity.

Keywords: social support, PTSD, MST, depression

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LIST OF ABBREVIATIONS

PTSD – Posttraumatic Stress Disorder

MST – Military Sexual Trauma

CAPS – Clinical Administered PTSD Scale

BDI – Beck Depression Inventory

CHAPTER ONE

Introduction

Military Sexual Trauma (MST) was defined by Public Law 102.585 as the experience of sexual assault or repeated, threatening acts of sexual harassment. This definition also includes unwanted sexual touching or grabbing, threatening/offensive remarks about one's body or sexual activities, and threatening and unwelcome sexual advances (Suris & Smith, 2011).

Posttraumatic stress disorder (PTSD) can result after a severe traumatic event such as MST. PTSD is characterized by symptoms of avoidance, emotional numbing, hyperarousal, and intrusive thoughts or memories of the traumatic event (American Psychiatric Association, 2000). Avoidance and emotional numbing have been shown to make it difficult for veterans with PTSD to access social support. (Campbell & Renshaw, 2013). These symptoms can lead to a decrease in the quality and quantity of social support available to the veteran (King et al., 2006).

The presence of social support has been examined as a risk or resilience factor associated with the development of PTSD after a severe trauma. Moreover, the absence of social support has been linked to the developing of social support following trauma. MST-related PTSD has yet to be examined with PTSD.

The current study seeks to examine the relationship between MST-related PTSD and social support. It will also examine the relationship between depressive symptom severity and social support.

CHAPTER TWO

Review of the Literature

Military Sexual Trauma

Military sexual trauma (MST) is a term established by Public Law 102.585 (1992) that refers to the experience of sexual assault or repeated, threatening acts of sexual harassment. Public Law 102.585 states the definition of MST includes unwanted sexual touching or grabbing, threatening/offensive remarks about one's body or sexual activities, and threatening and unwelcome sexual advances. This definition of MST is currently incorporated and utilized in screening for MST by the Department of Veteran Affairs (Suris & Smith, 2011).

Prevalence

In 2002, the Veterans Health Administration began nationally screening for MST in both men and women in VA facilities (Suris & Smith, 2011). According to the Military Sexual Trauma Screening Report for 2013, 4.9 million veterans were screened for MST in Veteran Affairs Medical Centers (VAMCs) nationwide. Of those screened, 2.8% ($n = 135,537$) endorsed MST. Women endorsed MST at a rate of 24.3% ($n = 77,681$) while males reported MST at a rate of 1.3% ($n = 52,856$). Within community-based outpatient clinics, 2.6 million veterans were screened for MST. Findings indicated that approximately 2.3% ($n = 59,518$) of veterans endorsed a history of MST, with 22.5% ($n = 31,393$) of women and 1.1% ($n = 27,825$) of men reporting at least one MST. It is important to note that men and women who do not utilize healthcare through VAMCs were not screened for MST and hence are not represented within the samples (Suris & Anderson, 2011).

Despite the notable statistical differences between male and female incidence rates of MST, the raw numbers indicate that the numbers of male and female victims of MST are about equal among veteran populations. This discrepancy is likely due to the number of men enlisted in the military being much larger than that of the number of women enlisted (Suris, Link-Malcolm, Chard, Ahn, & North, 2013). As such, it is a fallacy to assume that MST is a traumatic experience that primarily occurs within one gender (Morris, Smith, Farooqui, & Suris, 2013).

MST prevalence rates continue to vary due to differing definitions across studies. For example, some studies include non-consensual sexual intercourse in the definition of MST while others do not. Additionally, research methodology is variable, resulting in statistical disparity, due to the method of data collection and the purpose of the study (Suris & Lind, 2008).

Several barriers to reporting MST also present challenges in reflecting accurate prevalence rates of MST. Despite the aforementioned challenges, Suris & Lind (2008) found in their review that most studies report a prevalence of MST between 20%-43%.

Barriers to Reporting MST

The prevalence and incidence rates at which sexual victimization occurs may not be entirely accurate due to a number of barriers that survivors face when deciding to report victimization (Wieland, Haley, & Boudier, 2009). Wieland et al. (2009) posit that many survivors may feel conflicted about reporting due to fear, embarrassment, and possible exclusion from the unit. Survivors may be fearful that their unit will view them as a whistle-blower. There is also potential that the survivor may be relocated to a different unit, losing the current social support they have in their unit.

Turchik et al., (2013) identified several barriers to reporting MST. Some barriers revolved around feelings of self-blame, embarrassment, and shame. Other barriers to reporting MST involve the notion that individuals will not be believed and also that their issue is not important enough to discuss.

Masculine stereotypes create a substantial barrier for men in reporting MST (Kakhnovets & Holohan, 2007). While both men and women can feel horrified, shocked, and disgusted after a sexual assault, men may feel greater shame and humiliation linked to the belief that only women can be raped (Kakhnovets & Holohan, 2007). Most men do not consider the possibility that they can be raped as the traditional view of males is one of power and domination (Davies, 2002). Because of this, isolation and not reporting is common, and men tend to feel disconnected from social support (Kakhnovets & Holohan, 2007). Men also experience self-blame related to the assault because they did not overpower the assailant to prevent the attack (Kakhnovets & Holohan, 2007).

Reporting MST can put survivors in a difficult situation because the survivor cannot remain anonymous if the survivor chooses to report the perpetrator. The military has a two-tiered reporting system for MST: restricted and unrestricted. In the restricted tier, survivors can receive counseling services, remain anonymous, but cannot report their attacker. The unrestricted method involves the possibility of prosecuting the attacker, but the individual cannot remain anonymous (Wieland et al., 2009).

Physical Health Consequences of MST

MST is associated with a number of physical health consequences. In their review, Suris and Lind (2008) noted that MST was associated with a number of chronic medical conditions

including genitourinary, pulmonary and liver disease, and cardiovascular disease (Suris & Lind, 2008). Additionally, MST was correlated with cardiovascular risk factors such as smoking and sedentary lifestyle (Suris & Lind, 2008). Furthermore, Kimerling, Gima, Smith, Street, and Frayne (2007) found MST to be linked with obesity, weight loss, and hypothyroidism in women (Kimerling, Gima, Smith, Street, & Frayne, 2007).

Kimerling et al. (2007) also found a significant association between MST and liver disease as well as chronic pulmonary disease for both genders. A number of sexually transmitted infections (STI) have been linked to sexual assault including *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, syphilis, and human immunodeficiency virus (HIV) (Reynolds, Peipert, & Collins, 2000).

Mental Health Associations with MST

MST is associated with a variety of mental health conditions. Survivors of MST are 2-3 times more likely to have a mental health diagnosis than those who have not experienced MST (Kimerling et al., 2007). When compared with civilian populations, women veterans who experienced MST had higher prevalence rates of depression, alcohol abuse, high anxiety, and posttraumatic stress disorder (PTSD) (Suris et al., 2004; Booth et al., 2012). Women veterans who experienced sexual assault in the military were 9 times more likely than those who did not to develop PTSD (Suris et al., 2004). PTSD is the most common mental health condition among MST survivors (Kimerling et al., 2007).

Suicide and MST. The presence of a mental health condition within individuals often results in a significantly higher risk of suicidal behavior/ideation (Belik, Stein, Asmundson, & Sareen, 2009). In veteran populations, researchers found that veterans are more than twice as

likely to die from suicide than the general population (Belik et al., 2009). Moreover, MST has been found to be significantly associated with suicidal ideation, a common precursor of future suicide attempts of MST (Belik et al., 2009). Belik et al. (2009) found among Canadian military personnel that suicidal ideation was more highly associated with the experience of interpersonal trauma than with any other trauma. This finding held true for both men and women (Belik et al., 2009).

Suris, Link-Malcolm, & North (2011) found that suicidal ideation is predicted by depressive and PTSD symptom severities. Moreover, veterans who met the diagnostic criteria for PTSD were 4 times more likely to endorse suicidal ideation than veterans who did not meet criteria for PTSD (Jakupcak, Cook, & Mcfall, 2009). Among those veterans that screened positive for two or more comorbid disorders, suicidal ideation was 5.7 times higher (Jakupcak et al., 2009). These studies demonstrated that individuals who meet criteria for PTSD are at a much greater risk for completed suicide than those that do not meet criteria.

Gender differences in MST

Research pertaining to MST in men is limited, as most of the extant literature focuses on MST in women. Existing research shows that men and women largely experience similar mental and physical health consequences; however, some differences are present (Kimerling et al., 2007). Cameron et al. (2011) proposes that male survivors of MST often experience sexual identity confusion, and a more chronic course of sexual symptoms in comparison to women, and feelings of loss of masculinity following MST (Booth et al., 2012). Maguen et al. (2012) found that female veterans who are survivors of MST with a diagnosis of PTSD are more likely to

experience comorbid depression, anxiety disorders and eating disorders than female veterans who have not experienced MST.

Kimerling et al. (2007) noted a relationship between MST and bipolar disorder, schizophrenia, and other psychotic disorders in men. Men are also more likely to meet criteria for one mental health condition, whereas women are more likely to have three or more (Maguen et al., 2012). Dissociative, eating, and depressive disorders are cited in literature as being more common among women than men with MST; however, Kimerling et al. (2007) found these associations to be similarly strong among both genders. In one study, dissociative and personality disorders were shown to have one of the strongest relationships to MST in men (Kimerling et al., 2007).

Medical conditions that were significantly associated with MST in both genders include liver disease and chronic pulmonary disease (Kimerling et al., 2007). Obesity, weight loss, and hypothyroidism were significantly associated with MST in females but acquired immune deficiency syndrome (AIDS) was more common in males (Kimerling et al., 2007).

Posttraumatic Stress Disorder (PTSD)

Although a large percentage of individuals experience a traumatic experience in their lifetime, only a portion develops PTSD. PTSD is comprised of three clusters of symptoms as outlined by the DSM-IV-TR (American Psychiatric Association, 2000). The individual must be exposed to trauma that involves life threat, threat of serious injury, or threat to personal integrity. The individual exposed to the traumatic event must experience intrusive recollections about the experience (i.e. dreams, flashbacks). Emotional avoidance/numbing may also occur in addition to hyperarousal (i.e., exaggerated startle response, difficulty concentrating, struggles

falling or staying asleep) that were not present prior to the trauma (American Psychiatric Association, 2000).

In May 2013, the DSM-5 was released, altering certain aspects of the PTSD diagnosis laid out by DSM-IV-TR. The DSM-5 is more precise in defining a traumatic experience as: actual/threatened death, serious injury, or sexual violence (Friedman, 2013). According to DSM-5, the exposure to trauma must be (1) directly experienced, (2) witnessed in person, (3) learned of direct exposure (violent or accidental) of family member or close friend or (4) exposed to aversive details of trauma repeatedly (Friedman, 2013). DSM-5 outlines four diagnostic clusters, as opposed to three in DSM-IV-TR, which include re-experiencing, avoidance, negative cognitions and mood, and arousal (Friedman, 2013). Arguably, one of the most important changes in DSM-5 is how trauma is defined. For example, previously, sexual violence was not explicitly included in the definition of trauma but DSM-5 recognizes it as such (American Psychiatric Association, 2013).

Interpersonal Trauma

MST is a form of interpersonal trauma, which can be defined as “violence between family members and intimates, and violence between acquaintances and strangers that is not intended to further the aims of any formally defined group or cause” (WHO, 2006, pg. 2). This definition includes family and partner violence, child abuse, intimate partner violence, and elder abuse. Sexual assault or rape by a stranger or acquaintance can also be included in this definition (WHO, 2006).

Numerous studies have found that more individuals develop PTSD when the trauma is a result of human intent than when it is not (Charuvastra & Cloitre, 2008). Frans, Rimmö, Aberg,

& Fredrikson, (2005) found that PTSD is more likely to follow sexual and physical assault than other types of trauma. One study found that sixty percent of MST survivors develop PTSD (Yaeger, Himmelfarb, Cammack, & Mintz, 2006).

In addition to developing PTSD and other mental health conditions, one's sense of self, and how a survivor views the world can be altered after interpersonal trauma. For example, phenomenologically, interpersonal violence can disrupt a person's "sense of identity, basic trust in others", and the notion that the world is a safe place (Hegadoren et al., 2006, pg. 167). Other symptoms often experienced by survivors of interpersonal trauma include hyper-arousal when experiencing flashbacks (Hegadoren et al., 2006).

Gender Differences in trauma and PTSD

The relationship between gender and PTSD demonstrates that women develop PTSD at a higher rate than men. Previous research has established two reasons for this difference: women are more likely to experience interpersonal trauma (Hapke, Schumann, Rumpf, John, & Meyer, 2006; Olff, Langeland, Draijer, & Gersons, 2007), and women are also more likely to develop symptoms than men (Surís et al., 2004).

Women veterans who reported experiencing sexual trauma were found to engage in negative health behaviors including problematic use of substances (smoking and drinking) and coercive sex partnerships (Lang et al., 2003; Surís, Holliday, Weilauf, North, & Collaborative, 2013). Moreover, experiencing childhood trauma is a stronger-predictor of PTSD severity in women than in men (Olff et al., 2007).

Depression

Veterans with MST have been demonstrated to have risk for adverse mental health consequences, including depression. Depressive illness can express itself in somatic, cognitive, and affective areas of life and lead to significant impairment in vocational as well as interpersonal functioning.

Major depressive disorder is characterized by depressed mood and/or loss of interest or pleasure and a total of at least 5 of 9 possible symptoms (American Psychiatric Association, 2000; American Psychiatric Association, 2013). Other symptoms include significant weight loss or weight gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue/loss of energy every day, feelings of worthlessness, and feelings of guilt. Cognitive difficulties, such as, diminished ability to think, or concentrate, or indecisiveness, as well as recurrent thoughts of death or suicidal ideation, can occur in individuals experiencing depression (American Psychiatric Association, 2000; American Psychiatric Association, 2013).

Prevalence

Survivors of MST report higher percentages of depression than individuals who have not experienced trauma. Surís et al. (2004) estimates that 56.2% of veterans who experienced sexual assault in the military have a depressive disorder.

Gender differences in MST-related Depression

More women with than without a history of MST have been shown to have depression (Chang, Skinner, & Boehmer, 2001; Kelly, Skelton, Patel, & Bradley, 2011). More specifically, women who screened positive for MST were 3 times more likely than women without a history of MST to meet criteria for depression (Hankin et al., 1999).

Research pertaining to the psychiatric consequences of MST in male veterans is scarce (Morris et al., 2013). What has been established is that similar proportions of female and male survivors of MST develop depression (Haskell et al., 2010; Kimerling et al., 2007). Of males who screened positive for MST, depressive disorders is the second most common mental health condition (46.6%), next to PTSD (52.5%) (Kimerling et al., 2010).

Risk Factors

Risk factors associated with developing PTSD

Although PTSD can follow any DSM-IV trauma, certain factors are associated with developing PTSD. Preexisting psychiatric disorders have been found to be a risk factors for PTSD after trauma exposure (Hapke et al., 2006). Anxiety, somatoform, and depressive disorders in particular were found to be associated with risk for developing PTSD (Hapke et al., 2006). A review by Brewin et al., (2000) found that previous psychiatric diagnoses and family psychiatric diagnoses was associated with PTSD.

As summarized by Suris et al. (2004), previous sexual assault in women has also been shown to place an individual at a higher risk for PTSD than those not previously exposed to sexual assault. Other risk factors include young age, unemployment, previous trauma, reported childhood abuse, and general childhood adversity (Surís et al., 2004; Brewin et al., 2000).

Risk factors for MST

A number of risk factors are correlated with being sexually victimized in the military. Kimerling et al. (2007) found that in women, young age, being White, never married, and having a service-connected disability were all associated with positive screens for MST. In men,

positive screens were also associated with younger age, being White, and being single, never married, or divorced (Kimerling et al., 2007).

Depression, previous trauma, and exposure to a violence-prone environment have also been found to be risk factors for MST (Boothe et al., 2012; Campbell et al., 2008). Suris and Lind (2008) found in their review that entering the military at a younger age, negative home life, previous assault, and enlisted rank were risk factors for MST.

Military Culture and the Role it Plays in MST

The military culture can be characterized as hyper-masculine and hypersexual and exaggerating traditional sex roles, which sets it apart from civilian culture. These characteristics are overstated further during deployment because of the emphasis on denial of pain and emotion in the face of horrifying experiences (Cameron et al., 2011).

The military environment can complicate the after-effects of MST because of its tight-knit, closed atmosphere (Suris et al., 2013). Contact with one's assailant is almost inevitable in the military environment after the occurrence of MST, particularly if the survivor and assailant are a part of the same unit. Moreover, if the perpetrator out-ranks the survivor, it could negatively affect the survivor's military career. Additionally, unit support or cohesion may be unavailable to the survivor who reports an MST incident because of the unified environment of the military that could result in alienation of, or even retaliation against, the victim (Suris, Link-Malcolm, Chard, Ahn, & North, 2013).

Social Support

Social support has been studied from myriad perspectives, and it remains an evolving concept. Lin et al. (1979) define social support as “support accessible to an individual through social ties to other individuals, groups, and the larger community” (Lin et al., 1979, pg. 109). Social support can be tangible, such as monetary support or intangible such as emotional support (Langford et al., 1997).

Several theories address the relationship of social support to stress. A review by Cohen & Wills (1985) discusses the “buffering” hypothesis of social support, in which social support contributes to the well-being of individuals in times of stress; an alternative theory posits that social support is beneficial regardless of whether the person is under stress (Cohen & Wills, 1985). It has also been suggested that social support, “acts as a preceding factor reducing the likelihood of the onset of illness, in providing normative pressure against the likelihood of certain events occurring” (Lin et al., 1979, pg. 109).

Emotional support is another aspect of social support, which Langford et al. (1997) established in their review to be defined as a type of support that is rendered through communication in which the individual feels loved or cared for, esteemed/valued, and part of a network of mutual obligation.

MST and Social Support

Previous research on MST has primarily focused on medical and psychiatric consequences, and examined forms of therapy used in the treatment of MST-related PTSD (Suris et al., 2013), and pharmacological treatments for MST-related PTSD (Kimerling et al., 2011). However, to date, research about the relationship between MST and social support is non-

existent. All that is known is that there are substantial barriers to reporting MST, which can lead the survivor to handle the negative effects of sexual trauma alone (Wieland et al., 2009).

Much of the research on social support and sexual assault focuses on social reactions to trauma. Ullman & Peter-hagene (2014) found that positive social reactions to disclosure of assault were related to more perceived control over recovery for the survivor as well as more adaptive coping both socially and individually. This control over recovery was linked to less PTSD symptom severity but, in contrast, negative social reactions to disclosure were linked to less perceived control and hence, greater PTSD symptom severity (Ullman & Peter-hagene, 2014). Therefore, although no peer-reviewed literature exists to suggest a relationship between MST and social support, the extant sexual assault literature denotes a clear relationship between a supportive social reaction to disclosure of MST and more favorable psychological outcomes.

PTSD and Social Support

Previous researchers have found a negative correlation between social support and psychological distress after a traumatic event (D. W. King, Taft, King, Hammond, & Stone, 2006; Lin et al., 1979; Schumm, Briggs-Phillips, & Hobfoll, 2006). Much of the literature regarding social support and PTSD addresses lack of social support as a risk factor for developing PTSD (Brewin, Andrews, & Valentine, 2000; Nelson et al., 2011a). Brewin et al. (2000) found that a lack of social support after trauma is considered a risk factor for the development of PTSD. Additionally, lower perceived social support is significantly associated with PTSD (Nelson et al., 2011).

Social support has been hypothesized to be a psychosocial buffer by reducing negative physical and psychological responses to traumatic events (Lin et al., 1979; Schumm et al., 2006).

For example, Pietrzak (2009) found a negative association between social support and PTSD and depressive symptomatology. Britt, Adler, Bliese, & Moore (2013) found that higher unit morale was linked to less negative consequences from combat stressors, such as lower levels of PTSD symptom severity.

It has been found that emotional numbing commonly affects interpersonal relationships, particularly romantic relationships, for veterans with PTSD (Campbell & Renshaw, 2013; Taft, Schumm, Panuzio, & Proctor, 2008). These interpersonal challenges often lead to a decrease in quality and quantity of social support (King et al., 2006). This is referred to as the erosion theory of social support (King et al., 2006).

The presence of social support has been found to be associated with a decreased development of PTSD after trauma. Charuvastra & Cloitre (2008) found in their review that some studies suggest that social support works as a protective factor in developing PTSD, and other studies suggest that the absence of social support creates an increased risk for developing PTSD.

Social Support in the Military

One of the defining features of the military is that it is a tight-knit community (Suris et al., 2013). Support within the military community has been shown to facilitate improved mental health. In contrast, the tight-knit military community can also be a detriment to recovery (Suris et al., 2013).

Friend and Family Support

Another form of support that has yet to be examined in detail is that of friends and family. While unit cohesion has been shown to play an important role in adjustment to trauma,

contact with family and friends outside of the military could have an effect of psychological symptoms related to trauma. Taft, Schumm, Panuzio, & Proctor (2008) found that emotional numbing with PTSD can lead to family functioning issues. Campbell & Renshaw (2013) found that emotional numbing has a significant impact on relationship satisfaction for individuals with PTSD and their partners. Skinner (2001) found that individuals who had been sexually assaulted in the military felt distanced from friends and family, which made it difficult for them to find comfort and support.

Social support has yet to be examined as a factor associated with MST-related PTSD. The extant literature has established the positive benefit of social support on symptom severity of PTSD. Despite this, the literature is lacking empirical support to suggest the beneficial nature of social support in individuals with MST-related PTSD. As such, the current study seeks to examine the relationship between friend and family support to PTSD symptom severity in veterans with MST-related PTSD.

CHAPTER THREE

Method

Participants

Participants were 128 female and male veterans involved in an evidence-based therapy study at the Dallas VA Medical Center. The study sought to examine the effectiveness of Cognitive Processing Therapy (CPT) in survivors of MST. Participants were identified and recruited through referrals from clinicians and through IRB-approved advertising methods, female veteran groups, and research staff members networking with other mental health professionals. A telephone screening was conducted in order to determine if the individuals met inclusion criteria required for participation in the study. Inclusion criteria comprised of the following requirements: current diagnosis of PTSD related to-MST, an incident of MST experience three months or more before study entry, identification of MST as the trauma that caused the worst current distress, having at least one clear memory of the trauma (i.e., so that the participant could write an impact description statement for therapy), consent to be randomized into treatment, not be receiving any other psychotherapy for PTSD during the 6-weeks of active treatment (brief check-ins with an existing therapist, and attendance in self-help groups permitted), and being on stable medication regimen for a minimum of 6 weeks prior to entering study. Possible participants were excluded because: they had previously received Cognitive Processing Therapy (CPT or Present Centered Therapy (PCT), current substance dependence, previous substance dependence not in remission for at least three months, any current psychotic symptoms, current suicidal ideation (with suicidal plan or intent in addition to ideation) or

homicidal ideation, any severe cognitive impairment or history of organic mental disorder, or current involvement in a violent relationship.

Procedures

After eligibility was determined during the initial phone screening, an appointment was scheduled for participants to discuss the study in more detail in person and complete the informed consent. Data for the proposed study were obtained from the aforementioned face-to-face interviews and self-report questionnaires administered at the study baseline. Participants eligible for participation were reimbursed in the amount of \$50.00 and those not eligible received \$20.00.

Measures

Demographic Questionnaire. Participant self-report demographic information was recorded onto the Subject Interview Questionnaire Sheet as part of the baseline assessment procedure. This information included education, ethnicity, marital status, urban residence, current age, gender, usual occupation, employment status, income, service connection, PTSD service connection status, and dates and branch of military service.

Clinician Administered PTSD Scale (CAPS). The Clinician Administered PTSD Scale for DSM-IV (CAPS) was completed at baseline to establish PTSD symptom level in relation to an MST event. The CAPS is a structured clinical interview, developed by Blake et al. (1995), is a 20-item interview that corresponds to DSM-IV criteria for PTSD on behaviorally anchored 5-point rating scale from 0 (“never”) to 4 (“daily or almost daily”) and intensity from 0 (“none”) to 4 (“extreme”). Further, the duration of PTSD symptomatology must be more than one month and it must cause clinically significant distress or impairment in social, occupational, or other

important areas of life to qualify. The CAPS test-retest reliability is reported to range from .90 to .98 with internal consistency for the 17 symptoms at .94 (Blake et al., 1995).

Beck Depression Inventory (BDI-II). The Beck Depression Inventory II (BDI-II) was completed at baseline to assess depressive symptoms. The BDI is a 21-item scale that is widely used in research and clinical settings to detect depression, developed by Beck, Steer and Brown (1996). Each of the 21 items is comprised of four statements, listed in increasing severity, which corresponds to DSM-IV criteria for depression. The BDI has been reported to have test-retest reliability of .90 and an average reliability coefficient of .86 (Beck, Steer, Ball, & Ranieri, 1996).

VPAT. The VPAT is an assessment tool developed specifically for the larger study. This questionnaire assesses reliance on social support as related to sexual trauma history. It also includes questions regarding family psychiatric history as well as the participant's psychiatric history. It assesses trauma history including childhood, civilian, or military sexual assault. The VPAT asks about degree of injury, medical or psychological services utilized after trauma, problems/demotions/transfers in work after assault. It also assesses symptoms of emotional numbing, and problems with law or substance use after the incident. Additionally, it assesses demographic data such as rank, gender, supervisor status of the perpetrator, and disciplinary actions of the perpetrator as a result of the incident.

Objective and Hypotheses

The experience of military sexual trauma is associated with a variety of mental and physical health consequences, including PTSD and depression. Moreover, previous research has established that some individuals who suffer from PTSD and depression lack social support (King et al., 1998; Nelson et al., 2011) Social support has been shown to have mediating effects

on depressive and posttraumatic symptoms (Schumm et al., 2006). It has yet to be shown that social support has a positive impact on MST-related depression and PTSD.

The proposed research is a part of a larger study conducted at the Dallas VAMC that sought to determine the effectiveness of cognitive processing therapy for veterans with MST-related PTSD. The primary objective of the proposed study is to examine the influence of social support on PTSD and depressive symptoms.

Hypothesis I

In a sample of veterans with MST-related PTSD, it is hypothesized that more friend, family, and emotional support, as measured by relevant questions on the VPAT, will be associated with less PTSD symptomatology as measured by the CAPS.

Hypothesis II

It is hypothesized that more friend, family, and emotional support, as measured by relevant questions on the VPAT, will be associated with less depressive symptomatology as measured by the BDI-II.

Statistical Analyses

Tests will be performed to assess for skewedness, kurtosis, and normal Gaussian distribution. Should analyses indicate that data is non-normal, data transformation will be conducted (e.g., square root or log transformation). If data transformation proves unsuccessful, then non-parametric analyses will be conducted. If normality of data is achieved, linear regression will be used to assess the relationship between the sum of the VPAT social support scores (family support, friend support, emotional support) and the total score of the CAPS, CAPS B, C, & D scores, and BDI-II scores one at a time in five separate models. Two multiple regression models

will be tested for each of the three separate items of the VPAT (each entered as the dependent variable in separate models). For the first model, total CAPS score and BDI-II score will be entered simultaneously as covariates. For the second model, CAPS B, C, and D scores as well as BDI-II score will be entered simultaneously. Models will be assessed for acceptable variance inflation factors and if variance inflation is unacceptably high, the combination of variables responsible for the variance inflation will be separated into different models until acceptable levels of variance inflation are reached.

CHAPTER 4

Results

Demographics

Data from 128 participants was used for this study. The mean age for participants was 46 ($SD = 9.20$) with a mean of 14.25 years of education ($SD = 2.10$). Regarding ethnicity, 42.2% ($n = 54$) were Black, 39.1% ($n = 50$) of the participants were Caucasian, 4.7% ($n = 6$) were Hispanic, and 13.3% ($n = 17$) identified as “Other.” Demographic information can be found in Figure 1.

Main Analyses

Hypothesis I

It was hypothesized that more friend, family, and emotional support, as measured by relevant questions on the VPAT, would be associated with less PTSD symptomatology as measured by the CAPS.

A series of simple linear regressions were performed to determine if social support was associated with less PTSD symptomatology. The first regression was run with the total social support score, comprised of the responses to relevant VPAT questions, as the independent variable and the total CAPS score as the dependent variable. There was no significance found between CAPS score and total social support score ($df = 127$, $\beta = -.011$, $t = -.121$, $p = .904$). Second, third, and fourth regressions were run with each criterion of the CAPS as the dependent variable and the total social support score as the independent variable. There were no significant associations between total social support and any criterion of the CAPS: Criterion B: re-experiencing ($df = 127$, $\beta = -.050$, $t = -.566$, $p = .572$); Criterion C: avoidance ($df = 127$, $\beta =$

.023, $t = .262$, $p = .794$); or Criterion D: arousal ($df = 127$, $\beta = -.093$, $t = -1.046$, $p = .298$).

Additionally, three more regression analyses were run with the total CAPS score as the dependent variable and each separate social support question as the independent variable. No significant associations were found between total CAPS score and the individual measures of social support, which are friend ($df = 117$, $\beta = .036$, $t = .387$, $p = .699$); family ($df = 107$, $\beta = -.050$, $t = -.566$, $p = .572$); or emotional ($df = 127$, $\beta = .046$, $t = .511$, $p = .610$) support.

Hypothesis II

It was hypothesized that more friend, family, and emotional support, as measured by relevant questions on the VPAT, will be associated with less depressive symptomatology as measured by the BDI-II.

A regression analysis was run with the total BDI-II score as the dependent variable and the total social support score as the independent variable. The association between total BDI score and total social support score just fell short of significance ($df = 127$, $\beta = -.168$, $t = -1.665$, $p = .099$). Finally, three more regression analyses were run with the BDI-II total score as the dependent variable and each individual social support question as the independent variable. The association between total BDI score and two of the individual measures of social support: friend ($df = 127$, $\beta = -.056$, $t = -.581$, $p = .562$) or emotional ($df = 119$, $\beta = -.031$, $t = -.340$, $p = .735$) were not significant. However, the association between the BDI total score and family support was just shy of significance ($df = 107$, $\beta = -.184$, $t = 1.926$, $p = .057$).

CHAPTER FIVE

Discussion

The primary objective of the current study was to determine if the presence of social support was associated with lower MST-related PTSD and depression symptomatology. Results revealed no association between the presence of social support and PTSD symptom severity, regardless of the type of social support (friend, family, emotional). Moreover, no relationship was found between friend or emotional support and depression symptom severity. However, the association between family support and depression symptoms as well as total social support and depression were very close to significance.

The results of this study were not consistent with previous research that found the presence of social support was a factor in whether or not an individual developed PTSD following trauma. There are several possible reasons for these findings in the current study. All participants in the current study had a diagnosis of PTSD, as outlined by the inclusion criteria of the larger study. This is a notable difference between the current study and previous studies because many previous studies have investigated social support as a risk or resilience factor for developing PTSD. In the current study, it is possible that support does not help to ameliorate symptoms when a diagnosis of PTSD is present, but rather previous research indicates it may help to prevent the development of PTSD symptoms leading to a PTSD diagnosis.

Moreover, the current study highlights an assumed relationship between current PTSD and social support that may or may not have been present many years ago, in the period immediately after the trauma. Social support may be protective in developing PTSD—but it may not predict the presence of PTSD or depression symptoms many years later.

The current study was the first to examine a relationship between MST-related PTSD and social support. Previous research indicates that MST has unique characteristics when compared to other types of trauma. One possible reason for this distinction is that MST can occur when one is on active duty, where the individual lives and works (Anderson & Suris, 2013). Close proximity to one's perpetrator can contribute to isolation from social support (Suris & Lind, 2008). These aspects of MST could have accounted for the lack of significance between MST-related PTSD and social support.

A final issue is that social support is a perceived construct and there are limited ways to measure how much social support exists in one's life. In the current study, social support was measured retrospectively, which could have lead to inaccurate estimates of social support. Additionally, the measure of social support is subjective. It is possible that support does exist for some participants, but they do not perceive it to be there.

Limitations

The time between the trauma and current PTSD symptoms and perceived social support was, in some cases, many years, which could have influenced how participants responded to questions pertaining to social support. The participants' memory of social support from long ago could have caused their recall to be biased and possibly inaccurate. Moreover, this study was comparing the presence of social support long ago and current symptom severity. The mismatch of these two times points could have been a contributing factor to the lack of significance found by this study.

Furthermore, the measures used to assess social support were self-report, which lend themselves to potential validity problems. Self-report measures are solely based on subjective

information provided by the participant. Because the self-report measure is relying on the participant for information, the information cannot necessarily be assumed to be entirely accurate or consistent.

Several other aspects in the way social support was assessed could have potentially been improved by inclusion of a validated social support measure. The questions used to assess social support were a part of a structured clinical interview designed for the larger study. The questions were not exhaustive in measuring all aspects of social support but rather there were a total of three questions to measure friend, family, and emotional support. These individual questions may not have been measuring the construct of social support adequately.

Future Directions

Future research should look at how social support is associated with quality of life, rather than with symptom severity. Investigating the association between quality of life and social support could find that while symptom severity may not be associated with social support, individuals may report a better quality of life when social support is present as compared to individuals who report little to no social support. Also, demographic comparisons could highlight cultural implications of the utilization of social support. Furthermore, comparisons between gender and social support could help establish what types of support are most useful for each gender.

The use of a validated social support measure would ensure that the construct of social support is being measured. Some frequently used social support instruments include the Social Support Questionnaire, which is a 27-item questionnaire devised to measure perceptions and satisfaction with social support (Levine, Basham, & Basham, 1983). Another notable social

support measure is the Medical Outcomes Study (MOS) Social Support Survey, which is a brief, multidimensional self-report survey developed to assess social support in individuals with chronic medical conditions (Sherbourne et al., 1991). Future research could also collect data on perceived social support at two different time points uniformly closer to the trauma. Also, examining perceived social support after therapeutic intervention, such as CPT, could provide useful insight into how these interventions are associated with perceived social support.

Future research examining social support might include the perspective of a family member or close friend in addition to the veteran, adding collateral information. This could be accomplished by collecting data through focus groups of veterans and their families.

Conclusion

In summation, this study found little to no association between social support at the time of the trauma and MST-related PTSD symptom severity in veterans with PTSD. However, this study did suggest that depression symptom severity and the presence of social support could be related. More robust social support measures would likely determine with greater certainty if depression symptom severity and social support.

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Table 1

Simple Regression Model of PTSD Symptom Severity as it is Predicted by Social Support

Variable	B	SE(B)	β	t	R^2	p
PTSD	-.052	.428	-.011	-.121	.000	.904

* $p < .05$ Note. $df = 127$

Table 2

Simple Regression Model of Depression Symptom Severity as it is Predicted by Social Support

Variable	B	SE(B)	β	t	R^2	p
Depression	-.050	.030	-.168	-1.67	.000	.099

** $p < .05$* Note. $df = 119$

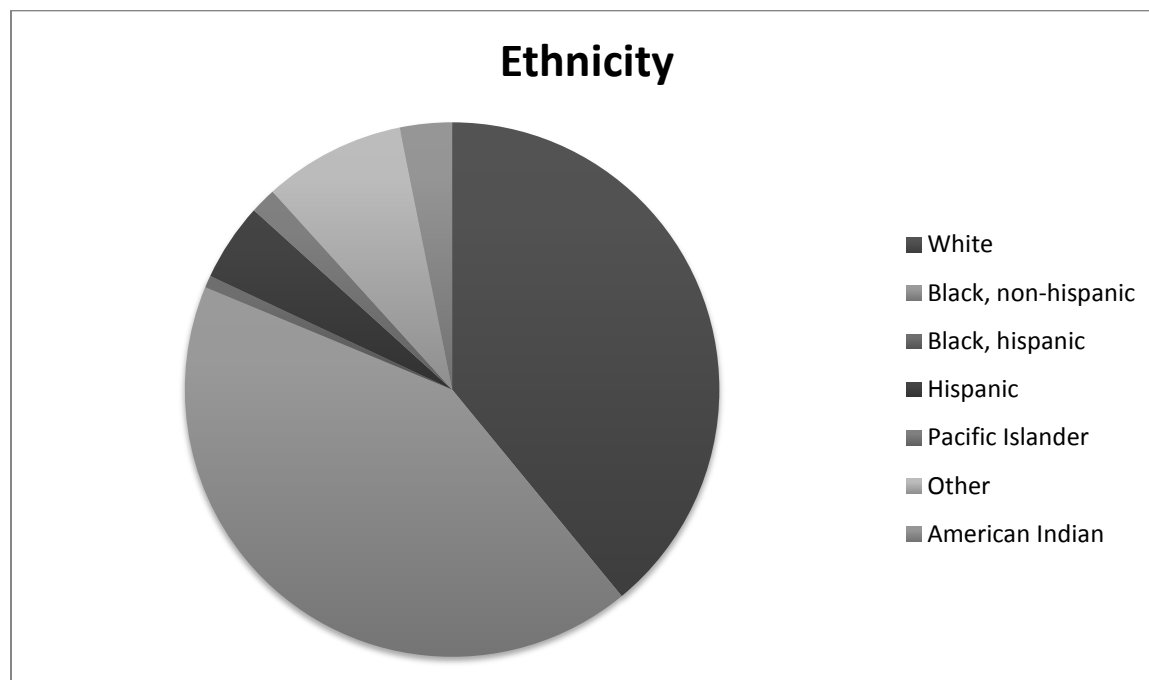


Figure 1. Representation of ethnicity.

BIOGRAPHICAL SKETCH

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EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Texas Christian University The University of Texas Southwestern School of Allied Health Professions	B.S. MRC	2011 2014	Psychology Rehabilitation Counseling

Positions and Employment

July 2014-present Clinical Research Coordinator, Dallas VA Medical Center

Clinical Experience

December 2013-August 2014 Psychology Service at Parkland, Psychiatric Inpatient Unit
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 Neuropsychological Evaluations

Presentations and Publications

March 2014 Poster Presentation: Anxiety and Depression Conference
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 PTSD Symptom Severity in Veterans with Comorbid Borderline
 Personality Disorder and MST-Related PTSD

Professional Memberships

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