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ASSESSING SECONDARY TRAUMATIC STRESS IN  
PARTNERS OF VETERANS WITH PTSD

A DOCTORAL PROJECT

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DOCTOR OF NURSING PRACTICE

By

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## ABSTRACT

Persons exposed to one or more traumatic events may exhibit disabling symptoms that have become known as posttraumatic stress disorder (PTSD). Individuals who spend a significant amount of time in contact with individuals with PTSD develop symptoms of PTSD without an initial trauma, known as STSD (Secondary traumatic Stress Disorder). Limited support has been given to spouses of veterans, who show an increased risk of symptoms of STSD. Evaluation and treatment has been hindered by a lack of consistent assessment tools targeting that population. For this project four existing screening tools were adapted into a single tool for use with spouses of veterans in outpatient and emergency settings. Focus groups composed of subject matter experts were used to refine the tool. The final tool consists of a two-tier conditional instrument with a total of 38 questions. This tool is planned to be validated with the target population of spouses of veterans at a later date.

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## BACKGROUND

Persons exposed to one or more traumatic events may exhibit disabling symptoms that have become known as posttraumatic stress disorder (PTSD) (Diagnostic and Statistical Manual [DSM V], 2013, p. 274). Besides the disabling symptoms, exposure to a traumatic event is a necessary criterion for diagnosis. Long term PTSD has been associated with a variety of physiological and psychological symptoms; these include higher incidences of pain catastrophizing, alterations in brain structure, increased risk for major depression and alcohol use disorder, lasting changes to the Hypothalamic-pituitary-adrenal axis and cortisol production, and increased risk of medical problems (Galovski & Lyons, 2004; Tsur et al., 2018; Yehuda & Bierer, 2008).

Secondary posttraumatic stress disorder, also known as secondary traumatic stress disorder (STSD), is less known, less studied, and less understood than PTSD. In fact, the fifth edition of the Diagnostic and Statistical Manual (DSM-V) makes special note that for PTSD, patient exposure to traumatic events need not be direct, but can be through discovering traumatic events that occurred to someone close or experiencing exposure to aversive details of the events of primary trauma (American Psychological Association, 2013, p. 275). Indirect exposure to trauma has been associated with numerous adverse psychological responses such as avoidance, changes in arousal, intrusive thoughts, and negative cognition, all of which can occur with direct exposure PTSD (Frančičković et al., 2007). Those who have prolonged contact with trauma victims, such as therapists and family members, have been found to experience negative psychological states, often referred to as secondary traumatic stress.

In the earliest work on secondary reactions, Figley (1995) reported that secondary traumatic stress reactions can occur when extreme empathy and love are experienced for a traumatized family member, and these lead to significant emotional trauma and "catastrophic stress" (Figley, 1983). This compassion stress or fatigue was potentially a type of secondary traumatic stress disorder (STSD) or secondary traumatic stress (STS). Later definitions of secondary traumatization included the traumatization of a family member or caregiver due to others' exposure to suffering (Koić et al., 2002).

Figley theorized that both therapists and family members of trauma survivors are likely to experience symptoms characteristic of PTSD, because of their knowledge and exposure to the trauma, although the mechanism of vicarious traumatization and secondary traumatic stress disorder is still unknown (Figley, 1995; Pearce, Garciasalas, & Krantz, 2016). Dirkzwager et al. (2005) found that partners of veterans with PTSD showed significantly more symptoms of PTSD themselves, while Ahmadi et al., (2011) found a correlation between PTSD and STS in spouses of veterans (Ahmadi, Azampoor-Afshar, Karami, & Mokhtari, 2011). Partners with PTSD symptoms also have been found to have negative outcomes such as lack of a support network (Dirkzwager, Bramsen, Adèr, & van der Ploeg, 2005), high unemployment (Frančičković et al., 2007), poor marital adjustment (Dekel, Solomon, & Bleich, 2005; Solomon et al., 1992) chronic pain, sleep problems, and other somatic complaints (Dirkzwager et al., 2005; Koić et al., 2002).

No national epidemiologic statistics exist discussing the prevalence of STSD, with research into the topic limited. However, evidence suggests a risk for spouses of veterans suffering from PTSD. Frančičković et al. (2007) and found that more than one



third of the sampled wives of Croatian veterans met the criteria for secondary traumatic stress, including at least two symptoms of vicariously re-experiencing traumatic events, three avoidance symptoms, and two symptoms of increased arousal.

Recent studies have also found increased STS symptoms in other groups exposed to those dealing with traumatic situations including 44.8% of psychiatric nurses (Mangoulia, Koukia, Alevizopoulos, Fildissis, & Katostaras, 2015), 33% of emergency nurses (Beck, 2011; Dominguez-Gomez & Rutledge, 2009), and emergency medical clinicians (Roden-Foreman et al., 2017). Algorithms for assessment have been validated and exist for a professional population, with the most popular being the Secondary Traumatic Stress Scale (STSS) (Bride, Robinson, Yegidis, & Figley, 2004), although this tool has not been adapted for use in a general population.

Studies on the prevalence of symptoms of PTSD and STSD in significant partners of veterans are “highly heterogeneous in nature” (Diehle, Brooks, & Greenberg, 2017, p. 44) with few studies assessing the partner’s primary traumatization or consistently utilizing specific measurement criteria. Despite the lack of research into the prevalence of STSD symptoms, it is known that higher rates of PTSD exist among veterans than the general population. In fact, the 2005 National Comorbidity Survey Replication (NCS-R) found a baseline lifetime prevalence of PTSD among adult Americans to be 6.8% (Kessler, Berglund et al., 2005) although other studies have estimated PTSD prevalence at 3.5% (Kessler, Chiu, Demler, & Walters, 2005), with a gender-based split, showing lifetime prevalence of PTSD among men at 3.6% and among women at 9.7% (Kessler, Chiu et al., 2005). The RAND Corporation's Center for Military Health Policy Research reported the prevalence of PTSD among service members

previously deployed in Afghanistan and Iraq during Operation Iraqi Freedom and Operation Enduring Freedom was 13.8%, a rate significantly higher than in the general population (Tanielian et al., 2008).

While research is lacking on veterans returning from wars and their families, evidence supports an association between STSD symptoms in partners and veterans with PTSD. Given the high rates of PTSD in veterans, an unmet need may exist in their partners.

### **Problem Statement**

Despite the apparent size and significance of the problem, there are no treatment protocols or screening tools to assess veterans for PTSD, let alone members of the general population for STS or STSD. The 2014 Institute of Medicine (IOM) report on treatment of PTSD notes that neither the Department of Defense (DoD) nor the Department of Veterans' Affairs (VA) has a mechanism for the systematic collection, analysis, and dissemination of data for assessment or treatment. In addition, only 53% of the veterans whose primary diagnosis was PTSD received the minimum necessary eight psychotherapy sessions within a 14-week period as required by VA guidelines (IOM, 2014).

There is no current national-level comprehensive program focusing on identification, assessment or development of family support for spouses or family members of those with PTSD, with most family support services provided locally and outside of the VA system. As spouses of veterans rarely seek psychiatric services at centralized locations, it is likely that practitioners in outpatient settings may be the first to identify potential problems resembling STSD in this population.

### **Purpose Statement**

The purpose of this project to adapt existing STSD screening tools for use with spouses of veterans for use in outpatient and emergency settings and to refine that tool through feedback from subject matter experts with the eventual goal of testing and reporting its effectiveness. The tool will enable identification of symptoms of STS/STSD in these clients who are usually seen by practitioners in outpatient settings.

### **Supporting Framework**

Investigation and interpretation of STSD can be assisted by application of a number of theoretical models derived from general systems theory. A holistic model of wholeness, general systems theory is characterized by understanding the interaction of nonlinear components in a larger system (Von Bertalanffy, 1968). The core premise of systems theory is that all systems use feedback to maintain balance. If one element in the system falls out of balance, then the entire system will either adapt to compensate or fall into disarray.

Von Bertalanffy noted in his original description that “psychologically, behavior not only tends to release tensions but also builds up tensions,” creating “maintenance of disequilibria.” (Von Bertalanffy, 1968 p. 191). In general systems theory, stress is a prompting mechanism, with organisms seeking to overcome stressors through connection to the larger system, with increased pressure placed on that larger system by individual parts. This fits well with theories regarding secondary traumatization, as a family system is pressured by a single member, the remainder of the system is placed under disarray.

General systems theory evolved into the more specific family systems theory, which predicts that families respond to stressors in one of four ways (Kerr & Bowen,

1988). These include (1) members of the family distancing themselves from one another; (2) individual members sacrificing their level of functioning for the sake of family functioning; (3) increased family conflict; and (4) increased adaptability strengthening the family system.

The assumptions above, however, are based on the idea that stressors are temporary. Should stress become longer lasting, the normalcy of stressors and crises result in increased pressure placed on the family system with new daily stressors adding to existing stressors. This adds pressure on the ability of the family to adapt and adds additional stressors if adaptation fails. If the family system lacks resilience and cannot address a stressor, failure adds further stressors to the point where individuals within the family feel the strain placed on the larger group (Galovski & Lyons, 2004).

Another model helpful for understanding PTSD, the Neuman Systems Model (NSM) is a model that proposes that an individual is in constant interaction with extrapersonal, interpersonal, and intrapersonal phenomena, known collectively as environmental stressors. Individuals have multiple lines of physiological, psychological, sociocultural, developmental and spiritual defenses to respond to these stressors. As an individual is exposed to environmental stressors, the normal lines of defenses are invaded requiring underlying flexible lines of defense. If the normal line of defense is invaded and the flexible line of defense is weak, a stress response occurs (Neuman, 1982). The stress response activates lines of resistance, which are more stable variants of flexible lines of defense based on support systems and coping styles; these lines of resistance work to prevent health consequences to an individual. Thus, an initial trauma triggers long term stress responses in an individual, overwhelming individual lines of defense leading an

individual to draw upon coping skills of his support systems thereby putting strains upon the system as well, leading to long term health consequences and stress responses in others.

To help an individual address the stress responses, one must, therefore, strengthen lines of resistance and defense, empowering the patient to overcome the external stressor and to strengthen the support network (Goff & Smith, 2005). Even though the etiology and pathology of STSD is not fully understood, development of symptoms is related to the interpersonal contact of those within the support network. Because symptoms of STSD develop through interpersonal relationships, strains of roles and burdens of support networks instead of individual experiences, a system theory is useful to understand and study the phenomena with the eventual goal of developing new interventions for treatment.

## **REVIEW OF LITERATURE**

### **Overview**

A review of literature was performed through review of PubMed, ProQuest, PsycInfo, CINAHL, and EBSCO databases. Search terms included: Secondary Traumatic Stress (STS) Secondary Traumatic Stress Disorder (STSD), Compassion Fatigue, burnout, trauma, stress, Vicarious Traumatization, spouses, veterans, and first responders. Other search terms included STSS or Secondary Traumatic Stress Scale and ProQOL to find studies that utilized other assessment tools for this disorder. Due to the inconsistency and limitations on previous research done time limiters will not be included on the search to allow for earlier studies to be assessed. Only English language journals were utilized for purposes of this study. Publications that were excluded from the search involved any that address pediatric or adolescent patients, due to that population being outside the scope of the paper. In addition, a notable canon of research has been completed focused on the families of holocaust survivors, however because most of the research focused on children of holocaust survivors, it will not be included in the scope of this project except as they serve to outline pathophysiology.

### **Pathophysiology**

A literature search was conducted to address the physiology of PTSD utilizing PubMed, CINAHL, EBSCO and PsycInfo. Limits on this search included journals published between 2013 and 2018 and English language only. The primary focus of the search was related to long term physiological effects related to post traumatic stress disorder instead of focusing on potential physical causes that are related to the disorder due to the fact such questions would be outside the scope of this project. Key search

terms included: posttraumatic stress disorder (PTSD), trauma, stress, and physiology. Further limiting search terms will included glucocorticoid inhibition, heart rate, amygdala and circadian rhythm, and genetics.

Currently, there is limited research focusing on the neurobiological changes related to PTSD, with none found by the author at the time of writing. In primary transmitted PTSD, research suggests that the amygdala is a key element to development of symptoms, with the orbitofrontal cortex and hippocampus showing reduced capacity for inhibition of amygdala activation possibly due to stress-induced atrophy of specific nuclei in this region. In primarily transmitted PTSD, traumatic stimuli can develop a conditioning to fear, as the amygdala, hypothalamus, periaqueductal gray, locus ceruleus, and parabrachial nucleus are activated repeatedly (Boccia et al., 2016). While no study on the orbitofrontal individuals with secondary transmitted PTSD has been completed, this could be an avenue for future research.

The 5-HTTLPR SS genotype, involved in encoding serotonin transporters, has been associated with a risk factor for PTSD in twin studies focusing on development of PTSD (Cornelis, Nugent, Amstadter, & Koenen, 2010). While no direct association was found between PTSD symptoms and the 5-HTTLPR genotype, it has been correlated to development of PTSD after exposure to trauma although mechanisms are unknown at current (Gressier et al., 2013).

Supporting the idea of a genetic component to PTSD, Yehuda et al. (2008) found in studies of children of Holocaust survivors that while being an offspring of a Holocaust survivor did not significantly increase the risk for lifetime PTSD, the presence of maternal PTSD did. Lehrner et al. (2013) confirmed these findings in a similar population

with maternal PTSD being correlated with reduced basal urinary cortisol excretion and increased cortisol suppression when exposed to dexamethasone. This suggests that glucocorticoid programming from the mother could be a cause for intergenerational transmission of trauma-related consequences or suggest a genetic pre-disposition for the disorder.

The hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system (SNS) have been implicated in the development and progression of PTSD symptoms. The SNS activates with stressor exposure, rapidly releasing epinephrine and norepinephrine from the adrenal medulla, which triggers physiological changes in heart rate and blood pressure. The HPA axis reacts to challenges, creating a hormonal cascade releasing cortisol from the adrenal cortex. This shapes patterns of stress response on a longer term (Zoladz & Diamond, 2013).

Amygdala activation and autonomic activity of epinephrine and cortisol produce many symptoms of PTSD, as continual activation of these structures is theorized to acclimate the brain creating easier activation with lower threshold of stimulation (Diano, Celeghin, Bagnis, & Tamietto, 2017). In certain cases, physical changes to the amygdala can be noted using imaging studies (Koch et al., 2016). One meta-analysis of the literature (Morris, Hellman, Abelson, & Rao, 2016) found that neither blood pressure (diastolic:  $r = -0.01$ ; systolic:  $r = 0.02$ ) nor cortisol ( $r = -0.07$ ) were associated with prediction of development of PTSD symptoms, however longitudinal studies examining risk markers in the HPA for PTSD symptoms have measured cortisol levels in saliva, plasma/serum, and/or urine. One study found that increase in hair cortisol concentrations from a baseline level immediately after trauma when compared to follow-up had a



negative correlation, suggesting that lower basal cortisol levels immediately after traumatization could be a potential risk factor for development of PTSD (Steudte-Schmiedgen et al., 2015). However, one 2012 meta-analysis found no significant difference in Cortisol levels between subjects who had experienced traumatization and those who had not ( $-0.029$ ; 95%CI:  $-0.145$ ;  $0.088$ ) or those who had been diagnosed with PTSD ( $0.175$ ; 95%CI:  $-0.012$ ;  $-0.362$ ). Increased cortisol suppression was found in subjects exposed to traumatic events compared to those who had not ( $-0.509$ ; 95% CI:  $-0.871$ ;  $-0.148$ ) (Klaassens, Giltay, Cuijpers, van Veen, & Zitman, 2012).

### **Secondary Traumatic Stress Disorder**

There were a limited number of studies focused on the targeted population, with no specific research found regarding epidemiology or treatment of STSD. In the various studies, assumptions regarding individuals with STS and STSD is that they have PTSD-like reactions, notably avoidance symptoms, hyperacuity, and intrusive thoughts. STS/STSD distinct from ideas of burnout due the fact that STSD and STS have an abrupt onset with clearly outlined symptoms, (Bjornestad, Schweinle, & Elhai, 2014; Renshaw et al., 2011; Yambo & Johnson, 2014) although Figley does suggest a potential connection between these processes (Figley, 1995, p. 12). Some studies differentiated between the idea of Compassion Fatigue and STSD. Potential etiologies have been theorized regarding STSD, although none have been firmly established in the literature. One theory states that STSD is caused by knowledge of or exposure to a traumatizing event experienced by the veteran, (Allen, Rhoades, Stanley, & Markman, 2010; Goff, Crow, Reisbig, & Hamilton, 2009) although certain research notes that the severity of a partner's symptoms are not necessarily related to expressions of STSD in spouses

(Bjornestad et al., 2014). Another theory is that role ambiguity or a form of caregiver burnout may lead to STSD (Calhoun, Beckham, & Bosworth, 2002; Dekel, Levinstein, Siegel, Fridkin, & Svetlitzky, 2016; Hollingsworth, Dolbin-MacNab, & Marek, 2016; Manguno-Mire et al., 2007) although there is limited evidence to either support or disprove this theory. As of this time no consistent etiology for STSD can be established.

Much of the research done on spouses of veterans show correlational links between symptoms in veterans with PTSD and those in partners and families (Ahmadi, et al., 2011; Dekel & Monson, 2010; Renshaw et al., 2011). These symptoms include, but are not limited to: somatization, heightened stress through anxiety, depression, and a variety of functioning problems in such areas as work, school, intimacy, and social relations (Ahmadi et al., 2011; Baum, 2014; Goff et al., 2009; Goff & Smith, 2005; Levin, Greene, & Solomon, 2016; Pearce, Garciasalas, & Krontz, 2016).

A lack of precision in measurement scales has limited speculation related to psychological impact of STSD largely due to a focus on general forms of distress, with focus on nonspecific symptoms of anxiety, general stress, or depression (Renshaw et al., 2011; Taylor, Bradbury-Jones, Breckenridge, Jones, & Herber, 2016). A variety of potential causes have been suggested. Renshaw et al. (2008, 2011) theorized that spousal distress was connected to their understanding of symptoms, although no inference for mechanism of action was made. Another study found that spouses reported distress about “running interference” for service members and veterans with PTSD, either by mitigating emotional triggers to prevent outbursts or by minimizing physical triggers in the environment (Fredman, Vorstenbosch, Wagner, Macdonald, & Monson, 2014). Dekel, Solomon, & Zerach (2016) found that combat veterans displayed lower levels of intimacy

and self-disclosure with elevated levels of PTSD-related avoidance symptoms which could lead to detrimental psychological effects for their partners. One meta-analysis correlated conflict in a relationship to the severity of PTSD symptoms with observed correlations ranging from .32 to .36 in various studies (p range .19 to .51) (Taft, Watkins, Stafford, Street, & Monson, 2011). Other examples of potential distress identified in the literature also include caregiver burden due to increase in responsibilities, avoiding triggers for the partner, decreased marital intimacy, and when the partner is subject to the veteran's mood changes or short temper (Calhoun et al., 2002; Caska & Renshaw, 2011; Dekel, Levinstein, Siegel, Fridkin, & Svetlitzky, 2016; Levin et al., 2016; Mansfield, Schaper, Yanagida, & Rosen, 2014).

Various manifestations of emotional distress related to symptoms of PTSD have been seen in spouses of veterans with PTSD. These include somatic complaints, psychiatric symptoms, tension, and stress (Ahmadi et al., 2011; Bjornestad et al., 2014; Buchanan, Kemppainen, Smith, MacKain, & Cox, 2011; Dirkzwager, Bramsen, Adèr, & van der Ploeg, 2005; Melvin, Gross, Hayat, Jennings, & Campbell, 2012), and a sense of isolation and avoidance (Dekel et al., 2005; Greene, Lahav, Kanat-Maymon, & Solomon, 2015).

Symptoms of depression were noted in many studies (Blanchard et al., 2017; Caspi et al., 2010; Frančičković et al., 2007; Klarić et al., 2012; Murphy, Palmer, & Busuttil, 2016; O'toole, Outram, Catts, & Pierse, 2010; Outram, Hansen, MacDonell, Cockburn, & Adams, 2009; Pearce et al., 2016), with Klaric et al (2012) finding a rate of 37% of wives of veterans with PTSD having a current episode of depression at the time of study in comparison to 7% of spouses with depression whose husbands did not have

PTSD. In the same study 19.5% of wives studied had suicidal ideation, compared to 3.9% in the comparison group.

Some studies have suggested that the level of a veteran's impairment correlates almost directly to the level of distress of his or her partners (Ahmadi et al., 2011; Caspi et al., 2010; Goff et al., 2009; Kianpoor, Rahmanian, Mojahed, & Amouchie, 2017; Klarić et al., 2012; Zerach, Greene, & Solomon, 2015) although one notable study suggested contradictory findings while the rates of STS in spouses of veterans matched that of the veteran population, there appeared to be no direct correlation between symptoms in the veteran or spouse (Bjornestad et al., 2014). Dirkweizer et al. (2009) found partners of NATO peacekeepers with symptoms of PTSD reported significantly more PTSD symptoms themselves. These included somatic problems, more sleeping problems, and more negative social support. Dirkweizer also found that sufferers' partners judged their relationships with less favorability than did partners of peacekeepers without PTSD symptoms.

Several studies focused on spouses of Israeli and American veterans found correlation between emotional distress and a sense of caregiver burden. In these studies, the sense of burden predicted changes in anxiety levels, dysphoria, and psychological distress (Calhoun et al., 2002; Dekel et al., 2005; Manguno-Mire et al., 2007). The role of caregiver burden in veteran's wives' secondary traumatization is emphasized by findings that caregiver burden was often a factor in veterans' functioning and wives' marital adjustment (Ahmadi, Azampoor-Afshar, Karami, & Mokhtari, 2011; Calhoun et al., 2002; Dekel et al., 2005; Zerach et al., 2015). In addition, feelings of caregiver burden

were associated with both the degree of the veteran partner's PTSD and the severity of day to day functional impairment (Dekel et al., 2016).

There are significant limitations in the research due to lack of coherent definitions of terms, inconsistencies in measurement criteria, and a tendency not to differentiate between primary trauma or secondary trauma. Thus, with limited research focused on the specific population and with no notable consistent findings regarding etiology, exacerbating factors or process of the disorder, research into other populations must be utilized.

### **Related Issues of STSD in Other Populations**

While there is limited research focusing specifically on family members of veterans with PTSD several empirical research projects have examined STSD and coping in both the law enforcement and human service fields. Research into these populations have suggested that learning about a traumatic event experienced by another can have the potential to traumatize an individual, a process is called vicarious traumatization. Vicarious trauma is more likely to occur as the care worker has greater interaction with the aftermath of traumatic events such as in the case of child pornography or vicarious reports of trauma. In addition, among nurses and professional care workers, the more difficulty with the exposure they report, the higher their STS scores are likely to be (Beck, 2011; Perez, Jones, Englert, & Sachau, 2010).

Dominguez-Gomez and Rutledge (2009) studied emergency nurses from community hospitals using the Secondary Traumatic Stress Scale (STSS) and found that thirty-three percent of the 67 emergency nurses met the criteria for elevated secondary traumatic stress symptoms with the most commonly reported symptom involving

intrusive thoughts about patients and avoidance of patients. In addition, more than half of the sample reported difficulty sleeping or easy annoyance. Nurses were found to suffer from increased rate of STS, with 54% of nurses reporting arousal symptoms, 52% reporting avoidance symptoms, 46% reporting intrusion symptoms, and 33% of nurses displaying all symptoms of Secondary PTSD according to Bride's algorithm to identify STS (Dominguez-Gomez & Rutledge, 2009).

Townsend & Campbell (2009) investigated the correlation of STS among nurse examiners of sexual assault using Figley's (1995) Compassion Fatigue Self-Test (CFST), finding that over one fourth of forensic nurses surveyed had scores indicative of experiencing secondary post-traumatic stress symptoms after sexual assault examinations. As a mitigating factor Townsend & Campbell found that organizational support and changes in caseload affected levels of secondary traumatic stress. Caseload ratio was found to be a strong correlative factor in development of STS in a meta-analysis of risk factors in therapists. The authors suggested that proportion of time working with survivors of trauma or the proportion of traumatized clients may matter more frequency of service or number of individuals treated (Hensel, Ruiz, Finney, & Dewa, 2015). This finding lends credence to the idea that spouses, who spend a significant amount of time caring for a single individual who has been traumatized, could be at significant risk for developing STSD symptoms. Contradicting those findings, however, Perron & Hitlz (2006) investigated whether specific task execution impacted the level of STS and burnout in 60 casework investigators. They found little correlation between aspects of burnout or symptoms of STS and the proportion of work directly related to forensic interviewing. Another study supported this research finding higher correlations with

personality traits and STS, with little connection between work-related variables and intensity of STSD symptoms (Rzeszutek, Partyka, & Gołąb, 2015).

Inconsistencies in measurement and modeling do lead to criticisms regarding studies of compassion fatigue. One study noted that most conceptual analyses of compassion fatigue focused primarily on behavior and motivators rather than a complete picture of compassion, (Sinclair et al., 2016) while at the same time compassion fatigue has been diagnosed if one of 40 potential symptoms have been expressed in a patient (Sinclair, Raffin-Bouchal, Venturato, Mijovic-Kondejewski, & Smith-Macdonald, 2017).

An interesting element noted in the meta-analysis of trauma in caregiving professionals is that date of publication seems to be correlated to a reduction in the severity of STS symptoms (Hensel et al., 2015). This could be due to either differences in criteria for assessment or reflective of a growing understanding of the effects of prolonged exposure to stress in professionals, leading to increasing supports for caregivers, although there is no clear reason found in the literature. If the latter, it could be an avenue for future research for treatment of the targeted population.

### **Measurement Criteria**

Some researchers have interpreted measures of general distress as being reflective of symptoms of secondary traumatization without attempting to identify primary traumatization or differentiate between anxiety or depression or PTSD (Dekel & Monson, 2010; Dekel et al., 2005; Mikulincer, Florian, & Solomon, 1995). Other researchers have found that partners of combat veterans with PTSD have significantly higher levels of PTSD symptoms in comparison to partners of veterans with no expression of PTSD symptoms (Dirkzwager et al., 2005; Goff et al., 2009; Yambo & Johnson, 2014). Despite

this research, critics have expressed concern that most measurement scales for secondary traumatization such as the SSTS and the Compassion Fatigue Self-Test (CFST) for Psychotherapists fail to allow for specific differentiation between general distress, primary PTSD, and secondary transmitted PTSD (Renshaw et al., 2011). One study in 2014 (Bjornestad et al., 2014) used a modified form of the Posttraumatic Stress Disorder Checklist: Military Version (PCL-M) to assess for PTSD symptoms in spouses using a 4-factor scale that measured reexperiencing, avoidance, emotional numbing, and hyperarousal. The researchers, however, admitted that they failed to control for prior exposure to trauma in the use of the scale, even as they found correlation in symptoms of PTSD and STSD rates ( $r = 0.217, p < 0.01$ ).

In the corpus of research of Compassion Fatigue the ProQOL is often seen as a standard measurement, even though it does not directly measure all aspects of compassion fatigue including trauma symptoms, general distress, cognitive distortions or burnout (Bride, Radey, & Figley, 2007; Sinclair et al., 2017). In addition, the ProQOL does not measure elements of compassion directly, which can limit its effectiveness as a measure (Bride et al., 2007; Ledoux, 2015; Sinclair et al., 2017).

Critics argue that high levels of generalized distress do not convincingly suggest that STS/STSD exists, and that such interpretations of those scores to outline prevalence or risk in family members might be questionable. While critics do note that a correlation most likely does exist and that more recent research suggests a connection, they argue that the precise nature of that connection cannot safely be inferred without further research (Renshaw et al., 2011).



Some later research which more specifically focuses on STSS exists. However, often, these studies fail to discuss traumatic events found in the subjects of STSD as differentiated from full on primary trauma (Dirkzwager et al., 2005; Goff et al., 2009). This unfortunately might indicate that a partner's score on PTSD measures could be related to prior primary traumatic events or general distress related to the numerous challenges of life with veterans with PTSD instead of a result veterans' traumatic experiences.

Other limitations of measurement scales involve the shortcomings of the measures used to assess secondary traumatization PTSD. Often these instruments are self-report measures that address criteria as they exist in the DSM IV; measures that are raised include generic symptoms of distress, such as hyperarousal symptoms, avoidance, feelings of isolation and irritability. This means that spouses can score highly on the STSS without having any symptoms be trauma-specific (Renshaw et al., 2011).

A drawback with any study that is cross-sectional in nature is that one cannot determine causal relationships, because it is not possible to ascertain the ordering of events. Bride (2011) has urged researchers to develop longitudinal studies to measure STS over time, an ongoing limitation with all populations suffering from STS and STSD, as most studies focus only on a small population for a short period of time.

## METHODS

The purpose of this project is to develop a screening tool, based on established literature and translated to work specifically with partners of veterans with PTSD. The review of literature demonstrates significant gaps in the various tools utilized to measure STSD in this population; none of these disparate tools directly measures the key symptoms of STSD.

At this point, each previously utilized measurement criterion has been assessed along a three-factor scale for symptoms of intrusion or arousal, avoidance or numbing, and global functioning. These measurements directly apply to the diagnostic criteria as found in the DSM. Most scales used fail to assess history of prior traumatization or exposure to traumatized individuals. Since STSD is a specific diagnosis with very clear criteria different from anxiety or depression, being a form of PTSD without initial traumatization, any screening tool must take that into account.

A screening tool was created based on the literature, translating and combining several screening tools used in prior studies, and used to measure the specific criteria for STSD. Twenty-four questions were derived from three existing scales, the Professional Quality of Life Scale (ProQOL) (Stamm, 2010), the Specific Secondary Stress Scale (STSS) (Bride, Robinson, Yegidis & Figley, 2004), the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) (Weathers, Litz et al., 2013.) Where specific questions overlapped or measured similar things they were combined into a single question. Specific references to trauma found within the questions were changed into specific references for the partner. Scoring for that section of the tool was limited to a measurement of presence of the symptoms over a period of the previous month. An

additional 17 questions were adapted directly from the Life Events Checklist for DSM-5 (LEC-5; Weathers, Blake, et al., 2013; Appendix B). The LEC-5 did not require significant changes due to the fact that assessment of a history of trauma is still a vital element to assessing for STSD, although scoring for that section of the tool would allow for assessment of both direct and indirect trauma. Further adaptations and changes to the tool from the four adapted tools were limited until after review by Subject Matter Experts (SME) in focus group setting, with changes presented to prior participants through electronic mail or in person.

### **Participants**

The population to be focused on are spouses of veterans, often overlooked by the Veterans Affairs offices. With the VA's limited resources not even being adequate for assessment or treatment of more than 53% of the returning veteran population, and with the lack of any systematic treatment for spouses of veterans, it is likely that these persons will not be seen in VA facilities. Therefore, the tool must be usable in a variety of settings, some with limited resources. For that purpose, the presumed primary setting where this tool will be utilized will be outpatient facilities, psychiatric clinics, and emergency departments. SME were therefore be drawn from these settings for feedback, and included Psychiatrists, Clinical Psychologists, and Psychiatric Mental Health Nurse Practitioners (PMHNPs).

The criteria for inclusion as SME included having at least one-year experience working both with patients with PTSD, family members of patients with PTSD, and experience in either emergency clinical or outpatient clinical settings. Criteria to participate were limited to those with experience in the psychiatric field longer than one year, either in medication management, therapy or a combination thereof. The group

therefore all had experience with psychological assessment in an outpatient or clinical setting with a variety of levels of exposure and experience. Selection criteria were consistent with the recommendations of Grant and Davis (1997) that SME have clinical expertise, expertise of the clinical framework, and training as part of their qualifications. While the recommended amount of SME for a panel to achieve validity is listed between 3 and 20, Grant and Davis also recommend using a higher number if certain members of the panel lack all the qualifications desired. As there was a wide variety of experience, background and understanding of the clinical framework, the additional SME were recruited.

Recruitment of SMEs was primarily through word of mouth and snowball recruitment, starting with contacts at Foothills Psychological Services and Haven Psychological Services, outpatient psychological centers with associated psychiatrists, and fellow PMHNPs. While professionals from outside that setting were interviewed, they did so as private individuals instead of as members of a larger organization. Permission was given by administration for interviews or data collection to take place at both psychological organizations (Appendix C).

### **Project Development**

SME with experience and knowledge related to the setting and population are vital to the project to ensure content validity of the tool. This feedback helped to determine if the content of the tool accurately captures the information necessary for measurement. The psychological parameters that comprise the tool were assessed by volunteer participants to determine its effectiveness as a measure of STSD. Group discussion sessions were established, with individual discussion sessions based on SME

needs and preferences. Input was solicited and utilized to determine whether the tool contained appropriate parameters for assessment, with content altered based on that input. Opinions on applicability and usability of the tool (e.g., feasibility) were assessed. To enhance the appropriateness, relevance, and accuracy of the items in patients with STSD, experts were asked to modify, add, or delete questions in the instrument as they felt applicable. The evaluation also included suggestions for content clarity, language, relevance, format, and scoring.

During the discussion sessions, a brief education session of 10 to 15 minutes was provided, introducing the tool and assessment criteria. A semi-structured interview was utilized to get feedback regarding the SMEs experiences with the population and efficacy regarding the assessment criteria. An interview guide was used to conduct the sessions with the project leader clarifying responses, posing related questions in response to statements or questions from the participants. This interview guide (Appendix D) was modified based on initial feedback to include an additional question regarding scoring of the tool, following significant discussion regarding limitations and benefits of different scoring methods. This will be further discussed in the results section. The project leader took notes based on what was said during the interview process, with the follow-up feedback for the updated tool solicited to ensure validity of responses. No compensation was provided for attending the interview sessions. Due to time commitment issues from individual participants. An additional two sessions were added to the original plan for three sessions. Individual sessions were held for six participants. Responses and feedback from individual participants did not differ significantly from feedback during group sessions. Individual sessions were subject to the same limitations as outlined above.

### **Ethical Issues**

Institutional Review Board (IRB) review process was completed with the California State University system, as the outpatient facilities hosting the group interviews lacked their own IRBs. This project involved limited risk to participants, with the only barriers being the time commitment required for the interview. Potential risks regarding re-traumatization of SMEs due to recall of past patient experiences were minimal, and no other risks were anticipated to participants in interviews.

As such, the project was considered exempt from IRB review. Demographic information was collected about the participants as well as comments, recommended changes, and modifications regarding the assessment tool. There was no coercion for participation and participants were informed that they could withdraw from the project at any time with all collected data. During data collection, none of the subject matter experts withdrew from the project.

### **Data Collection**

Following IRB approval, a rigorous review of the tool was performed during group discussions with SMEs. Use of SMEs to establish face validity is an important factor in the development of an assessment instrument, addressing whether items within the tool measure desired domains of content adequately (Lynn, 1986; Grant & Davis, 1997). The group discussion method was used because it allowed the project leader and participants to interact directly with each other. The method also allowed the opportunity to record anecdotal notes contemporaneously and allowed real time feedback from other participants. Group sessions ranged in size from three to ten participants with six sessions for individuals for those who could not attend a group session.

The author developed a semi-structured group discussion guide with open-ended questions related to each STSD psychological parameter, associated score, and diagnostic criteria. These questions will be based on the structure of the tool itself and focused on applicability and usefulness in the clinical setting. The experience and knowledge base of the SMEs allowed them to provide feedback to aid in refinement of the tool.

Each session while originally planned for 30 minutes lasted for 45 minutes total with additional time afterwards for discussion and questions from the SME. The sessions utilized a semi-structured interview guideline to ensure focus of the meeting and applicability of the feedback. Based on SME feedback at the first session an additional question was added to the semi-structured interview guide regarding how such a tool should be scored. The project leader guided participants through the discussion guide to encourage critique of the assessment tool. Written notes were utilized to update the tool, with a planned follow-up review of the tool solicited from participants at a later time, to assure veracity of information gathered. Advantages to utilization of the group interview and feedback session included convenience of sampling, immediate participant feedback, and cost effectiveness. Disadvantages include time limitations, potential group conformity and the potential that individual group members may withhold information that would be more freely shared privately.

Data collection procedures utilized the following process:

1. Group sessions will be conducted in the conference room at Foothills Psychological Services in Upland, CA.
2. Subject matter experts attended one of five sessions offered.

3. The project leader facilitated a 10 to 15-minute education segment to introduce the tool.
4. Feedback sessions were 45 minutes in length following 15-minute education session, with adaptations based on information gathered. While 45 minutes were allotted for the group sessions, each one lasted for a period of 60 minutes.
5. Utilizing the self-developed semi-structured discussion guide, the project leader facilitated responses using open-ended questions and per psychological parameter.
6. Anecdotal comments, feedback and suggestions not included in the discussion guide were recorded in writing.

Some SME expressed interest and were unable to attend one of the group sessions, instead these participants attended one-on-one interviews which followed the same criteria and interview structure. No significant difference in feedback was found in group or outside of group sessions suggesting that the difference in the setup, location, or number of participants in the sessions was significant.

### **Data Analysis**

Data analysis was performed following written recording of feedback during the interview process. Initially, interview feedback was grouped based on responses to specific questions in the semi-structured interview and written into a table. The responses were summarized and streamlined into content areas for content analysis and final review. When similar feedback was received from multiple SME or across multiple



sessions these recommendations were utilized in further revisions in the development of the tool.

Support from the literature and suggested revisions from the group sessions were utilized for revision of the tool. Participants were sent the final screening tool via electronic mail, or were provided it in person, to confirm the application of comments and provide additional feedback. At time of writing not all participants have given feedback regarding revisions. Future projects will seek to test the validity of the tool, following completion of the DNP program.

Thirty-one individuals, six prescribers and 25 psychologists, were interviewed in total, over the course of three months from August 2018 until November 2018.

Interviews were done based on provider availability.

## RESULTS

The feedback from SME was often not given in response to specific questions. Participants often gave overlapping answers and provided additional feedback related to varied and unpredictable experiences. Therefore, responses were grouped into content areas including structure of the screening tool, background, administration of the screening tool, symptoms of STSD, use of assessment tools, scoring and modifications of the tool.

### Structure

Discussion regarding the structure of the tool led to a variety of conclusions, with the majority of the interviewed SME psychologists believing that the length of the tool was appropriate. One SME stated: "[the tool] appears easy to use, [at the length of] 24 questions, it can easily be worked into a conversation" and another noted "I could breeze through this checklist really quickly with a patient." While four of the interviewed psychologists made recommendations to combine specific questions, notably questions 18 and 19 due to the similar topic of focus. No consistent editing recommendations were received during the sessions.

Among prescribers, three suggested a shorter assessment tool, although there were few recommendations regarding how the tool could be shortened. One prescriber recommended development of a two-step, conditional tool, with an initial six questions focused on specific symptoms, and subsequent questions of the assessment expanding upon affirmative answers to those prior questions. For example, if question 10, "Had intrusive thoughts that were difficult to push from mind," were answered in the affirmative, this could lead to questions such as "Had repeated, disturbing dreams about

partner” or “Found they were preoccupied with helping spouse,” while these questions could be dropped from the tool for brevity if it was answered in the negative. As no other SME could recommend specific sections to be removed from the tool without losing sensitivity to the symptoms being assessed, this could be one potential compromise to increase usability of the final tool. While many prescribers sought a shorter version of the tool, several psychologists recommended additions for further assessment of background.

### **Background**

A repeated inquiry from the SME sessions was whether the tool should be modified to add a section on patient background; as one participant noted, they needed "a part where you get their history." This was supported by discussion of the background of patients who expressed and showed symptoms of STSD. One psychologist noted "a history of physical abuse and emotional abuse," asking "could that lead to a primary trauma?" Recommendations included adding "questions for a history of depression" as well as a section being added "on the medications, prior treatment and diagnoses. Maybe a background section." Other recommendations for a proposed background section of the assessment tool included questions regarding "emotional abuse, social bullying, online bullying and relationship breakups ... that can cause stress and trauma."

Conversely, other interviewees suggested that history and background would be more appropriately included in general assessment, as part of the clinical judgement of the interviewer with regards to a larger treatment program, instead of as a part of an assessment tool. A history of substance abuse was also proposed as part of the background section due to the increased risk factors among individuals with STSD, with one recommendation for the addition of "substance abuse questions, something to track

maladaptive behaviors might be worthwhile.” The merits of this idea were contested due to differences in style and preferences of when specific information should be gathered in a diagnostic setting, as part of an assessment tool or as part of the clinical interview process. Due to concerns about the length of the tool, a background section was not added in revisions.

### **Administration**

While specific variations among interview and administration styles were discussed with the SME, there were two primary styles that they attested to using: a conversational style, as part of an interview; and allowing the patient to fill out the tool independently, without direct instruction from the SME. In defense of allowing self-administration, one SME stated "what is interesting is the clinician perspective versus the patient perspective. The patient might not report on certain symptoms because they aren't aware of their importance, and the clinician might evoke them in the client by asking the questions. Clients tend to want to please their psychologists.” Other SME recommended a more conversational style noting "When dealing with intrusive and traumatic memories and thoughts like this, it's better to be conversational, don't just give the tool to a patient to do themselves."

Additionally, timing of the administration of the test arose as a regular of conversation in the SME interviews, with a focus on the establishment of baseline with pre-and post-assessment, and whether patient's partners would be tested as well. "Would you have them answer the trauma questions for their partners too? Perhaps measuring the partners scores and their own scores can let you assess how much the patient knows about what their partner is going through, see whether knowledge of the trauma is

important later." Testing the timing of the symptoms was also seen as an important element in administration of the test, as a way to create a differential diagnosis. "Are the symptoms occurring while with a partner and different when they're away? Doing the assessment twice [at different times or over multiple sessions] might be worthwhile to try to find if there's a qualifying rating."

### **Symptoms**

Differentiation between symptoms of general anxiety, stress, or depression and STSD were raised as a critical issue over the course of the interviews, with a variety of differential diagnoses and strategies discussed. One of the primary challenges with differentiation between these conditions is that the SME frequently attested to using the presence of trauma as a primary differentiating feature. One described the distinction they use for diagnosis purposes: "PTSD is caused by a traumatic event, but you get nightmares, estrangement from people who remind you of an incident. You don't have to have flashbacks or disassociation with MDD." Indeed, ignorance of alternate criteria for PTSD, specifically the forms involving exposure to others with PTSD or secondary knowledge of the traumatic event, was not uncommon among SME. Nevertheless, upon hearing about such alternative criteria, these same SME were able to instantly recognize individuals they had worked with in the past who fit the profile of symptoms, noting "I'm remembering more about my patients with these problems. I never would have thought about it as a separate problem, but their problems never fit the diagnoses of anxiety or adjustment disorder or stress, they do fit these descriptions more." Symptoms as outlined in the DSM 5, notably intrusive thoughts, avoidant behavioral symptoms, hyperacuity, and sensitivity to surroundings symptoms of general distress with exposure to individuals

with PTSD and without a primary trauma were agreed upon as clear symptoms of the disorder.

Other diagnostic criteria for STSD as a different diagnosis from general stress were discussed and outlined, with somatic symptoms being regarded as more noticeable in patients with a history of PTSD or STSD compared to patients with general stress, depression, and anxiety. The vast majority of SME agreed that "The big difference is the avoidance and intrusiveness symptoms" and that both are addressed directly in the tool. Other potential symptoms discussed included nightmares and night terrors, history of substance abuse, avoidance of a specific source of trauma such as the partner, intrusiveness, and changes in appetite, although there was no consensus regarding the diagnostic qualities of these symptoms.

One specific point of differentiation between general anxiety and STSD that interviewees considered important was the timing of symptoms. Most notably, they wanted to know more about the time of onset of the condition and whether exposure to the partner exacerbated symptoms. To quote one interviewer: "Do they present more symptoms with the partner, are symptoms elevated with partners? Does it permeate their life with the partner?"

### **Use of Assessment Tools**

The SME raised specific concerns about the limited manner in which they applied assessment tools in general. While members of larger organizations, those governed by specific rules and expectations regarding the use of assessment tools, did utilize the tools as designed, most other SME interviewed did not utilize tools at all. One interviewee expressed: "I should use tools more, I rarely do. I think about them, I ask the questions in

my interview, but a good tool is validated and consistent and a lot more detailed." Other SME tended to utilize tools primarily for insurance purposes, justifying treatment at a specific level of care. A literature review was performed following completion of data collection, but no significant study of tool use in an outpatient setting was found.

### **Scoring**

While not part of the original questionnaire, points regarding how the tool should be scored were consistently raised by SME in each interview, with a variety of responses. While no one response achieved consensus, three different options for scoring were discussed: frequency count; presence or absence of symptoms for a particular length of time; and a Likert-like scale. No significant differences were found based on background of SME or experience level. The interviews provided only the insight that prescribers were less willing to score with Likert-like scale, instead preferring measurement of presence of symptoms, or lack of symptoms.

### **Tool modifications**

A shortened tool is an attractive alternative to a full-length tool, due to an impacted and time-sensitive clinical setting, but risks of loss of sensitivity must be considered (Allgaier et al., 2012; Silver et al., 2012). Based on feedback as described above, a two-tier tool based on five mandatory questions, each triggering subsequent, conditional questions as necessary, was designed. The clinician is guided through the questionnaire to complete both mandatory and conditional fields. Each mandatory question is specifically focused on one of the symptoms outlined in the diagnostic criteria, with initial exposure to trauma and exposure to a partner with trauma combined into a single question. Feedback to modifications has been limited with only 10 responses

at the time of writing, with six responders preferring the original state of the tool and four preferring the two-tiered structure for ease of assessment. One SME stated, “the tool is more elegant this way, but I think that I would only use the tool in the first place if I noticed in assessment that there would have been a positive response to these questions anyway.”

### **Future State**

Future research will include validation of the established tool with a population of spouses of veterans with PTSD. The goal of Phase Two will be the development of a research proposal to validate variations of the tools as designed. A sample of spouses of veterans with PTSD will be drawn from a selection of support groups in San Diego, Orange, and Los Angeles Counties. Ideally, multiple versions of the tool will be tested, with variations in scoring and length. One version of the tool will employ frequency count scoring, one with a Likert-like scale and another with presence of symptoms. Further revisions to the tool will be made based on results of validation studies.



## DISCUSSION

Several significant limitations existed in the initiation of this project, due to lack of research information regarding the initial diagnosis of STSD and the lack of consensus among researchers regarding potential etiologies, exacerbating factors and prognosis of the diagnoses. Many the SME interviewed had limited knowledge and understanding of the diagnosis, even if they had experience working with the targeted population. The diagnosis is currently known under different names, including compassion fatigue, burnout, and secondary PTSD, this often led to the initial portions of the conversation towards theorizing regarding potential causes of the disorder. As one of the primary problems involving STSD is the lack of consistency in diagnostic tools or research, this level of confusion was unavoidable, and indeed spoke directly to the need for a specific tool to assess, diagnose, and engage in further treatment for the patient population. Each SME was able to identify patients who had suffered from the symptoms related to the diagnosis for STSD, with consistency in how these patients presented. Different SME had variations in how they differentiated their diagnoses between STSD, PTSD, and general distress in ways that did not match diagnostic criteria as found in the DSM or the literature.

There were few differences in responses between prescribers and non-prescribing SME. These focused primarily on the length of the tool, with three prescribers recommending a shortened tool, while 10 non-prescribers recommended additional sections regarding background or history. All other SME felt that the tool was of an appropriate size and level of detail with no other variation necessary.

Additionally, the inconsistent use of assessment tools in an outpatient or clinical setting presents an interesting challenge to the development of uniform standards of assessment and treatment. While the tool is intended to be administered by the provider, it can, with minor modifications be utilized as a self-administered tool. Modifications to instructions and a change of language to the second person would be necessary for this. Although the tool has not been used yet, this may provide less substantial information than intended as part of a more comprehensive interview process.

In addition, even though several SME stated that they utilized tools for insurance purposes or as a self-reported screening tool, a vast majority of SME reported not utilizing tools consistently, most stating that they “internalized” the questions of the tool and asked them as part of a general assessment. This may be an avenue for further research, as no comprehensive study on how assessment tools are utilized in a clinical setting was found during supplemental literature reviews. While the creation of assessment tools was agreed to be important, the variations in how they are utilized may call into question how such tools should be designed in the future and how clinicians should be educated in their use.

Cultural factors were not specifically examined during this project, due to consistency among responses. Differences in education, background, training and time in the field did not appear to lead to notable differences in response. Other than different practical concerns regarding the length of the tool, no notable difference was seen between prescribers or other SME.

Inconsistencies in previous research into STSD contributed to inconsistencies in the understanding of SME. SME responses have demonstrated that, although many of the

participants understood the components and symptoms of STSD, their understanding of the severity, health implications, and treatment options for these illnesses were limited. While the baseline knowledge fits current standards of care, the lack of general knowledge regarding the disorder, largely due to the lack of appropriate screening tools to diagnose and assess these patients, did provide significant barriers to feedback. While a great deal of information was gathered and utilized in the modification of the tool, until tool validation is completed, the effectiveness or value of this information cannot be determined. These differences will likely only be addressed with further research into STSD as a diagnosis, which may only be possible once a diagnosable population is screened and studied, necessitating the creation of the tool.

## CONCLUSION

The lack of comprehensive research on STSD is a significant problem that can potentially affect an unknown yet substantial amount of people from a wide range of backgrounds. Due to inconsistencies in assessment, diagnosis and interpretation, patients who present with these symptoms may be left undiagnosed and untreated in a variety of clinical settings. The first step to addressing the lack of evidence-based practices for treatment of this diagnosis is creation and validation of an assessment tool to allow for screening. An effective tool would allow this population to be identified, to provide an avenue for further study, access to resources, and eventual treatment. The use of previously validated tools, adapted for a portion of the general population, is an important first step that will be refined with validation of the new tool. The unanimous consensus among SME in a variety of settings is that such a tool would be worthwhile and easy to implement. While further work is necessary before applying the tool in practice, this represents an important first step in addressing this unmet need in the community.

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**APPENDIX A**  
**TABLES OF EVIDENCE**

Table 1

*Secondary Posttraumatic Stress Disorder in Spouses of Veterans*

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
To assess the effectiveness of a modified tool for assessment of spousal STSD symptoms. (Bjornestad, Schweinle, & Elhai, 2014)	Descriptive correlational study: Variables: STSD symptoms in spouses. PTSD symptoms in veterans.	227 couples from the Army National Guard. Veterans deployed outside the United States Within 10 years of study	PCL-M for measures of PTSD symptoms (17-item self-report likert scale of stressors) Focused on four-factor structure (reexperiencing, avoidance, emotional numbing, and hyperarousal)	2.6% ( $n = 6$ ) of spouses > 50 PCL-M. 5% ( $n = 11$ ) > 44, (civilian cutoff), Of the 14 soldiers who reported PTSD symptoms, 1 of those 14 spouses scored greater than 44.	Limitations: research included a self-report measure that did not control for previous trauma. PCL-M may be used to assess STS symptoms in military spouses. Lack of correspondence between husbands with symptoms with PTSD symptoms and spouses with PTSD symptoms suggest other causes for STSD expression
Examine symptoms in spouses of service members/veterans with PTSD symptoms.	Descriptive observational study: PTSD symptoms, Symptoms of general distress Attribution of symptoms to	190 civilian wives of male service members with combat related PTSD (< 30 on PCL) who had been deployed within 1 year of study	PCL-C for PTSD symptoms (17-item self-report Likert scale of stressors)  MASQ for wives' general psychological distress	Wives who attributed symptoms to mix of husband's experiences and own life: Greater level of generic symptoms ( $M = 2.51$ , $SD = 0.97$ ) than trauma-specific	< 20% of spouses attributed symptoms to husband's experiences. No differentiation between knowledge of veteran's experiences or stressors from living with veteran.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
(Renshaw et al., 2011)	husband's experiences			symptoms ( $M = 2.22$ , $SD = 0.96$ ), Wives attributing symptoms to events in their own lives or solely to their husbands' military experiences had similar levels of trauma-specific ( $M = 2.12$ , $SD = 0.98$ ; $M = 2.31$ , $SD = 1.06$ , respectively) and generic symptoms ( $M = 2.05$ , $SD = 0.89$ ; $M = 2.24$ , $SD = 1.04$ ) $p < .06$	Lack of differentiation between symptoms of general distress and STSD, even with targeted PTSD scales.
To explore relationships between PTSS, and marital functioning. (Allen, Rhoades, Stanley, & Markman, 2010)	Descriptive correlational study Variables: PTSD symptoms in husband, marital satisfaction, Confidence in relationship, positive bonding, dedication to relationship, parenting alliance, dedication to relationship, satisfaction with sacrifice	434 married couples comprised of an Active Duty U.S. Army husband enrolled in a larger study on effectiveness of marriage education workshop at Fort Campbell, KY.	PCL for PTSD symptoms, KMS (Kansas Marital Satisfaction scale) to assess marital satisfaction, Confidence Scale to measure confidence in relationship, Positive bonding scale (9 question assessing friendship, intimacy, fun, support and relationship), PAI for Parenting alliance, Commitment Inventory for Dedication and satisfaction with sacrifice.	PTSD symptoms correlated with marital functioning for both husbands and wives, except for wives' satisfaction with sacrifice. (negative communication .36 to .28, Parenting alliance -.30, -.16, Positive bonding -.31, -.24, Marital satisfaction -.39, -.27, Dedication -.18, -.14, satisfaction with sacrifice -.12, -	No difference in functioning between couples separated or not due to deployment. Deployment related increased PTSD symptoms. PTSD symptoms associated with lower satisfaction, confidence, positive bonding between the spouses, and dedication to the relationship for both partners. If positive bonding, negative communication, and parenting alliance controlled, husband PTSD symptoms no

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
				.08, confidence -.33, -.30)	longer significantly predicted marital satisfaction for wives.
To assess PTG in wives of former POWs, association with husband's PTSD and symptom progression. Also, to assess relationship between wives PTG and PTSS. (Greene, Lahav, Kanat-Maymon, & Solomon, 2015)	Design: Descriptive correlational study. Key Variables: PTSD status and trajectory in husbands. PTSS in wives and PTG in wives. 3 groups: Wives of YKW POWs with PTSD, without PTSD and a control group of CVs who were not POWs.	116 wives of Israeli ex-POWs from YKW and 56 wives of a control group of non-POW CVs taken from longitudinal study. Setting: Assessment questionnaires given to approved IDF veterans in Israel from prior longitudinal study.	PTSD-I: To measure PTSD symptoms in husbands and wives. PTG-I: 21-item self-report with 5 subscales: relating to others, new possibilities, personal strength, spiritual changes, and appreciation of life scored on Likert Scale. Changes in PTG and PTSS were assessed over time. Data was collected in 2003 (T1) and 2011 (T2) examined to see consistency over time.	Wives of ex-POWs had significantly higher scores on PTG compared with control group of non-POWs, 2.39 (.83) vs. 1.86 (.90), ( $p < 0.5$ ). PTG in spouses is associated with husbands' symptoms. Wives of husbands with chronic and delayed PTSD trajectories reported the highest PTG, with consistency of symptoms over time.	trauma is unnecessary to develop both positive and negative changes associated with PTSD. This supports the finding that one can develop PTSD symptoms without primary trauma.  Limitations: Self reporting scales may misrepresent symptoms, lack of knowledge of wives' history prior to marriage to rule out other potential correlation.
Study occurrence of STS among spouses of Veterans with PTSD-diagnosis. Consider association of demographic parameters with STS.  (Ahmadi, Azampoor-	Descriptive Correlational Study:  Key Variables: PTSD Status in Husbands, Symptoms of re-experiencing, hyperarousal, depression and relationship impairments.	Subjects: 120 veterans of war between Iraq and Iran and their spouses (n = 240). 35-50 years old, married for >5 years, living together. Spouses excluded for other mental disorders. Simple random sampling from attendees at clinic from 2007-2008.	PCL-90: To assess veteran PTSD symptoms, Mississippi Scale for Combat-Related PTSD for Spousal symptoms.	Spousal re-experiencing stressful events = 39/50 hyperarousal = 31/50 depression = 34/45 interpersonal relationship impairments was 29/50. Veteran PTSD predicted STS in spouses ( $p = .0001$ ). Duration of PTSD	Results show correlation between Veteran PTSD symptoms and duration of symptoms and Spousal symptoms. Illustrates spousal primary traumatization.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
Afshar, Karami, & Mokhtari, 2011)	Severity of PTSD symptoms and length of PTSD symptoms.			symptoms predicted severity of STS ( $p = .01$ ).	
To study symptoms of STS in Emergency Room Clinicians. (Roden-Foreman et al., 2017)	Descriptive Correlational Study: Variables included: Demographics: age, gender, race, ethnicity, marital status, provider type, time in position and whether job was in trauma center. Big 5 Personality traits: Trauma History, STS symptoms.	Convenience sample of 134 Emergency Medical (EM) providers (Physicians, NPs and PAs) from 10 hospitals in Texas. Residents were excluded, 118 respondents. Setting: Anonymous survey during EM staff meetings July – November 2015.	STSS: To measure symptoms of burnout and STS including hyperacuity, re-experiencing and avoidant behavior. TIPI: 10 item measures of Big 5 Personality Types. CD-RISC 10: 10 item Likert scale measures resilience. LEC-5 = 17 measure scale that assesses exposure to traumatizing events, to rule out PTSD.	12.7% screened positive for STS. 33.9% had at least one symptom. Low resilience/ history of personal trauma associated with STS. Spending $\geq$ 10% of time with trauma patients. Gender and personality traits not associated with higher STS.	Notes: EM providers have shorter exposure times to individual patients, have less of an opportunity to develop a prolonged relationship compared to spouses. Increased time can lead to increased risk, although the correlation is not strong. Limitations: Different population, increased risk
Investigate the association between veteran PTSD, perception of spousal PTSS and relationship adjustment. (Zerach et al., 2015)	Descriptive correlational study. Variables: POW status were compared with PTSD symptoms, marital adjustment, and symptoms of spousal secondary trauma.	115 wives of Israel Defense Forces (IDF) land forces veterans who were POWs during the YKW taken from prior longitudinal study vs. 56 wives of YKW veterans who were not POWs drawn from random sample by IDF computer banks. Self-reporting questionnaires were sent	PTSD-I: 17 symptoms of PTSD) DAS: 32 item scale divided into: consensus, cohesion, satisfaction, and affection expression. Measures marital adjustment with higher scores illustrating better adjustment. SRH dimensions:	Spouses of ex-POWs reported increased STS and decreased marital adjustment compared to wives of matched control veterans.	Wives of former POWs are susceptible not only to ST, but also to lower levels of marital adjustment. Limitations: Bias from self-reporting scales, primary focus of research in Israel. No information on whether soldiers were assessed for PTSD, just that POWs have higher risk of PTSD. Notes: Study suggests correlation between ST and

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
		to participants. Setting was in Israel; no further information was given	Measure of (1) general health (5 items) and (2) social functioning (2 items) on Likert scale.		PTSD, but lack of PTSD assessment of spouses and sample of people who survived war limits generalizability  Useful to show association between PTSS in veterans and spouses
To address relationship satisfaction in the CATS model related to trauma history and STS. (Goff, Crow, Reisbig, & Hamilton, 2009)	Descriptive Correlational Study:  Variables: Trauma symptoms, Marital adjustment, History of trauma.	45 couples from Fort Leavenworth and Fort Riley, convenience sampling.  Veterans had recent deployment overseas,	<b>TLEQ to measure trauma.</b> <b>PPTSD-R: 17 item scale measuring</b> Re-experiencing, Avoidance, and Arousal. TSC-40: 40-item self-report to measure Anxiety, Depression, Dissociation, Sexual Abuse Trauma, Sexual Problems, and Sleep Disturbances. DAS: Measure relationship adjustment	Negative correlations between soldier's DAS and PPTSD-R ( $r = -.45, p < .01$ ) and TSC-40 scores ( $r = -.58, p < .001$ ), not <b>soldiers'</b> TLEQ ( $r = -.19$ ). Partners' DAS scores were only significantly correlated with <b>soldiers'</b> TSC-40 scores ( $r = -.32, p < .05$ ).	Trauma symptoms reduce relationship satisfaction.  Limitations: Small sample size, no differentiation from general trauma symptoms or PTSD.
Examine association between PTSS, caregiver burden, and psychological adjustment. In spouses of veterans with PTSD. (Calhoun,	Descriptive correlational study: PTSS, Violent behavior, Somatic health problems.	71 male Vietnam combat veterans, seeking treatment for PTSD and their partners. Recruited from prior VAMC study.	<b>SCID: Measure physical symptoms.</b> <b>Mississippi Scale for PTSD: 35 questions</b> <b>Likert scale measuring</b>  <b>CES: Measures wartime stressors</b> <b>CTS: Violent behavior</b>	Partners of patients ( $n = 51$ ) diagnosed with posttraumatic stress disorder (PTSD) experienced more caregiver burden and had poorer psychological adjustment than did	Partners giving care for veterans with PTSD had higher levels of burden and poorer psychological adjustment.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
Beckham, & Bosworth, 2002)			<b>Cook-Medley hostility scale: violent behavior BI = Burden Interview, SC-90</b>	partners of veterans without PTSD ( $n = 20$ ).	
Documenting the consequences of Israeli war veterans' PTSD on partners, partners STS accounting for earlier traumatic events. (Dekel, Levinstein, Siegel, Fridkin, & Svetlitzky, 2016)	Descriptive correlational study. PTSD symptoms, History of Trauma, Life Functioning Boundary Ambiguity,	300 veterans of the 2006 Israel-Lebanon War and female partners	<b>TLEQ: history of trauma. PTSD-I: PTSD symptoms POAMS-TV: Life Functioning BAS : Boundary Ambiguity</b>	Males' PTSD associated with females' ambiguous loss ( $B = .41$ , $Z = 8.50$ , $p < .001$ ), which is associated to female functioning Females life events associated with females' PTSD ( $B = -.015$ , $Z = 2.57$ , $p < .05$ ).	Veteran PTSD associated with partner distress, higher levels of PTSD, and lower levels of functioning and mental health. Symptoms addressed in terms of partner PTSD, despite measuring history of trauma did not control or address it.
To assess effects of ex- POW's PTSD and PTSD trajectory on their wives' marital adjustment, (Levin, Greene, & Solomon, 2016)	Descriptive correlational study. PTSD symptoms Marital adjustment	121 ex-POWs from the YKW and their spouses. Part of a longitudinal study.	<b>PTSD-I: PTSD symptoms DAS: To measure marital adjustment Measures were taken over the course of 17 years.</b>	Wives of ex-POWs with PTSD had less total marital affection and adjustment. No differences were found for cohesion and satisfaction. Wives of ex-POWs with chronic PTSD reported lower marital adjustment.	Limitations: lack of precaptivity assessment, self-reporting measures and lack of assessment of prior traumatization of wives. Conclusions: PTSD symptoms have long term effects on marital adjustment, satisfaction and cohesion.
Identify variables related to partner burden and psychological distress in	Descriptive Correlative study. Veteran-Partner involvement PTSD Symptoms,	89 veterans from outpatient PTSD programs at the Jackson VA Medical Center and the New Orleans VA	PEPS: synthesis of PCL-M, BI, and BSI-18 PCL-M: PTSD symptoms, <b>BI: 22 item self-report</b>	PTSD severity ( $p = .003$ ), partner treatment engagement ( $p = .071$ ), and perceived threat	Limitations: Convenience Sampling, Self-reporting measures, no assessment of premorbid conditions or prior trauma.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
partners of veterans with combat-related PTSD. (Manguno-Mire et al., 2007)	Partner appraisal of threat, Partner treatment engagement, Perceived barriers to partner treatment engagement. Perceived benefits of treatment Partner mental health treatment.	Medical Center with at least four outpatient visits for PTSD treatment from July 2001 through November 2002.  Interviews were performed via telephone at both sites.	<b>on caregiver burden BSI-18: 18 question scale to measure psychological distress over 7 days</b>	( $p = .048$ ) were associated with partner burden. Burden decreased with increased partner self-efficacy ( $p = .034$ ).	Conclusions: Partners of veterans with PTSD show increase in partner burden.
To explore the connection between ST, conflict, coping and marital satisfaction in female spouses during deployment. (Pearce, Garciasalas, & Krantz, 2016)	Descriptive Correlational Study: STS, Marital satisfaction, Coping skills,	81 spouses of deployed veterans recruited from online military forums servicing active duty personnel and families. Online surveys were administered at convenience	STSS – To measure STS PSS-10 - 10 item self-report measure to evaluate stressful events in one month. CSE - 26 item scale to measure confidence in coping skills RPCS - 39 item self-report measure of compromise, avoidance, reactivity, separation, domination and submission in relationships. LWMAT - 15 item self-report to measure marital satisfaction	Participants who scored higher on STSS, scored lower on coping self-efficacy, ( $p < 0.01$ ) higher scores on relational conflict, lower in marital satisfaction ( $p < .01$ )	Online self-report measure, convenience sampling, lack of control for prior traumatization, no notable measure of primary traumatization of deployed service member. Results suggest that higher levels of STSS lead to increased marital strain and relationship problems.



Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
To outline through interview the perspectives of spouses of Veterans returning from combat operations. (Buchanan, Kemppainen, Smith, MacKain, & Cox, 2011)	Descriptive study.	34 spouses of Veterans recruited through a social group for military spouses and a university in southeastern North Carolina	Critical Incidence Response technique.	Two-thirds of the participants reported not having received formal education about Themes outlined 66% of respondents lacked education regarding PTSD. Barriers to treatment included fear and stigma associated with diagnosis, denial of symptoms	Descriptive study, limited sample size, limited structure to interview.  Outlines ongoing themes that supports other studies that show burdens of symptoms on relationships.
To investigate the need for improved aftercare of former peacekeeping soldiers and how they effect those around them. (Dirkzwager, Bramsen, Adèr, & van der Ploeg, 2005)	Descriptive Correlational Design. PTSD symptoms. Sleeping and somatic problems, social support, marital relationship	708 partners and 332 parents of Dutch peacekeepers given mail in surveys.	SRIP- for PTSD symptoms 22 items questionnaire, focused on reexperiencing, avoidance, and hyperarousal. SCL-90: for somatic symptoms and sleep disturbances, Maudsley Marital Questionnaire: 9 question scale to measure marital satisfaction	Partners of peacekeepers without PTSD Symptoms, had less STSS. <b>Spouses of veterans with PTSD symptoms had</b> sleeping and somatic problems, negative social support, and less favorable opinions of their marital relationships. Mothers were more likely to get PTSD symptoms than fathers. Whether parent was living with	Limitations: convenience sampling, lack of control for prior traumatization,  Another review showing stress reactions related to partner symptoms.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
				soldier had no effect on results.	
To investigate the experiences of partners of veterans with PTSD. (Mansfield, Schaper, Yanagida, & Rosen, 2014)	Descriptive case study	252 partners of veterans with PTSD, drawn from a larger study, who responded with comments as part of a larger mail in survey recruited from the Veterans Affairs Pacific Islands Health Care System	Thematic Analysis	Themes identified: Included interactions with mental health service, relationships, partner or family reactions to living with someone with PTSD. Experiences often discussed included the deterioration of the relationship due to living with people who were easy to anger, and emotionally distant leading to isolation, anger, sadness and stress.	Limitations: Only identified themes rather than organizing any sort of correlation or providing more generalizable materials. Convenience sampling, self report, no consistent measurement criteria. Matches experiences as outlined in other studies.
To investigate PTSS and relationships in army couples. (Melvin, Gross, Hayat, Jennings, & Campbell, 2012)	Descriptive Correlational Study. Couple functioning, Coercion, Resilience, PTSS.	66 veteran couples from the US Army, recruited through chain recruitment from military medical facilities near Baltimore and Washington, DC.	PCL: for PTSS CD-RISC 10: to measure Resilience DAS: Functioning WEB: 10 item likert scale to measure coercion and violence TLEQ: Prior trauma.	Higher levels of PTSS associated with lower couple functioning and resilience. ( $z = -2.82, 95\% CI [-0.17, -0.03], p = .005$ )	Limitations: Sample size, convenience sampling. Resilience as a moderating factor explored, somatic and psychiatric symptoms explored. Focused on prior trauma as mediating factor unlike other studies.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
				Individuals with high resilience had higher functioning scores, independent of PTSD symptoms. ( $p = .001$ )	
To develop a measure for partner accommodation to PTSD (Fredman, Vorstenbosch, Wagner, Macdonald, & Monson, 2014)	Descriptive Correlational Study/Measurement Validation. PTSD symptoms, Partner Behaviors, Marital adjustment Depression Anger, Percieved social support.	46 treatment-seeking couples recruited for a study evaluating cognitive-behavioral conjoint therapy for PTSD in Boston VA.	SORTS - self-report measure to assess partner behaviors related to PTSD Symptoms CAPS/PCL/SCID-P – to measure PTSD symptoms. DAS- to measure adjustment MSPSS – perceived social support.	Partner depression ( $\beta = -.55, p = .002$ ), significantly predicted lower partner relationship satisfaction, $F = 8.65, p = .001, R^2 = .29$ . Partner-reported PTSD symptom severity did not significantly predict partner relationship satisfaction ( $\beta = -.12, p = .36, F = 6.03, p = .002$ .)	Limitations: Small sample, lack of caregiver burden scale, Partners' accommodation most often took the form of "tiptoeing" around patient to avoid veteran anger.
To investigate perceived burden in spouses of National Guard/Reserve service members deployed during operations in Afghanistan and Iraq. (Caska & Renshaw, 2011)	Descriptive correlational study: PTSD symptoms (whether clinical or subclinical, or general distress symptoms) Caregiver burden Personality Traits, Coping skills Depression/anxiety	130 spouses of reserve component troops deployed during Operations Enduring/Iraqi Freedom	BI: for caregiver burden PCL: PTSD symptoms DASS: For symptoms of depression/anxiety/stress, GSES: 10 item scale to measure ability to cope with challenges. BFI: Measure of personality traits WOC: Coping skills	Spouses of service members with PTSD symptoms had elevated burden, even if subclinical ( $r$ 's $< .01, p$ 's $> .20$ ) Caregiver burden mediated associations between distress in spouses and service members. (part $r = .47, p < .001$ ) also correlative to	Correlations between service members' symptoms, spouses' psychological distress and spouses' perceptions of burden. Limitations: Self-reporting scale, short term study, no control for prior traumatization of spouses, small sample size.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
				neuroticism.	
To determine symptoms of STS, and effects of demographic and socioeconomic factors in STS in spouses of veterans with PTSD. (Frančičković et al., 2007)	Descriptive correlational study Symptoms of STS, Demographic and socioeconomic factors.	56 wives of war veterans with PTSD. From the Center for Psychotrauma in Rijeka, Croatia.	Modified Indirect trauma questionnaire- 16 item test to measure symptoms of PTSD Demographic surveys.	32/56 wives of veterans had symptoms of STS. Women with STS were married longer were more likely to have STS symptoms. ( $r = 19.1, 13.2$ years, $p = 0.016$ ).	Limitations: Convenience sample, low sample size, no measure of prior trauma. Little validation of measure. Study outlines correlation between STS and exposure to PTSD.
To compare the effects of primary and secondary traumatization in wives of PTSD-diagnosed war veterans and wives of war veterans without PTSD (Klarić et al., 2012)	Descriptive correlational study. PTSS, History of Trauma. Veteran PTSD status.	154 wives whose veteran husbands had been treated in Mostar Clinical Hospital for PTSD.	Demographic questionnaire, HTQ: to measure trauma MINI International Neuropsychiatric Interview.	Wives of veterans with chronic PTSD experienced more traumatic events ( $t = 2.66; p = 0.008$ ) had higher scores of PTSS ( $t = 8.93; p < 0.001$ ). Chronic somatic diseases ( $\chi^2 = 4.553; p = 0.033$ ). met criteria for depression ( $\chi^2 = 20.65; p < 0.001$ ), panic disorder with agoraphobia ( $\chi^2 = 5.28; p = 0.022$ ),	Limitations: Convenience sample, low sample size. Study outlines correlation between exposure to PTSD symptoms and somatic and psychological symptoms.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
				PTSD ( $\chi^2 = 18.39$ ; $ss = 1$ ; $p < 0.001$ ) and generalized anxiety disorder ( $\chi^2 = 19.58$ ; $p < 0.001$ ) and suicidality ( $\chi^2 = 8.95$ ; $p = 0.003$ ).	
To explore depression, anxiety, trauma and alcoholism in partners of veterans. (Murphy, Palmer, & Busuttill, 2016)	Descriptive correlational study. Depression, Anxiety, PTSD, Alcoholism	100 partners of UK veterans who were getting mental health support from the Combat Stress organization who responded to mail surveys. Data collected through questionnaire by mail.	PHQ-9: 9 item scale to measure depression, GAD-7: 7 question assessment of anxiety, TSQ: 10 question scale to assess PTSD AUDIT-C: 3 item scale to assess alcoholism Demographic survey A list of eight potential barriers.	45% of respondents had alcoholism. 39% depression, 37% generalized anxiety disorder 17% PTSD. Partners with mental health problems had higher incidence of reporting barriers to seeking mental health. $p < 0.5$	Limitations: Small sample size, convenience sampling, sample tended to be in longer term relationships, no notable control group outlined.  Outlines symptoms of depression and anxiety associated with PTSD symptoms in spouses of veterans. Higher rate when compared to UK national average.
To assess differences in mental health of partners of war veterans with PTSD from general population (O'toole, Outram, Catts, & Pierse, 2010)	Descriptive correlational design: PTSD in veterans Levels of symptoms of mental illness or drug use in partners.	240 Australian veteran-partner couples from a larger cohort study who responded to survey. Veterans all fought in Vietnam War.	CIDI: to measure mental illness symptoms in partners of veterans CAPS: to assess for PTSD in veterans. Demographic survey	Partners of veterans more likely to see mental health professionals in prior 2 weeks (26.0%; relative prevalence: 1.44; 95% CI: 1.01, 1.87). on medications (75.2%; 1.12; 95% CI: 1.03, 1.20) anxiolytics (6.7%; 2.30; 95% CI: 1.21, 3.38), antidepressants	Unlike other studies, not based on convenience sampling, random sampling from larger cohort study. Large sample group. Conclusions drawn, partners dealing with elevated rates of psychiatric illness up to 30 years after war.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
				(15.1%; 1.94; 95% CI: 1.36, 2.53), hypnotics (9.2%; 1.27; 95% CI: 0.76, 1.77) alcohol use: (17.8%; 1.15; 95% CI: 0.78, 1.77)	
To examine long-term effects of living with a veteran who suffered trauma in war. (Outram, Hansen, MacDonell, Cockburn, & Adams, 2009)	Descriptive qualitative study: Focus group discussions	76 female participants in 10 focus groups from the Partners of Veterans Association support groups New South Wales whose husbands fought in the Vietnam war.	Focus group discussions	Themes identified: Hypersensitivity of husband, lack of intimacy, increased physical and mental health problems, altered sense of self, lack of resources, caregiver burden, and search for understanding.	Limitations: Qualitative study makes generalizability more difficult, sample size drawn from support groups Study suggests caregiver burden as potential source of symptoms.
To establish relationship between STS, disassociation and somatization. (Kianpoor, Rahmanian, Mojahed, & Amouchie, 2017)	.Descriptive correlational design STS Disassociation Somatic symptoms	40 spouses of veterans with PTSD from Iran/Iraq war living in Zahedan city in Iran drawn from foundation databases seeking assistance	STSS: for STS SDQ-20: 20 question scale for somatic symptoms DES: 28 item scale for Disassociation Experience, derealization, absorption, Amnestic Dissociation, Imaginative involvement.	67.5%: STS 64.86% high severity dissociation (0.532, $p < 0.01$ ) 27.02% somatization (0.449, $p < 0.01$ )	Limitations: Smaller sample size, no control for prior trauma in spouses. Relationship between PTSD, somatic and dissociation symptoms found. Correlation between levels of distress and veterans and partners.

*Note.* BAS = Boundary Ambiguity Scale; BI = Burden Inventory; BSI-18 = Brief Symptom Inventory-18; CAPS = Clinician Administered PTSD Scale; CD-RISC 10 = Connor-Davidson Resilience Scale; CES = Combat Exposure Scale; CIDI = Composite International Diagnostic Interview; CSE = Coping Self-Efficacy Scale; CTS = Conflict Tactics Scale; CV = Combat Veteran; DAS = Dydactic adjustment scale; DES = Dissociative Experience Scale; GAD-7 = General Anxiety Disorder assessment; HTQ = Harvard Trauma Questionnaire; ILW = Israel-Lebanon War; KMS = Kansas Marital Satisfaction scale; LEC-

5 = Live Events Checklist for DSM-5; LFS = Life Functioning Scale; LWMAT = Locke-Wallace Marital Adjustment Test; MASQ = Mood and Anxiety **Symptom** Questionnaire; MHI = Mental Health Inventory; OIF = Operation Iraqi Freedom; PAI = Parenting Alliance Inventory; PCL-C = PTSD Checklist Civilian Version; PCL-M = PTSD Checklist Military Version; PEPS = Partner Experiences with PTSD Survey; PHQ-9 = Patient Health Questionnaire; POAMS-TV; Psychotherapy Outcome Assessment and Monitoring System—Trauma Version; POW = Prisoner of war; PPTSD-R = **Purdue Post-Traumatic Stress Disorder Scale—Revised**; PSS-10 = Perceived Stress Scale-10; PTG = Posttraumatic Growth; PTG-I = Posttraumatic Growth Inventory; PTSD = Posttraumatic stress disorder; PTSD-I = Posttraumatic Stress Disorder Inventory; PTSS = Posttraumatic stress symptoms; RPCS = the Romantic Partner Conflict Scale; SCL-90 = Symptom Checklist 90; SDQ-20 = Somatoform Dissociation Questionnaire SF-36 = Medical Outcomes Short-Form Health Survey; SRIP = Self-Rating Inventory for PTSD; ST = Secondary traumatization; TIPI = Ten Item Personality Inventory; TLEQ = Traumatic Life Events Questionnaire; **TSC-40 = Trauma Symptom Checklist—40**; **TSQ = Trauma Symptom Questionnaire**; WEB = Women's Experience of Battery; YKW = Yom Kippur War

Table 2

*Secondary Posttraumatic Stress Disorder in Other Populations*

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
To assess STSD symptoms in a sample of trauma therapists and its relationship to temperament traits and aspects of social support. (Rzeszutek, Partyka, & Gołąb, 2015)	Descriptive Correlational Study: Variables: STS Behavioral characteristics (sensory sensitivity, briskness, perseveration, emotional reactivity, endurance, activity)  Social support.	80 trauma therapists working with people after various kinds of traumatic events; the most prevalent were family violence and abuse, sexual assault, road accidents, and death of a close person. Participants' selection criteria encompassed having a master's degree in clinical psychology and a professional license in trauma therapy.	PTSD Questionnaire: Factorial Version (PTSD-F) 30 items, three scales, as identified: intrusion/arousal (15 items), avoidance/numbing (15 items), a global scale (all items) Formal Characteristics of Behavior-Temperament Inventory (FCB-TI) 120 items test measuring six subscales: briskness, perseveration, sensory sensitivity, emotional reactivity, endurance and activity. BSSS: measure social support.	Emotional Reactivity $F = 9.64, r = .33, p < .001$ , Sensory Sensitivity $F = 9.06, r = .45, p < .001$ , Perceived Support $F = 8.87, r = .51, p < .001$ Emotional reactivity correlated to STS Sensory sensitivity and perceived social support negatively associated with STSD symptoms. These variables addressed 26% of variance in STSD symptoms.	Limitations: No assessment of prior distress, unable to establish causal relationship due to all assessments being done simultaneously, limited sample size.  Supports the idea of correlation between emotional reactivity and STSD, negative correlation between emotional reactivity and negative association. Limited differences based on type of work and demographic information suggesting temperament may be large factor unstudied.
To test the relationship between exposure to disturbing media images and STS.	Descriptive correlational study: Exposure to disturbing media, STSD, Turnover	28 federal LEOs who investigate child pornography cases.  Setting not discussed. Surveys administered by	Demographic measures to assess background and exposure to media.  STSS: for STSD symptoms	Higher than average STSD (36.11 mean vs 29.5),  Time with media correlated with STSD	Limitations: Limited information regarding subject demographics, no control for prior traumatization,



Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
(Perez, Jones, Englert, & Sachau, 2010)	intentions, Burnout,	supervisors, returned by mail.	MBI-GS: for burnout 3 question scale for turnover intentions Open ended questions for effects on family and life.	( $r = .39, p < .05$ ), time from first exposure correlated with STSD ( $r = .40, p < .05$ ) and with cynicism ( $r = .40, p < .05$ ). Correlation between turnover intentions and STSD ( $r = .51, p < .01$ ), exhaustion ( $r = .47, p < .05$ ), and cynicism ( $r = .47, p < .05$ ). Social support mediating factor STSD ( $r = -.50, p < .01$ ), exhaustion ( $r = -.49, p < .01$ ),	Burnout connected to length of time working with traumatic materials.
To assess prevalence of STS in emergency nurses. (Dominguez-Gomez & Rutledge, 2009)	Descriptive study: STSD symptoms, Demographic information,	67 emergency nurses from three general community hospitals in Southern California	STSS: for STSD symptoms Demographic Questionnaire	15% no STS 32.8% all 3 criteria. 60% 1+ intrusion symptom 56% 2+ arousal symptoms. Lower scores for men, participation in stress management, and education. STSS scores and age correlated ( $r = 0.78$ ) Years in nursing, hours worked per week no correlation.	Limitations: Geographically limited, not random selection, self-reporting measures, no measure of exposure to trauma, assumed exposure to secondary trauma but not measured. Study gives baseline measure of expression of STS in ER nurses.

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
To study symptoms of STS in Emergency Room Clinicians. (Roden-Foreman et al., 2017)	Descriptive Correlational Study: Variables included: Demographics: age, gender, race, ethnicity, marital status, provider type, time in position and whether job was in trauma center. Big 5 Personality traits: (Openness, Resilience: Trauma History, STS symptoms.	Convenience sample of 118 EM providers (Physicians, NPs and PAs) from 10 hospitals in Texas. Setting: Anonymous survey during EM staff meetings July – November 2015.	STSS: To measure symptoms of burnout and STS including hyperacuity, re-experiencing and avoidant behavior. TIPI: 10 item measures of Big 5 Personality Types. CD-RISC 10: 10 item Likert scale measures resilience. LEC-5 = 17 measure scale that assesses exposure to traumatizing events, to rule out PTSD.	12.7% had STS. 33.9% had one symptom of STS. Low resilience/ history of personal trauma associated with STS. Spending $\geq 10\%$ of time with trauma patients. Gender and personality traits not associated with higher STS.	Notes: EM providers have shorter exposure times to individual patients, have less of an opportunity to develop a prolonged relationship compared to spouses. Increased time can lead to increased risk, although the correlation is not strong. Limitations: Different population, increased risk, no measure of prior trauma.
To explore correlation between burnout and STS in SANE nurses. (Townsend & Campbell, 2009)	Descriptive correlational design.  program structure, program goals relationships with community training; burnout, STS and organizational support. secondary trauma.	Experienced nurses from a random selection of 110 SANE programs between December 2002 and 2003,	Structured interview. MBI-GS: For burnout. STSS: for STS A five-path model was used to associate the variables to outcomes of burnout and STS.	Correlation on 5 paths suggest connection between STS and burnout. Peer support, satisfaction with compensation, SANE-only facilities, age, and education had protective factors against burnout /STS. 25% of nurses interviewed had symptoms of STS, $p < .01$ ,	Organization level factors contribute to STS and burnout, similarities between burnout and STS suggest similar processes, but differences in variations suggest differences in process. Limitations: Only one nurse from each program interviewed, only experienced nurses, limiting experiences of newer nurses, limiting

Purpose	Design & Key Variables	Sample & Setting	Measures	Results	Conclusions, Limitations, Notes
					generalizability regarding time of exposure and STS.
To examine factors associated with burnout and STS among forensic interviewers of children. (Perron & Hiltz, 2006)	Descriptive cross sectional survey. STSS symptoms Burnout, Organizational satisfaction Time interviewing/ caseload	66 forensic interviewers affiliated with advocacy centers in the US.	OLBI- 15 item instrument to measure burnout through disengagement and exhaustion. STSS: for STSD SOS: for organizational satisfaction GSE: 4 point scale to measure coping	More time exposed to forensic interviewing, higher on the disengagement ( $t(57) = 1.98, p = .053$ ), no differences in exhaustion ( $t(43.4) = 1.62, ns$ ) secondary trauma ( $t(56) = .57, ns$ )  >2 years work, higher disengagement scores ( $t(57) = 2.78, p = .007$ ), no change in STS/Exhaustion	Little correlation found between nature of work, STS, Exhaustion or Burnout. Limitations: Low sample size, little measure for prior trauma, no confirmatory factor for OLBI at time of study.

*Note.* BSSS = Berlin Social Support Scales; CD- RISC 10 = Connor-Davidson Resilience Scale; EM = Emergency Medical; GSE = General Self Efficacy Scale; LEC-5 = Live Events Checklist for DSM-5; LEO = Law Enforcement Officer; MBI-BG = Maslach Burnout Inventory-General Survey; OLBI = Oldenburg Burnout Inventory; PTSD-F = PTSD Questionnaire: Factorial Version; SANE = Sexual Assault Nursing Examiners; SOS = Satisfaction with Organization Scale; STSS = Secondary Traumatic Stress Scale; TIPI = Ten Item Personality Inventory

## APPENDIX B

### PROPOSED TOOL FOR ASSESSMENT

Interviewers should assess their clients regarding their experiences over the previous 4 weeks. Make note of frequency of symptoms.

In the past month client:

1. Felt Emotional Numbness	
2. Had an increase in heart rate when thinking about partner	
3. Felt as if they were reliving trauma of their partners	
4. Had repeated difficulty sleeping, with either less than 6-8 hours sleep per 24-hour period or repeated interruptions in sleep not due to external stimuli	
5. Felt discouragement about their future	
6. Was upset by reminders of partner or partner's experience	
7. Had little interest in being around others or in previously enjoyed activities.	
8. Felt easily startled or increasingly "jumpy"	
9. Was less active than normal for them	
10. Had intrusive thoughts that were difficult to push from mind.	
11. Had problems with concentration	
12. Avoided people, places or things that reminded them of their partner.	
13. Had repeated, disturbing dreams about partner	
14. Wanted to avoid their partner	
15. Was more easily annoyed or felt irritable with or without external stimuli	
16. Expected "something bad to happen"	
17. Has gaps in memory about time with partner.	
18. Found they were preoccupied with helping spouse	
19. Has difficulty finding time to separate caregiving of partner with other personal plans.	
20. Had strong negative beliefs about themselves or other people.	
21. Had trouble experiencing positive feelings.	
22. Felt "super alert" or "on guard"	
23. Has shown increase in risk taking behavior including things that could cause them harm.	
24. At any point in personal history, has there been exposure to traumas as listed on the next page?	

Listed below are several difficult or stressful things that sometimes happen to people. For each event indicate if: (a) it happened directly to client; (b) client witnessed it happening to another; (c) client learned about event occurring to close family member or close friend; (d) client was exposed to experience as part of job; (e) client uncertain if experience fits criteria; or (f) event did not occur to client.

Client should be certain to consider entire life (growing up as well as adulthood) throughout the list of events.

1. Natural disaster such as flood, hurricane, tornado, earthquake, etc.	
2. Explosion or fire.	
3. Accident with transportation such as car or boat accident, plane crash, train wreck, etc.	
4. Serious accident at home, work or while engaged in recreational activity	
5. Exposure to dangerous chemicals, radiation or other toxic substance	
6. Physical assault and/or battery without a weapon.	
7. Physical assault and/or battery with a weapon.	
8. Sexual assault such as rape, attempted rape, or sexual act due to threat of harm or force.	
9. Any other uncomfortable or undesired sexual experience	
10. Exposure to war-zone or combat, either as civilian or in military.	
11. Involuntary captivity such as being kidnapped, abducted, held hostage or held prisoner.	
12. Illness or injury that was life-threatening.	
13. Exposure to severe human suffering	
14. Sudden violent death through suicide or homicide.	
15. Sudden death of another by accident	
16. Serious harm, injury, or death they caused to another	
17. Any other stressful experience or event not listed above.	

(adapted from Weathers, Blake et al., 2013)

APPENDIX C  
LETTERS OF PERMISSION

**FOOTHILLS PSYCHOLOGICAL SERVICES, INC.**

13193 Central Ave. Suite 200  
Chino, CA 91710  
Phone: (909) 902-9111  
Fax: (909) 902-9199

954 W. Foothill Blvd. Suite A  
Upland, CA 91786  
Phone: (909) 946-4222  
Fax: (909) 946-8243

To whom it may concern:

I understand and hereby give permission for DNP student William David Glasser to engage in research activities at Foothills Psychological Services. I understand that providers who work at Foothills Psychological Services will be interviewed in a group setting, on site, for purposes of education and feedback regarding a screening tool that Mr. Glasser is adapting. Providers will not be forced to take part in this research but will have opportunity as they desire.

We understand that field notes will be kept on site and have provided a secure area for this to happen. We also know that interviews will occur on site, and will provide space for these interviews to occur.

We welcome the opportunity to take part in this study and look forward to seeing the project work towards completion.



Sincerely,  
Terry Chase, PH.D.  
Clinical Psychologist  
PSY11141



To whom it may concern:

I understand and hereby give permission for DNP student William David Glasser to engage in research activities at Haven Psychological Associates. I understand that the providers who work at Haven Psychological Associates will be interviewed in a group setting, on site at Foothills Psychological Services for purposes of education and feedback regarding a screening tool that Mr. Glasser is adapting. Providers will not be forced to take part in this research. They will have every opportunity to engage as desired on a personal basis.

I look forward to seeing progress on this project, and look forward to taking part in having us take part in the study.

Sincerely,

A handwritten signature in black ink that reads "Gerald Duprez PhD". The signature is written in a cursive style.

Gerald Duprez, PhD,  
Lic No# 12020



**APPENDIX D**  
**INTERVIEW GUIDE**

1. Have you had any experiences with spouses or partners of veterans with PTSD?
2. What experiences with partners of veterans with PTSD might affect your use of a screening tool?
3. Can you assess whether the tool would be easy to use?
4. What psychological parameters do you feel are most indicative of vicarious traumatization, secondary traumatic stress reactions or Secondary Traumatic Stress Disorder?
5. Could you suggest anything that might be missing from the tool?
6. What about the screening tool do you feel will allow for more precise diagnosis and treatment?
7. Do you feel that the tool allows for adequate differentiation between general stress symptoms and secondary traumatization?
8. Is it fair to say that each psychological parameter is listed and addressed in the screening tool?
  - History of traumatization
  - Exposure to individuals with PTSD
  - Intrusive thoughts
  - Avoidant behavioral symptoms
  - Hyperacuity and sensitivity to surroundings
  - Symptoms of general distress
9. Tell me about the things that I may need/want to know about screening tools or other assessment systems you may have used in the past.
10. Tell me about how you currently treat or deal with partners of veterans with PTSD.
11. Is there any other information or feedback you feel would be worth sharing?



## APPENDIX E

### REVISED ASSESSMENT TOOL

If the clinician discovers that their client has had prolonged contact with a spouse with PTSD during assessment interview, then questionnaire will open with the following conditional questions. Interviewers should assess their clients regarding their experiences over the previous 4 weeks. If the answer to any question is Yes, then further assess using supplementary questions.

In the past four weeks the client:

1. Had exposure to an individual with PTSD, or a history of trauma as outlined If so, review the questions on page 2.	
2. Had intrusive thoughts that were difficult to push from mind. (If no, go to 3)	
a. Expected “something bad to happen”?	
b. Had repeated, disturbing dreams about partner	
c. Found they were preoccupied with helping spouse	
d. Had difficulty finding time to separate caregiving of partner with other plans	
e. Had strong negative beliefs about themselves or other people.	
3. Have begun to avoid or withdraw from certain situations (if no, go to 4)	
a. Have gaps in memory about time with partner.	
b. Had little interest in being around others or in previously enjoyed activities.	
c. Was less active than normal for them	
d. Wanted to avoid their partner	
e. Avoided people, places or things that reminded them of their partner.	
4. Have moments of feeling “on guard” or more “alert” (if no, go to 5)	
a. Had repeated difficulty sleeping, with either less than 6-8 hours sleep per 24-hour period or repeated interruptions in sleep not due to external stimuli	
b. Was upset by reminders of partner or partner’s experience	
c. Had problems with concentration	
5. Felt increased distress, anxiety or depression (if no, then assessment is complete)	
a. Felt discouragement about their future	
b. Had trouble experiencing positive feelings.	
c. Was more easily annoyed or felt irritable with or without external stimuli	

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event indicate if: (a) it happened directly to client; (b) client witnessed it happening to another; (c) client learned about event occurring to close family member or close friend; (d) client was exposed to experience as part of job; (e) client uncertain if experience fits criteria; or (f) event did not occur to client.

Client should be certain to consider entire life (growing up as well as adulthood) throughout the list of events.

1. Natural disaster such as flood, hurricane, tornado, earthquake, etc.	
2. Explosion or fire.	
3. Accident with transportation such as car or boat accident, plane crash, train wreck, etc.	
4. Serious accident at home, work or while engaged in recreational activity	
5. Exposure to dangerous chemicals, radiation or other toxic substance	
6. Physical assault and/or battery without a weapon.	
7. Physical assault and/or battery with a weapon.	
8. Sexual assault such as rape, attempted rape, or sexual act due to threat of harm or force.	
9. Any other uncomfortable or undesired sexual experience	
10. Exposure to war-zone or combat, either as civilian or in military.	
11. Involuntary captivity such as being kidnapped, abducted, held hostage or held prisoner.	
12. Illness or injury that was life-threatening.	
13. Exposure to severe human suffering	
14. Sudden violent death through suicide or homicide.	
15. Sudden death of another by accident	
16. Serious harm, injury, or death they caused to another	
17. Any other stressful experience or event not listed above.	

(adapted from Weathers, Blake et al., 2013)