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Secondary Traumatic Stress in Intimate Partners and Children of Service Members

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CERTIFICATE OF APPROVAL

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This is to certify that the Clinical Research Project of

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Abstract

This literature review addresses secondary traumatic stress (STS) in intimate partners and children of service members. More specifically, this literature review aims to explore if intimate partners and children of military service members are at risk for developing secondary traumatic stress. Secondly, this review aims to explore if there are specific risk factors associated with the development of secondary traumatic stress in intimate partners and children of service members. Finally, this review examines if there are other stressors and outcomes for intimate partners and children of service members. A systematic review of peer-reviewed research was explored to accomplish addressing the above aims. Results of this review indicate that some intimate partners of service members develop STS. Due to a lack of research, it is unclear if children of service members are likely to develop STS. This review did identify several general risk factors across populations for developing STS and PTSD. This review also identified mental health outcomes other than STS that intimate partners and children of service members may face. Limitations of this review include limited research on STS in intimate partners and children of service members, methodological shortcomings of reviewed studies, and studies reviewed not accounting for or not gathering sufficient information about trauma experiences not related to military services. General clinical implications include treatment recommendations for family focused treatment, utilizing protective factors, STS, and psychological distress for intimate partners and children of service members. Recommendations for future research include studies on STS in children of service members, expanding the diversity of participant samples (i.e., non-heterosexual couples, female service members, racially inclusive), and government organizations, such as Veterans Affairs, utilizing family focused treatment approaches.

SECONDARY TRAUMATIC STRESS IN INTIMATE PARTNERS AND CHILDREN OF SERVICE MEMBERS

DEDICATION

I dedicate this work to my family, friends, and all the ones that have supported me throughout this journey. Thank you all for your endless love, support, laughs, sacrifices, and prayers.

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CHAPTER I: INTRODUCTION AND HISTORY OF POSTTRAUMATIC STRESS DISORDER AND SECONDARY TRAUMATIC STRESS

This literature review will explore secondary traumatic stress in intimate partners and children of service members. This review also aims to explore risk factors and other mental health concerns loved ones of service members may face. Additionally, to adequately review the above, the history of trauma, the history of posttraumatic stress disorder (PTSD), and secondary trauma stress (STS) will be reviewed for various clinical populations.

In 2003, The National Comorbidity Survey Replication (NCS-R) reported the lifetime prevalence of posttraumatic stress disorder (PTSD) among individuals in the United States 18 years of age and older was 6.8% (Kessler et al., 2005). In 2005, the estimated prevalence of PTSD in the U.S. population totaled approximately 9.7%, where it was identified that 1.8% of men and 5.2% of women suffered from PTSD (Kessler et al., 2005). Kilpatrick et al. (2013) explored the prevalence of PTSD among the American population as defined by the American Psychiatric Association's (2013) *Diagnostic and Statistical Manual 5th ed*. (*DSM-5*; American Psychiatric Association, 2013) and *Diagnostic and Statistical Manual* 4th ed. (*DSM-IV*; American Psychiatric Association, 1994) and identified that an estimated 89.7% of adults were exposed to at least one potentially traumatizing event (Kilpatrick et al., 2013). While there have not been any relevant studies identifying PTSD in children and adolescents, research has indicated that children and adolescents exposed to traumatic events have a higher prevalence of PTSD than adults in the general population (Gabbay et al., 2004). Service members, such as military personnel, are at a particularly high risk for PTSD and other trauma-related symptoms (Gabbay et al., 2004). Additionally, research has identified various risk factors for PTSD in service members. These risk factors include gender, low education, ethnic minority status,

cumulative length of deployment, previous trauma exposure, frequency of experiencing a traumatic event, and seeing a victim assaulted (Xue et al., 2015). Zerach et al. (2017) found that the most common and prominent outcome of war and war-related was PTSD. PTSD rates, ranging from 16% to 18%, has been indicated in samples of former prisoners of war (Rintamaki et al., 2009; Solomon et al., 1992.). Researchers have also identified that traumatic events could bring about long-term consequences for the direct victims and their significant others (Zerach et al., 2017).

It is important to discuss the expansion of PTSD within the *DSM-IV/DSM-IV-TR* and *DSM-5*. PTSD involves extreme distress and disruption following exposure to a traumatic event. The *DSM*-5, the latest version of the *DSM*, breaks down the diagnostic criteria of PTSD into symptom categories A-H. Criterion A, the "gatekeeper" criterion, specifies one must experience one of the following: direct exposure, witnessing the trauma, learning that a relative or close friend was exposed to trauma, or experience indirect exposure to trauma (i.e., professional duties such as medics and first responders. Criterion B outlines re-experiencing symptoms (i.e., nightmares, flashbacks, emotional and physical distress), criterion C identifies avoidance symptoms, criterion D details symptoms of negative feelings or thoughts that worsen following the trauma, criterion E gives symptoms of arousal and reactivity (i.e., hypervigilance, difficulty sleeping), criterion F specifies the symptoms must persist at least one month following the trauma, criterion G identifies functional impairment, and criterion H indicates the symptoms must not be due to another illness (American Psychological Association, 2013).Criterion A of PTSD was referred to as "the gatekeeper" criterion throughout the versions of the *DSM* because it refers to exposure to a traumatic stressor, which has been consistent since PTSD was introduced in the *DSM-III (*American Psychiatric Association, 1987*)*, which has had the greatest

impact on how the prevalence of PTSD is identified. The role of a "gatekeeper" in the *DSM*, such as criterion A of PTSD, is to signify who does and who does not have a PTSD diagnosis. This gatekeeper function of criterion A of PTSD can also impact services and support received by individuals as it often differentiates those who have PTSD and those who do not have PTSD (Levin et al., 2014).

In the *DSM-5,* several changes were made to the diagnostic criteria for PTSD when compared to earlier *DSM* versions of PTSD. One notable change was to criterion A, the event criterion. The *DSM-5* specifically refers to those who have been indirectly exposed to traumatic events (i.e., through traumatic exposure and to repeated exposure to aversive trauma details). While the *DSM-5* has made indirect exposure to trauma a potential criterion A trauma of PTSD, there continues to be a gap particularly regarding explicit and implicit knowledge about the trauma experiences of others (Horesh, 2016).

Regarding a trauma being identified as a direct or indirect trauma, previous research has supported that direct exposure to trauma is a predictor of experiencing more serious symptoms of PTSD (Anders et al., 2011; Levin et al., 2014). However, a growing body of research has indicated that indirect exposure to traumatic events, such as learning about a traumatic death related to military combat, to terrorism, or to a natural disaster are predictors of PTSD symptoms based on criteria outlined in the *DSM-5* (Levin et al., 2014). During the creation of the *DSM-5*, there was controversy in carrying over indirect trauma from *DSM-IV*/*DSM-IV-TR*. Some argued that the introduction of indirect trauma in the *DSM-IV* caused a bracket creep, in which the number of eligible individuals for a PTSD diagnosis expanded (McNally, 2009). Breslau and Kessler (2001) conducted a study reviewing the impact of the traumatic stressor criterion on estimates of exposure and PTSD in a community sample. The researchers reported a 59%

increase in trauma events from *DSM-III* to *DSM-IV*, which resulted in a 38% increase of PTSD diagnoses when *DSM-IV* criteria were applied compared to *DSM-III* criteria. The *DSM-IV*/*DSM-IV-TR* described types of trauma exposure as "experienced, witnessed, or was confronted with" (American Psychiatric Association, 1994, p. 467; Pai et al., 2017), in which the terminology "confronted with" was in reference to indirect exposure to trauma via close associates. However, this terminology has since been removed from the definition of trauma in the *DSM-5*. The *DSM-IV*/*DSM-IV-TR* was not specific if "confronted with" related to exposures in a person or if media reports could constitute a witnessed exposure (*DSM-IV TR*; Pai et al., 2017). As previously discussed, the *DSM-5* included indirect trauma as, "an actual or threatened death of a family member or friend" (p. 467). Additionally, the work group for *DSM-5* expanded indirect exposure by adding criterion A4, which specified "repeated or extreme exposure to aversive details of the traumatic event(s)" (p. 272) and provided examples of law enforcement repeatedly exposed to details about child abuse or first responders collecting human remains (American Psychiatric Association, 2013). Despite these findings, one study found that this transition in the definition of indirect exposure from *DS*M-*IV* to *DSM-5* led to a 6% to 7% decrease in the rate of PTSD diagnoses when Criterion A was identified as an indirect exposure.

In the "Prevalence" section of PTSD within the *DSM-5*, there is a reference indicating that rates of PTSD are even higher among veterans compared to those whose profession increases their risk of traumatic exposure such as firefighters, emergency personnel, and police (American Psychiatric Association, 2013; Levin et al., 2014). Levin et al. (2014) found that, while unclear in the *DSM-5*, the expansion of indirect exposure to the criterion is suggestive that therapists, social service workers, public defenders and legal professionals, prosecutors, and judges who frequently encounter details of domestic violence and crime scene details of

homicide could develop PTSD. Levin et al. (2014) also noted that previously such indirect responses to trauma have been labeled as secondary traumatic stress (STS) or vicarious trauma (VT), which have been made distinct from PTSD, particularly prior to the *DSM-5.* STS and VT will be defined and further discussed in the following chapter. Overall, it is important to review the changes and expansion of PTSD throughout the *DSM* to best understand what is classified as a trauma and to best understand PTSD and STS.

History of PTSD

To understand STS, it is pertinent to provide an overview of the history of PTSD. PTSD was not formally recorded until 1980 by the American Psychiatric Association (APA) and was added to the *DSM-III*. However, there have been descriptions of similar disorders documented for over 4,000 years. Prior to the use of the official term PTSD, war-related trauma has been associated with terms such as *soldier's heart*, *war neurosis*, and *shell shock* (Crocq & Crocq, 2000). Early literature described a significant proportion of military-related casualties as psychological (i.e., witnessing death leading to chronic psychological symptoms). The *Epic of Gilgamesh*, the first major poem known to humankind, references what we now know as PTSD symptoms. Moving throughout history, in the late 1700s and early 1800s, during the French Revolutionary and the Napoleonic wars, soldiers were observed to collapse and become frightened when shells would brush past them. During the Industrial Revolution, the first civilian-made disasters took place outside of the battlefield. World War I originated the term shell shock based on soldiers describing symptoms such as nightmares, confusion, fatigue, and terror (Crocq & Crocq, 2000).

Regarding the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*), the handbook published by the American Psychiatric Association to diagnosis psychiatric illness, the

DSM-I and the *DSM-II* recognized disorders related to severe stressors; however, these disorders were not defined as PTSD (American Psychiatric Association, 1952; American Psychiatric Association, 1987). For example, the *DSM-I*, established in 1952, provided a diagnosis of gross stress reaction disorder, which was found in the personality disorders section. This diagnosis was described as "severe physical demands or extreme emotional stress associated with combat or civilian catastrophe" (American Psychiatric Association,1952). This diagnosis was intended to be temporary until a more conclusive diagnosis could be determined. The *DSM-II*, established in 1968, eradicated the gross stress reaction disorder but included a disorder of adjustment reaction of adult life, which could be found in the transient situational disturbances section (North et al., 2016). This disorder was described as, "an acute reaction to overwhelming environmental stress" (North et al., 2016, p. 198). Stressors that applied to the disorder consisted of but were not limited to military combat, unwanted pregnancy, or receiving a death sentence. Neither *DSM*-I nor *DSM-II* gave diagnostic criteria or symptoms for gross stress reaction or adjustment reaction of adult life (North et al., 2016). In 1980, the *DSM-III* formally introduced the term posttraumatic stress disorder. The introduction of PTSD into the *DSM-III* highlighted that, from a diagnostic and theoretical perspective, the etiology of PTSD was identified as something that happens outside of an individual rather than as an inherent weakness (i.e., traumatic neurosis; Friedman, 2013). The name PTSD has remained consistent throughout the *DSM*, including the current version, the *DSM-5* (North et al., 2016). Since the development of the diagnosis of PTSD in the *DSM-III*, one defining and constant feature of PTSD has included symptoms presenting after a trauma. While hallmark features of PTSD have been continuous throughout various versions of the *DSM*, the definition of symptom cluster A, also known as Criterion A, (i.e., the traumatic stressor/event) has fluctuated (North et al., 2016). In Table 1 and Table 2 below,

definitions, examples of trauma, and criteria for PTSD are outlined. The tables are arranged in the order that the diagnostic criterion for PTSD is presented in the *DSM*. It is of note that the criteria for PTSD in the *DSM-IV* and the *DSM-IV-TR* are identical; therefore, the material is presented together.

Table 1

Overview of Posttraumatic Stress Disorder criteria in DSM-III through DSM-5

	DSM-III	***DSM-III-R***	***DSM-IV and DSM-IV-TR***	***DSM-5***
Trauma Definition	**A.** Recognizable stressor that would evoke significant symptoms of distress	**A.** Trauma outside the range of usual human experience that would be markedly distressing to anyone. Trauma involves serious threat to life or physical integrity. Not included: physical trauma.	**A1.** Traumatic event involving actual or threatened death or serious injury or a threat to physical integrity **A2**. Intense fear, helplessness, or horror (in children, may be expressed by disorganized or agitated behavior)	**A.** Traumatic event involving actual or threatened death, serious injury, or sexual violence
Exposure Criteria and Trauma Examples	Natural disaster, accident (i.e., airplane crash, fire, automobile accident with injury) Deliberate incident (rape, assault, bombing, torture, military combat) **Excludes**: bereavement, loss of business, marital discord, or chronic illness	Natural disaster, accident, deliberate incident (bombing, torture, death camp, rape, assault, military combat) **Excludes**: bereavement, loss of business, marital discord, or chronic illness	**Experienced directly**: Military combat, violent assault, kidnapped, hostage, terrorist attack, torture, prisoner of war, concentration camp, natural or man-made disaster, severe automobile accident; being diagnosed with a life-threatening illness (only in *DSM-IV*) **Witnessed**: Violent assault, accident, war, or disaster, or unexpectedly witnessing a dead body or body parts	**Experienced directly**: Military combat, violent assault, kidnapped, taken hostage, terrorist attack, torture, prisoner of war, concentration camp, natural or man-made disaster, severe automobile accident, sudden and catastrophic medical incident **Witnessed**: Threatened or serious injury, unnatural death, physical or sexual abuse of another person, medical catastrophe (e.g.,

			Via close relative/friend: Violent personnel assault, serious accident, unexpected death; life-threatening disease of one' child	life-threatening hemorrhage) **Via close relative/ friend**: Incidents that are violent or accidental: assault, suicide, serious accident or injury, unnatural death **Repeated/ extreme trauma**: First responder collecting human remains; police officer repeatedly exposed to details of child abuse

Table 2
Other criteria for Posttraumatic Stress Disorder in DSM-III through DSM-5

	DSM-III	***DSM-III-R***	***DSM-IV and DSM-IV-TR***	***DSM-5***
Clinical Significance/ Impairment	None	None	**F**. Clinically significant distress or impairment in functioning	**G**. Clinically significant distress or impairment in functioning
Exclusion Criteria	None	None	None	**H.** Not attributed to the physiological impacts of a substance or another medical condition
Special Criteria	None	None	None	Special criteria for children 6 years old and younger
Specifiers/ Subtypes	**Acute**: less than 6 months for symptom onset after trauma and duration of symptoms less than 6 months **Chronic**: Duration 6 months or greater **Delayed**: Symptom onset equal to or greater than 6 months after trauma	**Delayed**: Symptom onset greater than or equal to 6 months **Acute/ Chronic**: No description given	**Acute**: Duration less than 3 months **Chronic**: duration greater than3 months **Delayed**: Symptom onset greater than six months after trauma	**With dissociative symptoms**: (Derealization, depersonalization) **Delayed Expression**: Does not meet full diagnostic criteria until more than 6 months after the trauma

Table 1 and Table 2 provide an overview of changes, consistencies, and additions from the *DSM-III* to the *DSM-5*. As previously identified, one consistency throughout the diagnostic criteria for PTSD in the *DSM* is the conditional definition of a diagnosis of PTSD being based

upon linking symptoms to exposure to a trauma. However, there have been several notable differences between the diagnostic criteria for PTSD between the *DSM-III* and the *DSM*-5. First, the *DSM-III-R* and *DSM-IV/DSM-IV-TR* included threat to "physical integrity" as part of the definition of a Criterion A trauma. In the *DSM*-5, Criterion A defines "traumatic" to mean "actual or threatened death, "serious injury, or "sexual violence." (American Psychiatric Association, 2008, p. 274; North et al., 2016). There were also changes made between the *DSM-IV/DSM-IV TR* and *DSM-5*'s definition of a life-threatening illness. The *DSM-IV/DSM-IV-TR* specified that a life-threatening illness included any life-threatening illness such as terminal cancer, a life-threatening illness in one's child, or indirect exposure of a loved one with a life-threatening illness if sudden and unexpected. The *DSM-5* defined life-threatening illness as direct exposure to medical illness and sudden catastrophe such as anaphylactic shock or awakening during surgery. Criterion A has also changed throughout versions of the *DSM*, most notably, *DSM-5* including a list of exposure categories (i.e., direct experience of a traumatic event and witnessing a trauma; American Psychiatric Association, 2013; North et al.). In addition to Criteria A changing throughout various versions of the *DSM*, other symptom criteria have changed as well. The breakdown and number of symptoms other than symptom cluster have also differed across editions of the *DSM*. This change in criteria and symptom cluster is noted in the table above. North et al. (2016) noted that one important observation when reviewing the history of the evolution of PTSD in the *DSM-5* is the instability of symptom criteria evident by the expansion of the number of symptoms across *DSM* editions, meaning it had been difficult to compare the prevalence of PTSD throughout the years. Additionally, it is important to highlight the most recent version of the *DSM-5* suggests that in specific cases, indirect exposure to trauma may meet diagnostic criteria for PTSD. The *DSM-5* specifies that indirect exposure to repeated

or extreme, aversive details of the event(s) that involved actual or threatened violence or accident can lead to PTSD (American Psychiatric Association, 2013).

Indirect Exposure to Trauma

As the *DSM-5* highlighted, one may experience symptoms of PTSD when indirectly exposed to trauma. Within trauma literature, several terms have been identified related to indirectly being exposed to trauma and thereafter experiencing symptoms. The first term to be discussed is vicarious trauma (VT), which was first introduced by Pearlman and Saakvitne (1995). The researchers defined VT as, "transformation in the inner experience of the therapist that comes about as a result of empathic engagement with clients' trauma material" (Pearlman & Saakvitne, 1995, p. 31). The researchers described VT as a profound shift in worldview in helping professionals after engagement with individuals who have experienced trauma. Predominate symptoms of VT were described as a disturbance in the therapist's "cognitive frame, identity, world view, and spirituality . . . affect tolerance, fundamental psychological needs, deeply held beliefs about self and others, interpersonal relationships, internal imagery, and . . . physical presence of the world" (Pearlman & Saakvitne, 1995, p. 280). Pearlman and Saakvitne further explained that VT symptoms may include intrusive imagery responses and other PTSD-like symptoms that cause disruption to therapists' imagery system of memory, which creates painful experiences of emotions and images associated with clients' traumatic memories. Rauvola et al. explained that VT can be described as a more pervasive and longer-lasting shift in a caregiver's inner experience due to disrupted beliefs about themselves, their relationships, and the world. Rauvola et al. (2019) reported a common example of someone experiencing VT may be a high school teacher working at a disadvantaged school in a disadvantaged neighborhood with at-risk and marginalized adolescents. The teacher may learn or

witness from the students of physical abuse or hear stories of crime and extreme poverty from students. Through these repeated experiences, the teacher may begin to develop a view of the world that is not just and develop a loss of their sense of meaningfulness or hope regarding their work or society (Rauvola et al., 2019).

Vicarious trauma is distinguished from STS and compassion fatigue, which are more acute phenomena. A second term popular in trauma literature is STS, which was developed in the 1990s by two trauma specialists, Beth Stamm and Charles Figley. They defined STS as experiencing an indirect trauma and experiencing symptoms similar to PTSD. Figley (1983) stated STS was the emotional distress one endures by having close contact with a trauma survivor, particularly family members. Figley and Kelber (1995) reported STS symptoms are acute and are nearly identical to PTSD, but the trauma was not directly experienced. Rauvola et al. (2019) provided an example of STS as a nurse who witnesses or hears about a patient's gruesome and traumatic near-death injury. The nurse may begin to experience PTSD-like symptoms related to the patients' traumatic experience.

Furthermore, the concept of "burnout" was incorporated within the theoretical base of STS to encompass the exhaustion of providing ongoing care to individuals who are the primary trauma victims (Figley et al., 1995). Utilizing Kahill's five categories of symptoms, Figley described the concept of burnout as including physical, emotional, behavioral, work-related, and interpersonal symptoms (Figley, 1995; Kahill, 1988). STS symptoms include avoiding the traumatic event, negative changes in mood and thoughts, and changes in arousal after learning of the traumatic event (Rauvola et al., 2019).

Compassion fatigue was originally developed by Joinson (Rauvola et al., 2019) to describe burnout in nurses. Compassion fatigue has been described as an acute phenomenon in

which high levels of stress by caregivers are endured and where symptoms of PTSD are present (i.e., hyperarousal, avoidance, sleep disturbances; Figley, 1995). Compassion fatigue is often described as being characterized by emotional and physical exhaustion, a change in ability to feel empathy for those being cared for and for loved ones, as well as for co-workers (Rauvola et al., 2019). In most definitions, compassion fatigue is viewed as a multi-dimensional construct and composed of both burnout and STS (Stamm, as cited by Rauvola et al., 2019). When defining compassion fatigue, researchers usually rely more heavily on one dimension over the other (i.e., either STS or burnout; Rauvola et al., 2019).

In the literature, the distinction between VT and compassion fatigue is clear. However, the distinction between compassion fatigue and STS is not clear. Some research conceptualizes STS as being synonymous with compassion fatigue (i.e., Figley, 1983), while other literature describes compassion fatigue as a component of STS that is prompted either immediately or progressively. For example, a police officer may be exposed to trauma and develop PTSD-like symptoms or a police officer who is exposed to repeated secondhand traumas over time may become desensitized to trauma, experience empathy decrements, and experience PTSD-like symptoms (Rauvola et al., 2019).

Burnout seems to be a better-developed construct than both VT and STS (Maslach, 1982). The term burnout was first used by psychologists in occupational stress literature. Burnout was coined to describe emotional consequences related to work for individuals in the human service and mental health fields who work closely with other people's problems (Maslach, 1976, 1982, 1987). Maslach (1982) provided the most widely used construct of burnout and defined it as:

> a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do people work of some kind . . . response to the chronic emotional strain of dealing extensively with other human beings, particularly when they are troubled or having problems. . . . A pattern of emotional overload and subsequent emotional exhaustion is at the heart of the burnout syndrome. (Maslach, 1982; p. 3)

With burnout, a person gets overly involved emotionally, overextends themself, and feels overwhelmed by the emotional demands imposed by other people (Maslach, 1982). Maslach (1982) further explained that the work environment and emotional exhaustion lead to withdrawal.

In sum, there are various theoretical definitions what describe indirect exposure to trauma to include VT, STS, burnout, and compassion fatigue. VT is characterized by a profound shift in worldview for those who work in helping professions. STS occurs following exposure to indirect trauma with symptoms similar to PTSD. Burnout describes the exhaustion one experiences after providing ongoing care to trauma victims and is often seen as part of the theoretical base of STS, and compassion fatigue is an acute phenomenon characterized by emotional and physical exhaustion and a decrease in the ability to feel empathy for others when providing care for others.

Purpose of the CRP Literature Review

Combat-related PTSD affects approximately 11% to 20% of veterans (Reisman, 2016). Therefore, loved ones of these individuals suffering from PTSD, such as intimate partners and children of military personnel, are at risk for exposure to indirect trauma. Understanding the mental health struggles and needs of intimate partners and children of service personnel,

particularly regarding secondary traumatic stress, will bring awareness to the symptoms and prevalence of STS and provide relevant information to consider in establishing clinical practice guidelines for intimate partners and children of military personnel. The purpose of this CRP literature review is to provide an update in the field for STS and summarize risk factors for the development of STS in intimate partners and children of service members who have PTSD or symptoms related to exposure to trauma. Finally, this review will discuss symptoms other than STS that intimate partners and children of service members with PTSD may face. The current literature review examined the following questions:

1. Are intimate partners and children of service members at risk for STS?
2. What are the risk factors for developing STS in intimate partners and children of military service members?
3. What are the mental health outcomes, disorders, and symptoms in intimate partners and children of military service members other than STS symptoms?

Research Procedure

A systematic review of peer-reviewed psychological and scientific journal publications and book chapters was completed regarding STS in intimate partners and children of service members. The databases ProQuest and EBSCO were predominately used to gather information for this literature review. Publications and books were examined concerning information addressing whether individuals in intimate relationships with service members are at risk for STS, if there are specific risk factors that put intimate partners and children of service members at an increased risk of STS, and articles addressing other mental health outcomes and treatment implications relating to intimate partners and children of military service members who have

symptoms of trauma. In addition to journal articles and books, conference presentations and dissertations were used to gather supporting information.

Concepts and Terms Defined

For the purpose of this literature, the definition of PTSD was defined per individual studies, as the definition of PTSD has fluctuated throughout various versions of the *DSM* as previously discussed. When PTSD was referred to outside of the context of a specific study, it was defined based on the *DSM*-5. As previously discussed, the *DSM-5* characterized PTSD as experiencing an event involving death or the threat of death such as combat exposure, sexual assault, a natural disaster, or a car accident. Symptoms include avoidance of the traumatic event, negative changes in mood and thoughts after the experience of the event, and changes in arousal after the traumatic event (American Psychiatric Association, 2013). For this literature review, STS is defined as developing symptoms of PTSD due to having a close, empathic bond and relationship with an individual with PTSD or symptoms of traumatic stress. STS mimics the symptoms of PTSD. A service member is a former or current member of the armed services, not limited to the United States Armed Forces. An intimate partner is a spouse or significant other with whom the military service personnel lives. A child is considered a biological or adopted infant, adolescent, or adult of a military service member.

Organizing Principals

Military service members are at an increased risk for PTSD compared to the general population. Additionally, there is extensive research regarding PTSD in military service members. There is also a large body of research on distress due to indirect trauma exposure. However, there is limited research on the prevalence of STS in intimate partners and children of military service members. This literature review first addresses whether intimate partners and

children of service members are at risk of developing STS. Once this question is explored, this review evaluates whether specific risk factors place intimate partners and children of service members at an increased risk of developing STS. Finally, this review explores the mental health outcomes, other psychological disorders, and other symptoms that intimate partners and children of military service members may face.

CHAPTER II: SECONDARY TRAUMATIC STRESS IN INTIMATE PARTNERS AND CHILDREN OF SERVICE MEMBERS

Secondary traumatic stress (STS), the reaction to indirect exposure to traumatic events, was first documented as prevalent in helping professions. STS affects the personal as well as professional lives of individuals it impacts (Figley, 1995). STS is a particular concern in healthcare fields such as emergency medicine and humanitarian response efforts (Whitt-Woosley & Sprang, 2018). Cieslak et al. (2013) conducted a meta-analysis reviewing STS in various occupations. It was reported that 15.2% of social workers, 16.3% of oncology staff, 19% of substance abuse counselors, 20.8% of providers of treatment for family or sexual violence, 32.8% of emergency nurses, 34% of child protective service workers, and 39% of juvenile education workers reported experiencing STS according to the Secondary Traumatic Stress Scale (Bride et al., 2004) developed based on the *DSM-IV* diagnosis of PTSD (Bride, 2007; Bride et al., 2004, Choi, 2011; Dominguez-Gomez et al., 2009; Quinal et al., 2009; Smith Hatcher et al., 2011). Some studies reported that professionals in helping fields may experience only mild STS symptoms that are not clinically significant (Elwood et al., 2011). In contrast, other studies have indicated that those in helping professions reported more moderate to high levels of STS or PTSD due to indirect trauma exposure (Zimering et al., 2006).

Indirect Exposure to Trauma in Various Clinical Populations

While there has been less research on physician-level providers, Warren et al. (2013) conducted a study on STS on 113 surgeons in various specialties who treated trauma patients. The researchers assessed symptoms of PTSD utilizing the Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) to gather trauma related symptoms reported by surgeons who treated trauma patients. The researchers also assessed resilience in surgeons utilizing the Connor-

Davidson Resilience Scale 10-item version (Connor & Davidson, 2003). Their findings indicated that 28 surgeons who treated trauma patients expressed at least one symptom of STS (i.e., intrusion, avoidance, and/or arousal symptoms), and 22% reported clinical levels of PTSD (Warren et al., 2013). Additionally, researchers identified the degree of exposure to trauma patients was similar between surgeons presenting with and without PTSD symptoms (p = 0.2177). Surgeons who reported higher resilience scores were associated with lower STS scores ($r = -0.369$, $p < 0.0001$). Finally, researchers found that surgeons who met symptom criteria for PTSD exhibited significantly lower resilience scores (31 vs. 34, $p < 0.0001$; Warren et al., 2013).

Roden-Foreman (2017) researched STS in emergency medicine clinicians. Researchers examined the prevalence, risk factors, and protective factors of STS in 118 emergency medicine clinicians working in 10 various hospitals in Texas. Emergency medicine clinicians consisted of physicians, nurse practitioners, and physician assistants. Emergency medicine clinicians were assessed with the Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) to gather information on reported trauma related symptoms. Participants were asked to complete the questionnaire about their clinical work with traumatized clients. The Ten-Item Personality Inventory (Gosling et al., 2003) was also completed by participants to gather information about their Big Five personality traits of Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. Clinicians' resilience was measured with the 10-item Connor-Davidson Resilience Scale (CD-RISC 10; Connor and Davidson, 2003). Clinicians' exposure to trauma was assessed with the Life Events Checklist- 5th Edition (Weathers et al., 2013). The mean age of clinicians were 40 years old; 70% of the sample was male, 73% of the sample were physicians, 98% reported they were non-Hispanic, 87% reported they were Caucasian, and 75% identified as married. Authors of the study reported that of the 118 emergency medicine clinicians, 12.7%

reported clinically significant levels of STS based on reporting symptoms from the *DSM-IV* PTSD criteria symptom clusters B, C, D, and E. Additionally, 19.5% of the clinicians screened positive for STS based on the STSS. One third of the participants reported indicated they experienced at least one symptom cluster based on the *DSM-IV* diagnostic criteria of PTSD at a clinically significant level. Factors that were not associated with higher STSS scores include being female and scoring high on Neuroticism, identifying a work-related trauma exposure, and a history of working at a trauma center. Additionally, individuals in this study scored lower on STS symptoms compared to other studies utilizing the STSS. The researchers hypothesized this difference may be due to short duration of emergency medicine. For example, emergency medicine clinicians may not form a long-term and empathic relationship with their patients like other providers might such as surgeons and psychologists. Several limitations were noted for the study, including that the study consisted of a cross-sectional cohort design, measures used in the study did not gather information about an index trauma event, and the convenience sample used in this study may have been too small to achieve sufficient power. Strengths of the study include a high participant response rate and a sample that was recruited from various hospitals which likely helped reduce biases (Roden-Foreman (2017).

Craun et al. (2014) researched the prevalence of STS in federal law enforcement over a 3-year period. Researchers measured STS scores, coping styles, perceptions of the work environment, and subject demographics. STS was measured utilizing the Secondary Traumatic Stress Scale (Bride et al., 2003) and coping styles were measured with the COPE scale (Carver et al., 1989). Researchers found that STS scores are fairly stable over time. Several coping mechanisms and characteristics were found to either increase or decrease STS. Factors that increased STS scores were coping with denial more often in the previous year, having a more

sedentary lifestyle (i.e., engaging in a low level of exercise per week), an increase in alcohol or tobacco consumption over the past year, having higher social desirability scores, reporting an increase in difficulty on the job, and frequency of exposure to disturbing interactions. Factors that decreased STS scores included reporting higher supervisory support, more use of social support, and high coworker support. Factors that did not impact STS included all deputy demographic variables, alcohol usage that did not increase, not drinking alcohol or use of tobacco. A strength of this study included that it is one of the first studies to measure STS over time in a law enforcement population. Limitations of the study included participants being volunteers who could decline to participate at any time during the study. Therefore, those participants who did not participate may have identified different factors that contributed to STS over time. Additionally, the sample was limited in diversity as participants were mostly white men. Overall, this research provides insight into factors that can contribute and decrease STS symptom from a time based prospective. (Craun et al., 2014).

People who continually interact with trauma victims could develop STS. When people are exposed to traumatic events, these experiences have the tendency to change people's views about the world (Figley, 1995). Syed and Saeed (2017) explored STS, burnout, and demographic characteristics with compassion satisfaction among rescuers (i.e., first responders that were firefighters or paramedics). Compassion satisfaction is the pleasure that results from serving other people. The researchers identified that rescuers, who are pre-hospital providers (i.e., first responders), may also experience STS. Specifically, Syed and Saeed explored the impact compassion satisfaction has on developing STS. The researchers conducted a cross-sectional survey that consisted of 185 male rescuers with a mean age of 33 years old. Rescuers were either firefighters or paramedics and had been working in the field for a minimum of one year.

Participants were assessed with the Professional Quality of Life Scale (PROQOL; Stamm, 2009) to gather information on demographics, compassion satisfaction, secondary traumatic stress, and burnout. The researchers found that compassion satisfaction is positively correlated with STS. Variables that predicted compassion satisfaction consisted of age group (43% below 30 years and 57% 30 years and above), marital status (35% single, 65% married), secondary traumatic stress, burnout, socioeconomic status (99.5% middle, .5% high), and nature of job (54% paramedics, 46% firefighters). The authors concluded that there was a significant relationship between compassion satisfaction, STS, and burnout in rescuers. Compassion satisfaction was a significant predictor based on age group, marital status, socioeconomic status, living area, and STS and burnout. Limitations of the study were identified by researchers as a restricted sample size and a lack of gender diversity in the sample (Syed & Saeed, 2017).

Adolescents

Researchers have identified that children may experience impacts from indirect exposure to trauma, but research has been limited. Yazdani et al. (2014) studied the severity of exposure to traumatic events and vicarious trauma (VT) in adolescents. The researchers defined VT as experiencing trauma symptoms following being indirectly exposed to traumatic events. Adolescents in the study were drawn from a purposive sample. Adolescents were 14 to 17 years old with a mean age of 15 years old and attended private schools in Karachi, Pakistan. Participants' demographic information was gathered via an outcome questionnaire derived by researchers. The outcome questionnaire also included nine items that asked about exposure to indirect or direct trauma events. Trauma related symptoms were measured with the Impacts of Events Scale-Revised (IES-R; Weiss & Marmar, 1997) based on the *DSM-IV*. The IES-R assesses trauma related symptoms of intrusion, hyperarousal, and avoidance. Adolescents who

reported direct exposure to trauma were excluded from the study. Researchers reported that 42% of adolescents were indirectly exposed to traumatic events such as target killings, gang wars, and terrorist attacks. Additionally, 6% of participants endorsed indirect exposure to natural disasters and 27% reported indirect exposure to air crashes. The study concluded that 54% of these adolescents experienced moderate symptoms (i.e., intrusion, hyperarousal, and avoidance symptoms) relating to being indirectly exposed to trauma. This study supported that adolescents were at risk of developing PTSD symptoms through indirect exposure to traumatic events. Researchers concluded that the prevalence of vicarious trauma in the study indicates that adolescents are experiencing trauma related symptoms such as anxiety and distress that is disturbing to them. A limitation of the study that was noted is that the study consisted of data being gathered through self-report measures which may be subject to error (Yazdani et al., 2014).

Indirect Exposure to Trauma in Service Members

Cragun et al. (2016) studied military health care providers and the impact of combat deployment on compassion fatigue. The nonexperimental cross-sectional study consisted of a convenience sample of 105 total active duty and civilian emergency medicine workers (i.e., 30 technicians, 42 nurses, and 33 physicians) recruited from the San Antonio Military Medical Center. Exclusion criteria for the study consisted of civilian employees who had no previous military experience. Participants were assessed with the Professional Quality of Life V survey (ProQOL V, 2010) which assesses compassion satisfaction, burnout, and STS. Of the participants, 11 technicians had previously been deployed, 16 physicians were previously deployed, and 20 nurses were previously deployed. Results indicated there were not statistically significant differences between active duty and civilian emergency medicine workers based on

being deployed or not being deployed. Similarly, there were not significant differences among ProQOL V scores between those who had been deployed and those who had not been deployed. The mean burnout rate for those who had been previously deployed was 18.9 ($p = 0.134$) and compassion satisfaction was 39.0 for participants who had not been deployed and 37.2 for participants who had been previously deployed ($p = 0.919$). Data was analyzed with multiple regression analysis for the three raw scores which indicated that neither had professional nor deployment status indicated a significant association with STS, burnout, or compassion fatigue.

In conclusion, the Cragun et al (2011) study did not find any relation between previous deployment status on the ProQOL V. The researchers hypothesized that one potential reason for no differences between deployment status is that emerging medicine providers are prepared to cope with the stress that comes with trauma related health care service. Authors identified several limitations of the study. First, there was no demographic data collected; therefore, those variables could not be assessed. Second, the sample in the study is likely not a representative sample as they all worked at one military treatment hospital. Additionally, there was not any data collected on the total numbers or length of previous deployments for participants nor was the data collected on participants' deployment location or circumstances. Finally, it is possible the sample size of the study was too small as there was a trend noted for higher burnout with STS and lower compassion satisfaction; however, these trends did not reach statistical significance (Cragun et al., 2011).

Levy et al. (2011) researched rates of operational and counseling stress exposure, symptoms of PTSD, compassion fatigue, and posttraumatic growth (i.e., positive psychological change experienced after high levels of psychological distress) in US Air Force chaplains who were previously deployed. The study was comprised of 414 Air Force Chaplains who completed

survey questionnaires. Chaplins' trauma related symptoms were assessed with the PTSD Checklist, Military Version (PCL-M; Weathers et al., 1993). Posttraumatic growth was assessed with the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). Researchers assessed compassion fatigue utilizing the Compassion Fatigue subscale from the Professional Quality of Life Scale (ProQOL; Stamm, 2009). Operational and counseling stressors were assessed with rationally derived measures created by the authors. Chaplains reported the most common operational stressor was seeing disfigured or wounded military service members as well as receiving incoming fire, potentially experiencing both direct and indirect trauma. Chaplains reported the most frequent and of high magnitude counseling experiences were providing counsel to seriously injured or dying military members as well as suicidal military members. The mean PCL-M score for chaplains was 27.51, and 7.7% of chaplains reported clinically significant symptoms of PTSD. Data showed that exposure to counseling and operational stressors were significantly associated with PTSD symptom scores based on the PCL-M. Additionally, exposure to stressors relating to counseling as well as operational stressors were shown to be related to compassion fatigue ($F = 5.71$; $p = .004$). Chaplin's scores on the PTGI were negatively correlated with the PCL-M and positively associated with the stress of counseling exposure ($F = 6.68$; $p = .002$). Finally, further analysis conducted with hierarchal multiple aggression revealed that operational stressors were the only predictor of the symptom severity of PTSD (Levy et al., 2011).

In conclusion, Levy et al. (2011) found that while Air Force chaplains reported various high-magnitude counseling experiences, they did not report high levels of compassion fatigue. Researchers explained that this may be due to the chaplains' resilience to occupational and caregiver stress. Researchers did find that exposure to operational stress predicts symptom

severity of PTSD in US Air Force Chaplains. The authors of the study noted limitations to include the use of self-report measures, using rationally derived measures to assess the chaplains' exposure to operational and counseling stress, and using a cross-sectional study design. Regarding self-report measures, participants may have underreported symptoms of compassion fatigue; however, potentially unreported symptoms may have impacted Air Force chaplains as well as their work (Levy et al., 2011).

Secondary Traumatic Stress in Intimate Partners and Children of Service Members

Intimate Partners

Caspi et al. (2010) conducted a study examining the impact Bedouin women faced when they lived with husbands who were exposed to military-related traumatic events. Participants in the study consisted of a community sample of 129 Bedouin women and their husbands who served in the Israel Defense Forces. Researchers gathered their sample from a northern village in Israel, where recruiters for the study went door to door. If the men agreed to participate in the study, based on cultural norms, recruiters for the study then asked the men permission to interview their wives. For the study, men were interviewed in Hebrew and women were interviewed in Arabic, which was the preference identified by the men and women. The researchers who interviewed the women in the study were blind to men's survey responses and the diagnostic information gathered about the men. The study utilized clinical interviews and the self-report measure of traumatic experiences outlined by *the DSM-IV-TR* Criterion A1 to gather information. Per self-report, women were asked to identify their financial status, and women and men both identified their traumatic experiences. For the purpose of this study, traumatic experiences were drawn from a list of 13 events outlined by *DSM-IV-TR* Criterion A1. In addition to the outlined events, women were also asked a question regarding having been

intimately touched against their will, and men were asked about having experienced life-threatening events while in the military.

The husband's psychiatric functioning was assessed with the Structured Clinical Interview for Axis I *DSM-IV* Disorders (First and Gibbon, 2004) to gather diagnostic information in relation to their mental health. This measure was translated to Hebrew. The husbands' diagnostics were divided into three categories: PTSD, other *DSM-IV-TR* diagnosis, or no diagnosis. Wives were asked a series of questions about their husbands' aggression in the past 6 months. The Screen for Posttraumatic Stress Symptoms (SPSS; Carlson, 2001), a 17-point self-report instrument, was administered to wives and husbands to assess for trauma symptoms within the last 2 weeks; however, no specific trauma event was identified for this rating scale. Couples were also asked to complete the Hopkins Symptom Checklist (HSCL-25; Derogatis et al., 1974), a self-report measure consisting of 25 items consisting of two scales measuring anxiety and depression. The total score for the scale is reported as a measure of depression in the study (Caspi et al., 2010).

Regarding participants, the average age of wives was 31, with a mean of 10 years of education and a mean of 3.5 births. The average for wives' self-report financial status was between good and fair. The average age of husbands was 35, with an average of 12 years of education and 8 years of military service. The study found that 20% of Bedouin wives had husbands who met *DSM-IV-TR* diagnostic criteria for PTSD. Of these men, 8% had comorbid mental health concerns such as alcohol abuse and depression. Of the Bedouin wives, 15% were married to men who did not meet diagnostic criteria for PTSD; however, they did meet *DSM-IV-TR* diagnostic criteria for other disorders such as major depressive disorder, alcohol abuse, and

generalized anxiety. The majority of wives (65%) were married to men who did not qualify for any diagnoses.

Wives and husbands endorsed their most traumatic experiences being the sudden death of a close relative or friend, followed by wives endorsing a near-death experience of someone and husbands reporting a near-death experience related to military events (Caspi et al., 2010). The only variable with a significant difference between groups of wives was financial status. Husbands who had a diagnosis of PTSD had wives who reported a poorer financial status than husbands who did not have PTSD. Among the variables for husbands, less education was shown to significantly correlate with husbands having a PTSD diagnosis. Additionally, husbands who reported experiencing combat-related trauma were more likely to have a PTSD diagnosis compared to husbands who did not experience active combat. There were also significant differences in wives' severity of symptoms of PTSD, depression, and somatic complaints. Specifically, wives whose husbands had PTSD reported they (i.e., wives) experienced significantly more severe symptoms of trauma compared to wives whose husbands who did not have PTSD. However, there were no differences between wives' severity of PTSD symptoms when husbands had either PTSD or another *DSM* diagnosis. Additionally, wives' perceptions of their husbands' aggression were significantly associated with husbands' diagnostic status. Husbands who reported PTSD also were perceived by their wives to display significantly more severe aggression levels than those with another *DSM* disorder or no diagnosis. There were no significant differences of wives' perception of husbands' level of aggression found between the other *DSM* and no diagnosis groups. Researchers further analyzed the data by using Pearson correlations between all predictor variables as well as wives' outcomes. Husbands' diagnosis of PTSD was significantly correlated to wives' symptom variables as well as wives' perception of

husbands' aggression, which also correlated with wives' symptom variables. Husband's symptoms variables significantly and positively were correlated all variables, except wives' reported traumatic events they had experienced. When financial status and trauma exposure of both wives and husbands were controlled for in a hierarchical regression analysis, results showed that predicting wives' symptoms of posttraumatic stress indicated that wives' and husbands' exposure to trauma were strong and positively correlated with wives' trauma symptoms. Accounting for these variables showed that husbands' PTSD diagnosis was positively and significantly correlated with wives' scores on the PTSS. When husbands' aggression was included as a variable in the hierarchical regression, results indicated that the trauma expose of both wives' and husbands was a significant predictor of wives' symptoms of posttraumatic stress. Researchers also further explored wives' HSCL-25 scores using hierarchal regression analysis. The results indicated that husbands' and wives' exposure to trauma and husbands' aggression were significant predictors of wives' severity of depressive symptoms. Regression analysis also showed that husbands' trauma exposure was the only significant predictors of wives' somatic complaints. Sobel tests were utilized to explore husbands' aggression mediating the relationship between husbands' symptoms of traumatic stress, emotional and somatic distress, and depression. The results indicated the relationship between husbands' PTSD and wives' symptoms of posttraumatic stress, somatic distress, and depression was significant and mediated by husbands' aggression (HSCL-25 $z = 4.03$, $p < .000$), and somatic complaints $z = 4.23$, ($p < .000$). Further data analysis with hierarchical regression showed that intercorrelation was displayed between husbands' posttraumatic stress symptoms ($r = .85$, $p < .001$), and their HSCL-25 scores ($r = 45$, $p = < .001$) and wives' trauma related symptoms based on the STSS ($r = .25$, $p < .001$). Furthermore, husbands' aggression mediated the effect of husbands'

posttraumatic stress severity and their endorsement of severity of depression ($z = 3.92$, $p < .001$, and $z = 4.16$, $p < .001$).

The author's concluded that wives whose husbands suffered from PTSD exhibited higher symptoms of PTSD, depression, and somatic concerns compared to wives whose husbands had other no diagnosis or other diagnoses. Husbands who experienced *DSM* diagnoses had more severe symptoms of PTSD and depression and higher aggression reported by their wives than husbands with no diagnosis. Researchers also concluded that aggression exhibited by husbands mediated the relationship between husbands' symptoms of PTSD and wives' somatic and emotional symptoms. The authors indicated that there were several limitations to the study. First, they reported the sample lacked generalizability due to a small sample size. Second, the cross-sectional design of the study was a limitation, as only retrospective reports were available. Finally, the authors acknowledged that the wives' reports of husband aggression could have been impacted by wives' distress. Not ruling out other possible reasons why wives may be experiencing PTSD symptoms (i.e., childhood trauma) could also have been a limitation to the study (Caspi et al., 2010). While this study concluded that wives of soldiers exhibited distress, particularly if their husband had PTSD, the study did not specifically demonstrate that wives' symptoms of STS were due to their husbands combat exposure. For example, wives could experience symptoms of general distress due to other factors, such as living with a family member who has PTSD, and failure to differentiate the source of distress is an additional limitation of the study.

Dirkzwager et al. (2005) examined the prevalence of STS in partners and parents of Dutch peacekeeping soldiers. This study consisted of 1,476 peacekeepers. The peacekeepers were an average age of 32, one-third of the participants were single, and 12% held a high school

education. The peacekeepers were from various branches of the Royal Netherlands military service. Sixty percent were peacekeepers of the Royal Netherlands Army, and 30% were a part of the Navy. On average, the peacekeepers were studied 6.6 years after their deployment. Intimate partners of peacekeepers were almost all female (99%). Their average age was 32 years old, 61% of the intimate partners knew the peacekeepers prior to their deployments, and 91% of partners lived together when the study took place. Regarding parents, 60% were female, the average age of parents was 54 years old, and 88% of parents lived with peacekeepers prior to deployment.

Measures utilized in the study were questionnaires that consisted of questions relating to PTSD symptoms based on the *DSM-IV*, sleep and somatic concerns, and social support. One specific questionnaire used was the Self-Rating Inventory for PTSD (SRIP; Lang, 2004), which was administered to peacekeepers, peacekeepers' partners, and peacekeepers' parents. Several of these measures were adapted for this study as they were translated to Dutch. There was no specific trauma identified for the measure. Sleep and somatic concerns were measured with an adapted version of the scales from the Symptom-Checklist-90 (Derogatis and Lipman, 1977) to identify the severity of sleeping problems and somatic problems. Partners' marital relationship quality was measured with an adaptation of the Maudsley Marital Questionnaire (Crowe, 1978). Social support for parents and partners of peacekeepers was measured with an adaptation of the Social Support Questionnaire (Revenson et al., 1983). Finally, partners and parents were given a list of stressful and traumatic events and asked to note which of these they experienced within the past 12 months.

Chi-square testing and *t*-tests were used to explore results. Of the partners of peacekeepers, 558 did not meet *DSM-IV* diagnostic criteria for PTSD, 71 partners of

peacekeepers met one diagnostic criterion for PTSD, 39 partners of peacekeepers met two criteria for PTSD, and 28 partners of peacekeepers meet all three criteria signifying PTSD. Of the parents of peacekeepers, 239 did not meet any diagnostic criteria for PTSD, 38 parents met one criterion for PTSD, 25 parents of peacekeepers met two criteria for PTSD, and 27 parents of peacekeepers met all three criteria indicating PTSD. Partners of peacekeepers who endorsed experiencing other stressful life events in the past 12 months were examined as covariates in the study. Death of a family member or another important person and a decline in financial position were the only two symptoms significantly correlated with partner symptoms. Regarding parents of peacekeepers, the gender of the parent and whether the parent was living with the peacekeeper at the time of the study were included as covariances.

There was a significant main effect identified for peacekeepers' symptoms of PTSD ($F = 2.60$; $p < .01$). In relation to partners of former peacekeepers, there were no significant effects identified for death of a loved one or decline of a financial position. For peacekeepers who endorsed one, two, or three of the symptom criteria for PTSD, their partners reported less social support than partners of peacekeepers who did not endorse any symptoms of PTSD.

Limitations of the study included not being able to rule out partners' and parents' symptoms of PSTD potentially being due to other traumas. That is, the origin of partner, parent, and peacekeeper trauma was unclear as it is unclear if family members of peacekeepers suffer from PTSD symptoms due to the peacekeeper's trauma or as a result of experiencing other traumas. It also could not be ruled out whether partner's symptoms of PTSD predated their relationship with peacekeepers, meaning it was unclear if another trauma or peacekeepers' PTSD was contributing to partner symptoms. Other limitations of the study included limited generalizability as only one third of the family members in the study responded, meaning it is

possible that a selection bias took place, thus limiting who the results may be generalized to. For instance, peacekeepers who perceived their family members to be more supportive may have been more inclined to participate, leaving those with dysfunctional relationships underrepresented (Dirkzwage et al., 2005). Dirkzwage et al.'s (2005) study appears to be in line with previous research in which various studies have reported that spouses or intimate partners of military personnel may be subject to experiencing symptoms of trauma (Dirkzwage et al., 2005; Riggs et al., 1998; Solomon et al., 1992).

Lahav et al. (2015) utilized a longitudinal study to research the directionality between posttraumatic stress symptoms and attachment insecurities in service members. Participants were gathered from a longitudinal study assessing war captivity of former POWs and their wives (Dekel & Solomon, 2006; Ein-Dor et al., 2012). The participants in the longitudinal study consisted of 85 POWs and their wives and a comparison group of 72 veterans who had not been POWs and their wives. The current study consisted of the same veterans in longitudinal study. The first group consisted of Yom Kippur War veterans who participated in active combat but did not identify as ex-POWs. The second group consisted of veterans who were ex-POWs. The wives were divided into three groups: wives of ex-POWs with PTSD, wives of ex-POWs without PTSD, and wives of combat veterans without PTSD. Data from veterans were gathered three times (1991, 2003, and 2008-2010). Data from the veterans' wives were collected two times (2004 and 2010). The authors of the study defined attachment anxiety as the degree to which individuals worry that significant others will be unavailable in times of need. They defined PTSS as occurring after exposure to secondary trauma (i.e., learning of a loved one's trauma).

The wives' ages ranged from 43 to 79 years old, and their duration of marriage to their spouses was from 2 to 60 years. The independent variables were split into two groups or three

groups (e.g., based on the group the veterans were in), and the dependent variable was PTSS and attachment insecurities.

To assess for symptoms of PTSD, both the wives and their husbands were given the PTSD Inventory (PTSD-I; Solomon et al., 1993), a measure consisting of 17 self-report items. The items on the questionnaire are consistent with the *DSM-IV-TR* diagnostic criteria for PTSD. When the wives filled out the PTSD-I, they were instructed to rate their symptoms in relation to their spouses' experience of combat or captivity. Additionally, the wives completed the Adult Attachment Scale (Mikulincer et al., 1990), a measure of attachment insecurities that is a 12-item self-report measure assessing anxiety, attachment, and avoidance. The questions address how one's parents behaved during childhood and parental relationships with each other (Lahav et al., 2015). The study results indicated that wives of ex-POWS experienced higher symptoms of traumatic stress compared to the group of wives of the combat veterans and ex-POWs who did not have PTSD. Additionally, the study showed that the higher the attachment insecurity in wives of ex-POWs and the control group wives (i.e., wives of combat veterans), the higher their posttraumatic stress symptoms. The study results also found that the severity of the husband's PTSD was associated with elevated levels of PTSS among wives. In sum, the study found that wives of ex-POWs scored higher for PTSS than control wives. There was no difference between groups for attachment insecurities. Wives of ex-POWs with PTSD had significantly higher scores on the PTSD-I than wives of ex-POWs without PTSD and control wives.

The authors reported several limitations of the study. First, the authors identified that they did not gather pre-existing risk factors from the wives' lifetime mental health. Second, the PTSD and attachment insecurity measures were based on self-report, which are subject to biases. There were no data collected regarding the attachment insecurities or mental health of wives prior to

their husband's captivity or immediately after. These factors prevented the researchers from controlling for psychopathology and attachment insecurities prior to their exposure to their husband's combat trauma or captivity. The authors outlined several future implications for study, including exploring the implication of attachment in the development and maintenance of posttraumatic stress symptoms for individuals who experience secondary trauma (Lahav et al., 2015).

Children of Service Members

Beckham et al. (1997) researched psychological pathology in children of Vietnam war veterans who were diagnosed with PTSD. Male veterans seeking care at Veterans Affairs who reported a significant and sustained relationship with their children were asked to voluntarily participate in the study. Demographic information was gathered from veterans upon their initial clinic visit. A diagnosis of PTSD was derived from a standardized self-report measure, as well as the PTSD component of the Structured Clinical Interview for *DSM-III-R* (SCID; Spitzer et al., 1998) or the Clinical Administered PTSD Scale- Diagnostic Version (CAPS-1; Blake et al., 1995). Veteran's combat exposure was assessed with the Mississippi Scale for combat-related PTSD (Keane et al., 1988) and the Combat Exposure Questionnaire (Keane et al., 1989). Veterans' PTSD severity was assessed with the PK scale of the Minnesota Multiphasic Personality Inventory (MMPI-2; Keane et al., 1984). Veterans were assigned a PTSD diagnosis if they had at least one combat experience and were rated by a clinician as having PTSD based on the SCID. Veteran's children were assessed with a survey via mail that included the MMPI-2, a demographic information questionnaire. The MMPI-2 PTSD subscale and the MMPI-2 PK Scale were used to assess children's PTSD symptoms. In total, 40 children (50% male and 50% female) with a mean age of 20 years old, and a mean education level of 11 years participated in

the study. Seventy-five percent of children reported they were Caucasian, 21% were African American, and 4% were Native American. Of the children, 25% were married, 35% had problematic behaviors problems in the past, and 15% reported a history of violence. Veterans had a mean age of 47 years old, and their race demographics were the same as the child participants. Veterans' mean socioeconomic status was lower middle class, most fathers completed high school, and combat exposure of the group was moderate to heavy. The results of the study indicated that 78% of children reported at least one clinically elevated scale on the MMPI-2. The commonly most elevated scales were hypochondriasis (30%), depression (20%), psychopathic deviate (25%), psychasthenia (32%), schizophrenia (22%), and masculinity-femininity (25%). There were not any significant gender differences found across the MMPI-2 clinical scales. On the MMPI-2, veterans elevated scales most frequently were hypochondriasis (90%), depression (90%), and schizophrenia (96%). Correlation coefficients were utilized to evaluate if fathers and their children's scores were similar on clinical and validity scales; however, there were no significant differences found between father and children's MMPI profile patterns. While the study identified there was not a modal MMPI profile for children of Vietnam veterans with PTSD, there were significant clinical scale elevations in most children. The researchers concluded that the frequency of the elevated MMPI scales for children of Vietnam veterans suggests they have difficulties with depression, anger, emotional distress, excessive energy, and difficult interpersonal relationships. Several limitations are noted regarding the study. First, the surveys for children were mail-in and self-report questionnaires were used, which could have contributed to self-report bias. Additionally, the MMPI was not given in a standardized testing condition. Additionally, there was a small sample size therefore, it is possible the absence between genders was related to Type-II error. Furthermore,

generalizability of these results is limited as the veterans in the sample were help-seeking veterans compared to veterans who did not seek out treatment (Beckham, 1997).

Zerach et al. (2017) examined the long-term impacts of war captivity and combat-induced traumatic symptoms of service members and the impact of wives' symptoms of traumatic stress on their adult children. Participants in the longitudinal study consisted of 123 father-mother-adult offspring triads. Fathers were identified as military service members from the Israeli Defense Forces who served during the Yom Kippur War of 1973. The researchers divided the sample into two groups. One group consisted of 79 triads of ex-POWs, spouses, and their adult children. The second group consisted of 44 triads (i.e., father, wife, adult children), in which the father was not an ex-POW but fought on the same fronts as the ex-POWs. Information was collected from the fathers during the following times: 1991 (FT1: FatherTime1), 2003 (FT2: FatherTime2), and 2008 (FT3: FatherTime3). Data were gathered from the mothers on two separate occasions: 2004 (MT1: Mother Time 1) and 2010-2011 (MT2: Mother Time 2). Of the adult offspring, 47% identified as male and 53% identified as female, and 18.5% of adults indicated they were born before the 1973 Yom Kippur War, while the remaining adults were born after the war.

Measures in the study consisted of the PTSD Inventory (PTSD-I; Solomon et al., 1993) and the Life Events Checklist (LEC; Gray et al., 2004). The PTSD-I was completed by all participants (i.e., fathers, mothers, and children). Fathers were asked to complete the PTSD-I related to combat or captivity. Mothers were instructed to answer questions on measures regarding their symptoms in relation to the traumatic experiences of war their spouses experienced, and adult children were asked to complete the measure regarding their father's combat or captivity. Additionally, mothers, fathers, and adult children completed the LEC, a

checklist assessing traumatic events over one's lifetime (e.g., car accident, physical or sexual assault, exposure to natural disasters). Additionally, sociodemographic information was gathered from all participants and fathers were asked information regarding additional combat-related exposure in different wars. If the oldest adult child could not participate in the study, researchers evaluated the second oldest child (Zerach et al., 2017).

PTSD was assessed utilizing the *DSM-IV-TR* (American Psychiatric Association, 2013). Chi-square analysis indicated that ex-POWs reported high PTSD scores at FT2 and FT3 but not at FT1. Wives of ex-POWs reported higher rates of PTSD compared to husbands at MT1 but not at MT2. Adult children of ex-POWs and of combat veterans did not differ in their PTSD scores. Posttraumatic stress syndrome (PTSS) was utilized as a continuous variable in the study among tirades. Results indicated PTSS among the group of ex-POWs was higher than the group of combat veterans across all time points (FT1 p = .07, medium effect size= .1; FT2 p = < .00, large effect size at .71; FT3 p = .07; large effect size at .7). Similarly, the wives of ex-POWS endorsed higher PTSS symptoms compared to wives in the combat veteran group (MT 1 p <.00, large effect size at .5; MT2 p < .00, medium effect size .38). Adult children whose fathers were ex-POWs also endorsed symptoms indicating a higher intensity of PTSS than the adult children of combat veterans (p = .01, medium effect size .23). In the ex-POW group, the higher the fathers' and mothers' PTSS, the higher their children's trauma symptoms (i.e., PTSS). In the combat veteran group, the only significant correlation was between mother's symptoms of trauma and their adult children's PTSS. Trauma symptoms at FT3 and adult children's PTSS were significantly different between the ex-POW group and the combat veteran group (p = .001, medium effect size of .24). With higher rates of STS in children of ex-POWs, there were no effect size differences indicated between veteran groups (i.e., ex-POW group and combat veteran

group) and their adult children's symptoms of traumatic stress at other assessment points (FT1 = $p = 0.13$; FT2 $p = 0.13$; MT1 $p = 0.12$; MT2 $p = 0$ .37). However, there was a significant correlation between adult children's years of education and traumatic stress symptoms, indicating the more years of education one has, the less likely they are to develop STS ($r = 0.31$, $p = 0$ .001). When researchers controlled for fathers' PTSS at FT1, FT2, and FT3 and mothers' PTSS at MT1 and MT2, results indicated that war captivity did not directly affect adult children's symptoms of traumatic stress ($b = .00$, SE= .00). Significant direct effects were found between father's war captivity and traumatic stress symptoms at FT3 ($b = .15$, SE = .05). There were no direct effects indicated for adult children's traumatic stress symptoms and father's posttraumatic stress symptoms ($b = .00$, SE = .00). There were also no direct effects indicated for fathers' traumatic stress symptoms at FT1 and FT2 and mother's traumatic stress symptoms ($b = .00$, SE = .00 for all). The researchers noted that the findings of the study indicated both mothers' and fathers' symptoms of traumatic stress were related to their adult children's symptoms of traumatic stress. Results also indicated in the ex-POW group, fathers' PTSS in FT2 and FT3 and mothers' PTSS in MT1 predicted adult children's traumatic stress symptoms. Additionally, fathers' traumatic stress symptoms in FT3 were a mediator for the link between mothers' symptoms of traumatic stress in MT1 and adult children's symptoms of traumatic stress. Mothers' traumatic stress symptoms in MT1 was a mediator between fathers' symptoms of traumatic stress at FT1 and adult children's symptoms of traumatic stress. The researchers concluded that traumatic stress responses among fathers (i.e., PTSS) were risk factors for spouses and their children for developing STS. Researchers discussed that the conclusions from the study wherein offspring of ex-POW's displayed higher levels of PTSS than offspring of combat veterans are likely due to the prolonged and continuous stress and trauma of being held

captive as such prolonged stress was not only impactful on the ex-POW but also their loved ones. Ex-POW's offspring's' exposure to fathers' trauma related symptoms and their stress responses are risk factors for spouses and offspring to develop symptoms of trauma as well. Additionally, researchers suggested that offspring's symptoms of trauma related to their father's ex-POW status may be related to the complex interpersonal effects and intergenerational impact of captivity related trauma. Researchers explained that the relationship between captor and captive is interpersonal and distorted and may impact marital adjustment and spouses of ex-POW's (Herman, 1997; Solomon et al., 2012;). It is possible that this dynamic impacts marital adjustment, which in turn impacts offspring making them more vulnerable to PTSS. (Zerach et al., 2017).

The authors of the study reported several limitations, including use of self-report measures which may introduce self-report bias. Researchers also reported that wives and adult children of ex-POWs may have answered in a socially desirable way, explaining that participants who were asked to report about an ex-POW may have presented a resilient façade in an attempt to honor their loved one as endorsing trauma related symptoms could be disrespectful or shameful. Additionally, researchers reported an additional limitation of the study was the lack of precombat trauma measures of veterans and their spouses, which prohibits inferring causality. Another limitation of the study mentioned by researchers was the length of time between ex-POW's imprisonment and data gathering. Due to the low number of participants in the study, generalizability is likely low. Finally, researchers indicated that even though this study was approved by ethics committees, as this was a trauma-related study, this study could reactivate trauma memories for veterans and their families (Zerach et al., 2017).

Intimate Partners and Children of Service Members

Herzog et al. (2011) conducted a study assessing the impact of combat exposure on combat soldiers. The researchers also gathered information on whether soldiers' traumatic symptoms were correlated to STS in the soldiers' wives and children. Also examined was whether symptoms of STS in the solider were a mediator of the STS symptoms experienced by the children.

Participants for the study were recruited via letters sent to 1,011 households of married US National Guard Brigade Combat Team soldiers. The study's inclusion criteria consisted of having a National Guard soldier, spouse, and child (age 2 to 18 years old) residing in the home. The final participant parent dyads selected for the study consisted of 108 individuals, which made up 54 couples. Each couple consisted of a male soldier and a female spouse. Of the soldiers in the study, 54 were male, 51 were Caucasian, two were Hispanic, and one identified as other, and their ages ranged from 28 to 53. Additionally, 38 soldiers reported their rank was enlisted, with 16 as officers. Solders served an average of 17 years in the military, and 26 of the soldiers reported they had been deployed once and 28 of the soldiers reported they had been deployed two or more times. Regarding education, 46 of the soldiers indicated they had some college, six were high school graduates, and one received a GED. Female spouses' ages ranged from 25 to 53. Of the spouses' education background, 47 reported some college, six were high school graduates, and one had their GED. Fifty-two of the spouses were Caucasian and one was Hispanic. Soldiers' children's ages ranged from 2 to 17. Thirty-one of the children were female and 23 of the children were male. 52 of the children reported they were Caucasian, two Hispanic, and one other. (Herzog et al., 2011).

Measures utilized in this exploratory study to address the research questions were the PTSD Checklist-Military Version (PCL-M; Weathers, 2003), the Secondary Trauma Scale (STS; Motta et al., 2001), the Hurt-Insult-Threaten Scream (HITS; Sherin et al., 1998), the Relax-Alone-Friends-Family-Trouble (RAFT; Bastiaens et al., 2002), and the Child Behavior Checklist (CBCL; Achenbach and Rescorla, 2001). Participants in the study were mailed the self-report measures to complete. The PCL-M was only given to the soldier. The PCL-M is a 17-item self-report measure of combat-related PTSD symptoms with a cut-off score of 50 (i.e., scores greater than 50 indicate probable PTSD). Only spouses of the soldiers completed the Secondary Trauma Scale, an 18-item self-report measure assessing STS symptoms in family members of individuals who have experienced traumatic events. A score of 45 or higher on this scale is indicative of one experiencing symptoms of STS. The HITS and RAFFT were completed by both soldiers and their partners. The HITS is a four-item screener to detect domestic violence, and the RAFFT is a screener for problematic substance use. Additionally, the CBCL was administered to both soldiers and their partners to evaluate the emotional and behavioral characteristics in their oldest child between 6 and 18 (Herzog et al., 2011).

Findings in Herzog et al. (2011) study identified that of the 54 soldiers participating in the study, five (M = 31.57; SD = 14.10) of the soldiers scored in the range suggestive of PTSD, and two soldiers scored close to the clinical cut off indicative of probable PTSD (i.e., scores of 48 and 49). Of the soldiers' spouses in the study, eight out of the 54 soldiers' spouses scored in the clinical range for STS (M = 32.30; SD = 11.89), and two of the 54 soldiers' spouses' scored close to the clinical cut-off range for STS, which together is a higher rate than noted in the soldiers. The combined total scores on the CBCL for soldiers and their spouses was 45.98 with a standard deviation of 38.63 (M soldier = 20.27; M spouse = 25.7). These scores suggested that

the total problem score for their children was lower in soldiers than spouses; however, this was not a significant difference. For the internalizing problems category on the CBCL, the mean of the combined spouses' score was 9.34 (*M* soldier = 5.44; *M* spouse = 7.79). The difference in means on the CBCL between soldiers and spouses reflected a significant difference ($t = -1.697$; $p = .093$). The combined externalizing problems category on the CBCL reflected a mean score of 10.05 (*M* soldier = 6.38; *M* spouse = 7.33), which was not reflective of a significant difference between soldier and spouse responses (Herzog et al., 2011).

Several significant relationships between variables were identified. There was a significant relationship between combined soldier and spouse perceptions of the child's problems based on the total score on the PCL and CBCL ($r = .470$, $N = 54$, $p = .000$). Second, there was a significant relationship between the combined soldier and spouse perception of the total score on the CBCL and STS score ($r = .441$, $N = 54$, $p = .001$). Because the CBCL is composed of internalizing and externalizing subscales, researchers further analyzed the CBCL subscales, the PCL, and the STS. There was a moderate significant correlation between soldier perceptions of total CBCL scores and the PCL ($r = .405$, $N = 54$, $p = .002$) On the subscales of the CBCL (i.e., internalizing and externalizing) there was a significant correlation between soldiers' perceptions of child's internalizing problems subscale on the CBCL and the PCL ($r = .355$, $N = 54$, $p = .008$). However, there was no significant correlation demonstrated for soldier perceptions of child externalizing difficulties on the PCL and the CBCL ($r = .231$, $N = 54$, $p = .093$). There were moderate correlations between soldiers' observations of total child problems on the CBCL, and mother's score on STS ($r = .351$, N = 54, $p = .009$) as well as correlations between soldier perceptions of child internalizing problems on the CBCL and the STS ($r = .391$, $N = 54$, $p = .003$). There was no significant correlation between soldier perceptions of child externalizing

problems on the CBCL and the STS (p = .202). Additional significant moderate positive correlations consist of combined spouse perceptions of child total problems on the CBCL and the PCL (r = .466, N = 54, p = .000), spouse perceptions of child internalizing problems on the CBCL and the PCL (r = .410, N = 54, p = .002), spouse perceptions of child total problems on the CBCL and the STS (r = .461, N = 54, p = .000), and spouse perceptions of child internalizing problems on the CBCL and the STS (r = .532, N = 54, p = .000). There was no significant correlation between spouse perceptions of child externalizing problems on the CBCL and the PCL (p = .08), nor was there a significant correlation between spouse perceptions of child externalizing problems on the CBCL and the STS (p = .08). In examining mediating effects utilizing the stepwise method for spouse and children's secondary stress symptoms, researchers found that spouse secondary trauma was a mediating variable between soldiers' symptoms of PTSD and spouse perceptions of child internalizing problems (PCL and STS p = .000; secondary traumatic stress and spousal abuse p = .001). Additional positive correlations were identified, as STS was positively correlated with spousal indication of domestic violence, specifically verbal abuse (p = .001). Externalizing behaviors in children based on the CBCL were significantly correlated with the spousal HITS (p = .018). While only two of the 54 spouses and some of the soldiers endorsed responses reflective of domestic violence, there was a significant positive correlation between soldier scores on the HITS and spouse (p = .006). The substance abuse rating scale identified that 15 soldiers and 10 spouses scored in the range indicative of substance abuse. The authors concluded that spouses of soldiers who exhibit high levels of PTSD are at risk of developing STS symptoms given that symptoms of secondary traumatic stress were significantly correlated with PTSD in soldiers. However, other sources of trauma and distress in spouses were not explored. The researchers also identified a mediating model that suggested a

key relationship between spousal secondary trauma symptoms as the mediating factor between child STS and soldier posttraumatic stress symptoms (Herzog et al., 2011).

Overall, findings from the study were consistent with previous research on STS in spouses of military service members, as previous research has also found a relationship between spouses and children of soldiers with a diagnosis of PTSD were more likely to exhibit distress, which may be due to symptoms of STS, although this conclusion warrants more research (Arzi et al., 2000; Dekel et al., 2005). The researchers identified that the study's relevant clinical implications were for mental health providers to consider family systems interventions and trauma-informed therapy approaches when providing therapeutic services to soldiers and their families (Herzog et al., 2011).

The authors discussed several limitations of the study. First, they identified the small sample size, which may have been a result of the study design that required both the solider and the spouse to complete all questionnaires. Such a small sample size makes it difficult to draw inferences. Additionally, the study consisted of a non-diverse sample, which may have impacted generalizability. Researchers also reported that the soldiers who participated in the study were part of a National Guard unit that has been recognized for their innovative reunion programming, which may have led to biased results due to their willingness to participate in the study as well as the potential effectiveness of a program addressing reduction of family problems due to deployment and reunification. There are also low rates of PTSD symptoms in soldiers and STS in spouses that are part of the National Guard. It is possible that results may be different if soldiers where active duty rather than reserve. An additional limitation was that the soldiers in the sample were primarily well-educated and high ranking (Herzog et al., 2011).

The Herzog et al. (2011) study added to the literature on STS and the experience of military families. Results of the study are consistent with previous research identifying a relationship between soldiers' symptoms of PTSD and family members experience of secondary traumatic stress symptoms. Herzog et al. (2011) findings suggest that STS in children of military personnel is specifically characterized by internalizing symptoms rather than externalizing symptoms. This study highlights the importance of mental health professionals remaining cognizant of the relationship between soldiers PTSD symptoms and symptoms of STS in family members of soldiers (Herzog et al., 2011).

Attachment and War Trauma

Ein-Dor et al. (2010) researched the interactions and within-person associations between veterans with PTSD and their spouses. Researchers specifically questioned if attachment insecurities of veterans or wives were associated with PTSD or STS. Second, researchers examined if husbands' or wives' attachment insecurities were associated with the severity of the spouse's trauma-related symptoms. Researchers defined attachment-related avoidance based on Mikulincer et al.'s 2004 definition as:

> the extent to which an individual distrusts the goodwill of relationship partners, strives to maintain behavioral independence and emotional distance from partners, and relies on deactivation, emotion-regulation strategies, such as the denial of attachment needs and suppression of attachment-related emotions and thoughts. (Mikulincer et al., 2004, p. 318)

Attachment-related anxiety, according to Mikuliner et al. 2004 was defined as, "the degree to which an individual worries that a partner will be unavailable in times of need and adopts

hyperactivating attachment and emotion-regulation strategies as a means of regulation distress and coping with threats" (as cited by Ein-Dor et al., 2010, p. 317).

Ein-Dor et al.'s (2010) research was part of a longitudinal study examining PTSD and psychopathology between ex-POWs and a control group of veterans who were not ex-POWs. For the study, researchers recruited 157 Israeli couples from records housed by the Israeli Ministry of Defense. The participants consisted of 85 POWs and their wives and a comparison group of 72 veterans who had not been POWs and their wives. All veterans were a part of the 1973 Yom Kippur War. It is of note these are the same participants used in Lahav et al.'s (2015) study. The researchers divided their sample into two groups: combat veterans who had been held captive and their wives and a control group of 72 combat veterans who had not been POWs and their wives. The control group was identified as having fought on the same fronts as the ex-POWs, having similar demographic variables (i.e., age and socioeconomic status) to the veterans who were POWs, and having similar military history (i.e., rank and combat exposure). The participants' mean age in the study was 27.37, with a mean of 3.25 children.

Data were gathered by having participants fill out two measures. The first was the Adult Attachment Styles Scale (Mikulincer et al., 1990), which measures avoidant and anxious attachment (e.g., "I worry about being abandoned." "I feel uncomfortable when others get close to me." Ein-Dor et al., 2010, p. 319). The participants rated each question on a seven-point scale (*not at all* to *very much*) The second measure each participant completed was the Posttraumatic Stress Disorder Inventory (PTSD-I; Solomon et al., 1993), a measure of PTSD that corresponds to the *DSM-IV* diagnostic criteria for PTSD. The researchers tailored the PTSD-I material for each group of veterans and their wives. Ex-POWs were instructed to answer the PTSD-I relating to their captivity experience, and their wives were instructed to answer the PTSD-I about their

spouse's captivity. The control group of veterans was instructed to fill out the PTSD-I in relation to their experience in the Yom Kippur War, and their wives were instructed to answer the PTSD-I questions regarding what their husbands experienced in the Yom Kippur War (Ein-Dor et al., 2010).

The study results indicated that in the ex-POW group, 24.8% of veterans and 14.1% of veteran's wives endorsed symptoms indicating they were suffering from PTSD or STS. This indicated participants endorsed at least one intrusion symptom, three avoidance symptoms, and two hyperarousal symptoms. In the control group, 3.8% of veterans and none of the wives endorsed symptoms indicated they were suffering from diagnosable PTSD or STS. Main effects showed that the impacts of trauma status on severity of PTSD symptoms for hyperarousal, avoidance, and intrusion were significant in ex-POWs ($p < .001$ for all); however, none of these were significant in the veteran control group (i.e., $P > .08$ for all). Researchers explained that this indicated veterans reported more severe symptoms of PTSD than did their wives only in the ex-POW group and not the control group (Ein-Dor et al., 2010).

Researchers used the actor effects analysis to examine participants' attachment variables on their individual reports of PTSD-related symptoms (i.e., avoidance, intrusion, and hyperarousal). The analyses indicated significant effects for attachment avoidance and anxiety. Specifically, the higher husbands or wives rated their attachment anxiety or avoidance, the more severe they rated their intrusion, avoidance, and hyperarousal symptoms of PTSD. There were no significant effects indicated for attachment anxiety being moderated by trauma status (i.e., PTSD or STS). Avoidant attachment was significantly related to more severe intrusion and avoidance symptoms of PTSD in the ex-POW group (wives and husbands); however, significance was not indicated in the control group of couples. Thus, avoidant attachment was associated with more

severe PTSD or STS symptoms in the ex-POW group of wives and husbands. Additionally, a significant pattern effect revealed by hierarchical linear modeling indicated the higher the attachment anxiety for husband or wife, the more severe the PTSD or STS symptoms reported. These results were qualified by a significant partner effect between attachment anxiety and trauma. Although there was no clinical significance indicated for unique partner effects, intrusion symptoms of PTSD showed significant interactive partner effects for avoidant attachment and trauma status. Veterans in the POW group had inverse scores of avoidant attachment associated with the severity level of STS endorsed by their wives ($p < .01$) and wives' avoidant attachment was positively associated with veterans' severity of PTSD symptoms ($p < .01$). The researchers suggested these findings indicate that avoidant attachment in ex-POWS is related to their wives exhibiting less severe STS symptoms, and avoidant attachment in wives of ex-POWs is linked with more severe PTSD symptoms in ex-POWs. It should be noted that there were no significant effects of avoidant attachment in the control group (Ein-Dor Et al., 2010).

Ein-Dor et al.'s (2010) report was consistent with previous research as their study showed that both members of couples (i.e., ex-POWs and their spouse) reported more trauma related symptoms compared to compared to couples in the control group, and ex-POW's PTSD was more severe than their spouses STS symptoms. These findings may be linked to prior research. For example, evidence has found attachment insecurity was associated with hostility, depression, mistrust of other people, fear of death, and loneliness (Carnelley et al., 1994). Overall, Ein-Dor et al.'s (2010) findings suggest that there are complex links between attachment insecurities and trauma related symptoms. Specifically, anxious attachment appears to be a prominent factor in both PTSD and STS. It is likely that those with an anxious attachment style have difficulty coping with trauma, which in turn exacerbates emotional and psychological concerns and

symptoms. Additionally, anxious attachment may also increase hypervigilance and exaggeration of threat cues, which may create worry and rumination. Limitations of the study include a potential selection basis as divorced couples were excluded from the study. Additionally, this study was limited to men having PTSD and women having STS; therefore, the role of gender in the results was unable to be evaluated. Additionally, the cross-sectional design of the study does not allow the study to make casual inferences between PTSD and attachment insecurities (Ein-Dor et al., 2010).

In sum, there have been various studies conducted studying indirect exposure to trauma in a variety of populations that indicate learning of someone's trauma (either in a clinical setting or having a loved one who has experienced trauma) may lead to symptoms of STS. In clinical populations (i.e., trauma surgeons and emergency medicine clinicians), it has been shown those working with trauma survivors may display symptoms of PTSD or STS (Roden-Foreman, 2017; Warren et al., 2013). Similarly, in a study of U.S. Airforce Chaplains, it was found that 7.7% of chaplains reported clinically significant symptoms of PTSD due to counseling and operational stressors (Levy et al., 2011). However, the study, it is unclear the percentage of chaplains who experienced indirect trauma exposure from counseling versus chaplains that experienced direct trauma exposure such as experiencing incoming fire. Regarding partners of service members, it has also been supported that partners of service members may experience distress. The research appears to highlight that partners of service members may experience trauma related symptoms or some form of distress. Some studies have found that partners of service members may experience trauma related symptoms due to their spouses combat related trauma (Ein-Dor et al., 2010; Zerach et al., 2017). Additional studies have also found that spouses of service members report trauma related symptoms; however, it is unclear if their symptoms are related to their

spouses combat trauma or if their symptoms are related to other factors (Dirkzwager et al., 2005; Herzog et al., 2011). For instance, in Herzog et al. 2011, the study finds that of 54 soldiers who experienced combat, five of the soldiers report probable PTSD symptoms while nine of their wives report clinically significant STSS symptoms. This study may indicate there are other occurrences contributing to wives' symptoms rather than just service members trauma experiences. There has been limited research on adolescents who are exposed to STS; however, one study did find in a sample of adolescents, 54% of them who were indirectly exposed to trauma experienced trauma related symptoms (Yazdin et al., 2014) which once again seems to parallel that loved ones of service members are likely to experience distress in some form.

CHAPTER III: RISK FACTORS OF SECONDARY TRAUMATIC STRESS IN INTIMATE PARTNERS AND CHILDREN OF SERVICE MEMBERS

There have been various risk factors identified for developing PTSD. Studies have highlighted sociodemographic and socioeconomic characteristics, relationship familiarity, distress related to illness, exposure characteristics, psychiatric symptoms, and maladaptive coping strategies as risk factors for developing PTSD (Bambauer et al., 2006; Carmassi et al., 2020; Dew et al., 2004; Stukas et al., 1999). In regard to sociodemographic and socioeconomic characteristics, research has found that women are more likely to be affected by PTSD symptoms (Carmassi et al., 2020; Stukas et al., 1999), caregivers who are younger in age are at a higher risk to develop PTSD (Bambauer et al., 2006; Carmassi et al., 2020; Dew et al., 2004), and individuals who have a lower income and less education are at a higher risk to develop PTSD (Carmassi et al., 2020; Dew et al., 2004; Stukas et al., 1999;).

Additionally, caregiver research has identified that the closeness of the relationship with the cared for can be a factor to developing PTSD (Carmassi et al., 2020; Jia et al., 2015). For example, one study of acute burn patients found that spouses were more likely to suffer with PTSD symptoms compared to other close relatives (Carmassi et al., 2020). Conversely, it has also been supported that the poorer the family relationship with a patient, the more at risk a caretaker is of developing PTSD symptoms (Carmassi et al., 2020; Dew et al., 2004, Choi et al., 2018). In relation to illness-related distress, it has been indicated that caregiving burden and caregiving strain are possible risk factors for PTSD, which may help to explain higher risk for PTSD in caregivers who are both very close and very distant from the patient (Carmassi et al., 2020; Dew et al., 2004, Choi et al., 2018). Other risk factors for developing PTSD that have been

reported are frequent visits after a medical event and spending more time with the patient (Carmassi et al., 2020; Trevick et al., 2017).

Finally, psychiatric symptoms have been identified as a risk factors for developing PTSD. For instance, one study in a sample of family caregivers of intensive care unit patients found that comorbid disorders the caretakers displayed, such as depression or pain, were predictors of having more PTSD symptoms (Alfhein, 2019; Carmassi et al., 2020). Additionally, higher levels of depression (Carmassi et al., 2020; De Miranda et al., 2011), anxiety (Carmassi et al., 2020; Choi et al., 2019), or depression and anxiety (Carmassi et al., 2020; Norup, 2013) have all found to be risk factors for higher severity of PTSD symptoms. Those with negative copings skills have also been identified as having a greater chance of developing PTSD. Coping styles such as avoidance, behavioral disengagement, denial, and use of humor have all been found to be predictors of PTSD in caregivers (Carmassi et al., 2020; Dew et al., 2004).

General Risk Factors for Developing Secondary Traumatic Stress

Hensel et al. (2015) conducted a meta-analysis of 38 studies regarding the risk factors for developing STS in professionals who were indirectly exposed to trauma because they worked therapeutically with trauma victims. These professionals held occupations such as counselors, child protective workers, mental health clinicians, chaplains, and domestic violence workers. Researchers examined 17 potential risk factors. Age and experience were either continuous or ordinal variables gathered from demographic questionnaires. Nominal variables included ethnicity and gender. Trauma training, trauma caseload, supervision, and personal trauma history were identified as dichotomous variables. Small effect sizes but significant results related to the development of STS were found for experience (i.e., longer length of time working with trauma survivors), trauma training, and age ($r < .10$). Additionally, there were small but significant

effect sizes for all measures of personal trauma, caseload, work support, and social support ($10 < r > 30$). In sum, this study identified small effect sizes for several risk factors for developing STS among individuals who worked directly with trauma victims. The strongest effect size was for caseload ratio ($r = .19$). This finding suggests that the larger a caseload proportion (i.e., the more time spent working with trauma survivors), the more likely one is to develop STS (Hensel et al., 2015).

Xue et al. (2015) provided an overview of risk factors for developing PTSD within the military population. Military members who have been exposed to combat trauma and present with trauma related symptoms typically have PTSD rather than STS. Researchers conducted a meta-analysis of 32 full-text articles about risk-factors in military populations for developing combat-related PTSD. The studies included 25 cohort studies and 7 cross-sectional studies. Inclusion criteria for the studies consisted of the following: investigated risk factors for PTSD in military personal after being deployed to areas with active combat; reported relative risks or odds ratios, used 95% confidence intervals for risk factors for developing PTSD; identified risk factors for post-deployment PTSD; had a sample of Veterans, military personnel, or both. Researchers excluded studies if they only measured acute response to trauma, there was a categorical measure of PTSD, the entire study population had PTSD or a comorbid psychiatric disorder, the study did not assess *DSM* symptoms of PTSD, there was insufficient data to calculate effect sizes, the aim of the study was to investigate the efficacy of treatment, or the study was a single case design. Two investigators were assigned to independently conduct a quality assessment of the studies, and the inter-rater reliability among the raters was high ($k = 0.68$). Sample sizes in the studies ranged from 238 to 40,6000, and there were a total of 27 risk factors explored by two or more of the studies used for the meta-analysis.

Risk factors for the study were divided into the following categories: pre-trauma factors (e.g., demographics, rank, branch, prior trauma history, prior mental health history), peri-trauma factors (e.g., combat exposure, witnessing someone being killed or wounded, trauma severity), and post-trauma factors (i.e., subsequent life events, post-deployment support, and comorbid psychological concerns). Researchers examined risk-factors by using a random-effects model. The study identified various pre-trauma risk factors associated with PTSD some of which likely reflected indirect exposure: female gender, being non-White, low education, rank lower than officer, serving in the U.S. Army as opposed to other branches, greater number of deployments, longer length of cumulative deployments, aversive life events outside of military-related trauma, experiencing trauma prior to the military, and having prior psychological concerns. Peri-trauma risk factors for service members and veterans were identified as being a combat specialist, greater combat exposure, having the experience of discharging a weapon, severe trauma, deployment-related stressors, and witnessing someone be wounded or killed. Post-trauma risk factors were identified as comorbid psychological concerns and aversive life events not related to a military career such as traumatic related experiences not related to the military. It is of note that a protective factor identified for veterans and military service members was post-deployment support. Additionally, the younger age at the time of trauma was not a risk factor for developing PTSD, which contrasts with previous research (Xue et al., 2015).

Penix et al. (2019) studied the degree to which self-care is a risk factor for STS and the role of leadership in understanding STS. Participants in this cross-sectional study consisted of 344 United States healthcare workers deployed to Afghanistan in 2013. Participants were divided into the following two categories: behavioral health staff (i.e., those who provide mental health treatment for military personnel with PTSD) and medical staff (i.e., those who treat physical

trauma). All participants were given the WRAIR-Secondary Traumatic Stress Inventory (WRAIR-STSI), which was developed by the authors of this study for this study. The WRAIR-STSI includes symptoms of PTSD based on the *DSM-IV-TR* and specifically asked participants to rate their symptoms based on treating traumatized service members. In addition to symptoms of trauma, the WRAIR-STSI also asks one question relating to self-guessing (i.e., self-trust) and includes two questions about emotional reactions. PTSD was also assessed with the PTSD Checklist (PCL; Weathers et al., 1993). The researchers also created a questionnaire about functioning (which was not named) that asked questions about job performance, family connectedness, job functioning, and family functioning. Participants' combat functioning was assessed with the WRAIR Combat Experiences Scale (Adler et al.,2017; Penix et al., 2016) and the Deployed Medical Experiences Scale (Adler et al., 2017). Behavioral health providers used various therapeutic techniques and use of evidence-based psychotherapy was assessed in terms of frequency. Results of the study indicated that positive WRAIR-STSI scores in healthcare workers were positively correlated with symptoms of PTSD in the healthcare workers (*r = .64; p= < .001)*, which demonstrates convergent validity of the STS and PTSD measures. STS was shown to be inversely related to job performance for healthcare workers ($F = 9.755$; $p < .001$) as well as family connectedness ($F = 8.91$; $p < .001$) once gender, education, professional demands, and combat exposure were controlled for. Job performance accounted for 6% of the variance in secondary traumatic stress scores ($F = 15.87$; $p < .001$) and family connectedness explained 8% ($F = 18.97$; $p = < .001$). Background variables that were significantly associated with STS included combat exposure ($F = 30.98$; $p < .001$) and professional demands ($F = 25.51$; $p = .001$. There were no significant differences between gender or education (i.e., having at least a high school degree versus some college experience) as participants with these demographics reported

similar levels of STS. Additionally, less self-care ($F = 20.74$; $p < .001$) and less health-promoting leadership ($F = 15.72$; $p < .001$) were associated with greater STS scores when combat exposure, professional demands, and increased burnout were accounted for. Using in vivo exposure therapy by behavioral health support staff ($F = 5.36$; $p < .02$) and trauma narratives ($F = 21.16$; $p < .001$) were associated with higher STS scores compared to use of cognitive restructuring and supportive psychotherapy. When covariates on psychotherapy techniques were accounted for, using trauma narratives was the only technique associated with STS ($F = 12.07$; $p < .001$). Finally, the utilization of trauma narrative explained 12% of the variance in secondary traumatic stress scores ($F = 12.13$; $p = .002$; Penix et al., 2019).

This study concluded that combat exposure was related to elevated STS scores. Additionally, there were risk and protective factors identified for STS. Burnout was identified as a potential risk factor for developing STS while health-promoting leadership and self-care were found to be potential protective factors. In behavioral health providers, utilizing trauma narratives as a mode of psychotherapy was linked to higher STS scores. Various strengths and limitations of the study were identified. Strengths of the study include being one of the first empirical research studies to examine the relationship between STS, job performance, and family functioning among military healthcare providers. In contrast to previous research, this study did not find that demographic variables such as gender and education were linked to STS (Dominguez-Gomez & Rutledge, 2009; Ewer et al., 2015). Limitations of the study were a relatively small sample size, lack of examination of other variables such as years of service, small effect sizes, the utilization of self-report measures and the inability to determine directionality of variables due to the cross-sectional nature of the study (Penix et al., 2019).

It appears there has been limited research on risk factors for the development of secondary traumatic stress in children and adolescents, and to date, there does not appear to be research specifically on risk factors for children and adolescents developing STS due to their parents' military-related trauma. However, there has been research regarding risk factors for children and adolescents developing PTSD. While it cannot be assumed that these risk factors may be synonymous, it is beneficial to review these risk factors.

Trickey et al. (2012) conducted a meta-analysis of risk factors for PTSD in children and adolescents, meaning, a child who possesses such risk factors may be more likely to experience symptoms of PTSD. The researchers categorized risk factors into categories of demographic, pre-trauma, objective trauma, subjective trauma, post-trauma individual factors, post-trauma, and psychological environment factors. The meta-analysis concluded that in children and adolescents 6 to 18 years old, medium to large effect sizes were indicated for factors relating to the subjective experience of a traumatic event and post-trauma variables. Specific subjective risk factors for a traumatic event include peri-trauma fear and perceived threat to life. Specific risk factors that are post trauma variables include social support, social withdrawal, poor family functioning, distraction, suppressing thoughts, and comorbid psychological problems.

It is of note that the meta-analysis identified that demographic and pre-event factors showed a weak association as risk factors for the development of PTSD. However, perceived life threat and fear had a stronger correlation as risk factors for PTSD than trauma severity. Also, post-event factors risk factors had a stronger relationship to developing PTSD than pre-event factors. Specifically, the perception of threat may be more significant than actual severity of the threat. Additionally, for those who identified as female, sex became a stronger risk factor for developing PTSD as age increased (Trickey et al., 2012).

Risk Factors for Developing Secondary Traumatic Stress in Intimate Partners of Service Members

War Events

Bramsen et al. (2002) conducted a research study investigating the signs of STS in couples who were a part of World War II (WWII). Specifically, the authors of the study explored the long-term psychological adjustment (i.e., symptoms of STS) of couples when both partners experienced WWII as well as gender differences. Participants were initially a part of a larger research project that began in 1992 researching the long-term effects of war on elderly WWII survivors (Bramsen, 1995)

The participants in this study consisted of 444 couples (888 individuals) from a community sample of elderly Dutch citizens who survived WWII. The participants typically married following the end of the war, which indicated they could have different war-related experiences. The researchers explained that the following groups of WWII war victims were identified: civilian war victims (i.e., civilians who experienced battle action such as bombardments), victims of persecution by the Japanese, victims of persecution by the Nazis, military veterans, and resistance participants. Based on these distinguishments, a list of 19 war events was created (e.g., imprisonment, being a soldier, experiencing bombardments) that these groups may have encountered. The participants initially completed this questionnaire in 1993. Researchers shared that nine of the questionnaire's events were based on criteria A for PTSD outlined by the *DSM-III-R*. Additionally, the questionnaire gathered information on the degree of exposure to violence (e.g., death of family members, seriously injured). In Bramsen et al. (2002), participants completed the Dutch version of the Impact of Event Scale (IES; Van Der Ploeg et al., 2004) regarding their individual war-related experiences. The IES consists of 15 questions

that assess avoidance and intrusion symptoms. The clinical cut-off for the scale is 26, which is indicative of a probable diagnosis of PTSD (Bramsen et al., 2002).

Researchers utilized a multilevel regression analysis where they identified their dependent variable as PTSD symptoms. Their independent variables were the demographic variables they gathered (i.e., gender, age, level of education, duration of relationships, war events experienced by the spouse, spouse's PTSD symptoms). Regarding participants in the study, in 1993, couples had remained together for a mean of 40 years and had a mean age of 68. Men were significantly older than women and presented with higher symptoms of PTSD ($N = 861$; $p < .05$). In step one of the researcher's analysis, only gender was significant, as men had more severe posttraumatic stress symptoms than women. In step two of the analysis, where war events were controlled for, women had significantly higher PTSD scores. In step three, the number of reported war events by the spouse was not significant. Step four controlled for spousal PTSD symptoms, and beta was negative and statistically significant. The researchers concluded these results indicate the most important predictors of symptoms of PTSD were the number of war events experienced by the participant and the level of PTSD symptoms of their spouse.

The authors discussed some limitations of the study. First, they reported that the validity of the self-report measure may be called into question, as when individuals are exposed to traumas and have PTSD, they may recall these events more vividly or even exaggerate their exposure. Individuals who do not have PTSD may underreport or forget events as they may avoid or oppress trauma-related symptoms, making self-report less reliable. Additionally, the authors discussed that the length of 50 years between the studies and participants' initial report of trauma may hinder causal inferences. A strength of the study the authors identified was the study design, as the characteristics of both individuals as a couple were considered.

The findings of the Brasmen et al. (2002) were consistent with other studies that have identified that significant others of those with traumatic stress may experience STS, as well as with studies that found a significant correlation between psychological status and veterans with PTSD (Beckham et al., 1996; Coughlan et al., 1987; Jordan et al., 1992, Kulka et al., 1990; Solomon et al., 1990).

CHAPTER IV: MENTAL HEALTH OUTCOMES, DISORDERS, AND SYMPTOMS IN INTIMATE PARTNERS AND CHILDREN OF SERVICE MEMBERS

Research has shown that intimate partners and children of service members are impacted by their husbands and spouses' symptoms of posttraumatic stress disorder. While this review has focused upon the development of secondary traumatic stress thus far, additional research has shown that spouses and children may go on to develop other types of distress. Research has supported that intimate partners of individuals who deal with symptoms of PTSD may face an increase in responsibilities for their partners and an increase in tension within the home because of irritability displayed by their spouse (Dekel, 2010; Fredman et al., 2011). Research has also identified that living with a trauma survivor displaying symptoms of PTSD can increase the other's partners probability of experiencing stress, depression, or anxiety (Nelson Goff et al., 2005). Voris et al. (2018) explored what it is like to be spouse of a combat veteran with PTSD and/or a traumatic brain injury. Researchers reported that wives experience financial, social, and emotional challenges as a result of being a caregiver for their husbands. Additionally, wives reported feeling emotionally and socially disconnected by both the military and civilian community, which can lead to an increase of distress for wives (Voris et al., 2018).

There appears to be more limited research on children and adolescent's indirect exposure to war. However, there have been some studies identifying the impact trauma and indirect trauma has on children and adolescents. Hadi et al. (2006) reported that when children and adolescents are exposed to traumatic events involving potential loss of life, they display symptoms of psychological distress similar to those seen in adults. Posttraumatic stress symptoms, anxiety, and depression are the most common symptoms reported by children exposed to traumatic experiences. While the severity of initial symptoms in children and adolescents have been shown

to decrease over time, it has been shown that the severity of the trauma predicts long-term impacts as well as the severity of initial symptoms (Pynoos et al., 1987; Vernberg, 2002). Adolescents who were victims of terrorism have reported symptoms of psychological distress up to 17 years after the trauma (Desivilya et al., 1996). One study highlighted that for children whose father died in war was associated with an increase of child's psychological problems (Kaffman et al., 1984). Kuwaiti children's exposure to war reported psychological symptoms of depression, PTSD, and anxiety (Hadi et al., 1998; Macksound et al., 1993).

Psychological Distress in Intimate Partners of Service Members

Renshaw et al. (2011) researched spouses of combat veterans with PTSD to determine if the spouses' distress was a reflection of STS or general psychological distress. The study participants consisted of 190 civilian wives of male service members who experienced war-related trauma but had not been formerly diagnosed with PTSD. The participants were gathered from a sample of 664 couples participating in a longitudinal study researching marriage education intervention. The couples were recruited via posters, referrals from unit chaplains, media ads, and brochures. The demographics of the wives of the male service members were 70% Caucasian, 11.6% Hispanic, 10% African American, and 8.3% other. Of the wives, 27.9% held a General Education Development certificate, 5.8% did not complete high school, 22.1% held a technical or associate degree, 12.1% of the wives earned a bachelor's degree, and 4.7% held an advanced degree. Additionally, 70.5% of the wives were unemployed, 15.3% had a part-time job, and 12.2% were employed full-time. The average age of the wives was 27.09. The male service members identified as 71.1% Caucasian, 11% Hispanic, 10.5% African American, 7.4% other. Regarding education, 35.8% of service members held a high school diploma, 40% held a General Education Development certificate, and 13.7% identified they obtained a technical or

associates degree. The average age of the male service members was 27.83. The average length of the relationship between wives and service members was 4.81 years. The study's inclusion criteria consisted of couples being required to have been married for a minimum of 1 year and being fluent English speakers, and exclusion criteria were identified as both members having been in the military actively or in the past.

Researchers had service members and their wives complete the PTSD Checklist-Civilian (PCL-C; Weathers et al., 1993), a 17-item self-report measure that assesses PTSD based on the diagnostic criteria outlined by the *DSM-IV*. In addition to the PCL-C, wives completed 12 items from the Mood and Anxiety Symptoms Questionnaire (MASQ; Watson & Clark, 1991). The 12 items selected from the more extensive MASQ were based on factor analysis indicating these questions measure general psychological distress (Keogh & Reidy, 2000). Examples of the MASQ Likert-scales-based items are, "during the last week, I felt dissatisfied with everything" (Keogh & Reidy, 2000, p. 464). Upon completing the PCL-C and the MASQ, wives were then asked follow-up questions regarding their answer choices. Researchers asked if the wives endorsed their responses related to of PTSD and distress about events their husbands had experienced or events in their own lives. To analyze the wives' responses, researchers analyzed the data by gathering the percentage of wives who endorsed their profile of symptoms related to their spouses' military experiences versus events experienced in their own life to identify if wives were indicating a potential symptom of STS. The data gathered was then interpreted as the number of wives who were potentially experiencing STS symptoms versus those experiencing symptoms relating to something they experienced in their own life. Next, the researchers examined the distinctiveness of the responses the wives endorsed on the PCL-C. This was examined by the researchers correlating the wives' PCL-C scores and 12 items from the MASQ.

In the final step, researchers examined whether wives reported different levels of trauma-specific symptoms versus generic symptoms depending on how they attributed their symptoms. Wives who attributed their symptoms to their husbands' military experiences were experiencing STS (Renshaw et al., 2011).

The results of Renshaw et al.'s (2011) study indicated service members received a mean score on the PCL-C of 50.06 (*SD* = 11.45), and the wives of service members received a score of 24.87 (*SD* = 15.36). Of the wives, 20 denied all symptoms on the PCL-C, and 79 wives fell below the clinical cut-off on the PCL-C that is indicative of probable PTSD. A total of 45 wives endorsed enough symptoms that were indicative of PTSD. This indicated that between 21.6% and 41.6% of wives endorsed responses on the PCL-C suggestive of PTSD. Of the 62.4% of wives who endorsed some symptoms of PTSD on the PCL-5, 24.7% indicated their responses were based on a combination of their husband's military experience and experiences in their own lives, and 12.9% of wives endorsed their symptoms being solely attributed to their spouses' military experiences. These results indicated that some of wives in the study endorsed PTSD symptoms that may reflect STS. Additionally, results showed that generic symptoms items on the PCL-C were a better representation of general psychological distress than trauma-specific items on the PCL-C, as suggested by wives' responses on the MASQ being significantly and positively correlated with their PCL-C overall scores (*r* = .70), trauma-specific symptoms (*r* = .57), and generic symptoms (*r* = .71). Finally, researchers found no main effects for type of symptom (i.e., trauma-specific vs. generic) by conducting a two-way analysis of variance suggesting that wives who did attribute their symptoms to their husband's military experience may be experiencing symptoms of STS (Renshaw et al., 2011). In sum, Renshaw et al.'s (2011) study suggested more than half of the wives attributed their traumatic experience(s) and

symptoms of trauma to events that occurred in their life rather than trauma events experienced by their husbands' military experience, while less than 20% of wives indicated their symptoms were due to their husbands' military experiences. Then authors concluded that that it is a possibility the wives were reporting general psychological distress rather than symptoms of trauma related to their husband's military experience (Renshaw et al., 2011).

In Renshaw et al.'s (2011) study, several limitations were identified: all of the measures were self-report, a diagnosis of PTSD was not confirmed in service members, all spouses were female civilian wives, and service members were still on active duty. Additionally, couples were enrolled in a research study where there was a chance they would participate in an intervention of marital education, which may limit generalizability because of study selection. Furthermore, causal inference cannot be made from the design of the study. A drawback of the study that was identified by researchers was one interpretation of a measure of PTSD as an STS reaction given that the majority of the wives appeared to be experiencing symptoms other than those of PTSD. Suggestions for researchers looking to explore STS in the future were outlined as utilizing more rigorous measures to identify STS, such as explicitly having participants answering questions regarding their knowledge of their spouses' military experience (Renshaw et al., 2011).

Campbell et al. (2012) researched deployment-related communication in a sample of Vietnam veterans and their partners. Specifically, researchers explored partners' report of communication related to veterans' experiences during war, and whether the association between this type of communication and partner distress was moderated by veterans' level of PTSD. Researchers controlled for a more general measure of communication (i.e., communication not related to deployment) to establish if results were specific to deployment-related communication.

A total of 465 Vietnam veterans and their partners participated in the study. All partners were opposite sex partners. There were a total of 375 male-female partners and 90 female-male couples. In veterans' partners, 62.4% of participants were Caucasian, 19% were African American, and 18.6% were Latino American. In veterans, 77.7% were Caucasian, 19.3% were African American and 2.6% were other. Veterans' partners age range spanned from 21 to 73 years old, with a mean age of 40 years old. Veterans ranged in age from 33 years old to 62 years old, with a mean age of 40 years old. Almost all couples were married (94.4%) and had a mean length of marriage of 14.44 years (Campbell et al., 2012).

In the 1980's, the National Vietnam Veterans Readjustment Study (NVVRS) was a mandated study by Congress. Veterans selected to participate in the study were randomly selected from all Vietnam-era veterans who served between 1965 and 1975 (Campbell et al., 2012). For veterans who agreed to participate in the study, the family interview portion of the NVVRS identified partners as either spouses or romantic partners (Campbell et al., 2012). Additionally, participants were selected to provide a range of functioning, with 31% having a high probability of PTSD, 21% displaying high levels of exposure to combat but subthreshold PTSD, 16% identified as having nonspecific distress, and 32% were low risk. The items for the MPI were found to load onto a single factor for both veterans (Cronbach's alpha = .92) as well as their partners (Cronbach's alpha = .94)

Veterans' symptoms of PTSD were assessed with the Mississippi Scale for Combat-Related Posttraumatic Stress Disorder (M-PTSD; Fontana & Rosenheck, 1994), which is a measure of avoidance/numbing, reexperiencing, and hyperarousal symptoms associated with PTSD. The mean score for veteran's symptoms of PTSD based on the M-PTSD was 74.27, which is below the clinical cut-off signifying PTSD. Both veterans and spouses were assessed

with the Marital Problems Index (MPI; Rust and Pickard, 1987) which assesses relationship distress and dissatisfaction. Questions utilized on the measure consisted of items such as, “How often do you and your partner quarrel?” and “In general, how often do you think that things between you and your partner are going well?” The Psychological Distress Index (PDI; Renshaw et al., 2010) was administered to veteran’s spouses in the current study (Campbell et al., 2012). The PDI is a 25 items measure assessing veteran’s partners broad psychological function with-in the past year. Communication in spouses of veteran’s regarding war was also assessed. Three separate questions were asked to identify the frequency of veterans’ discussing war, partners’ listening to their spouse talk about war, and partners’ understanding of veterans’ experiences of war. As these questions were strongly intercorrelated, a Vietnam-specific communication score was created by summing up the questions. A variable assessing general communication in the relationship was assessed by utilizing three questions about listening, talking about, and understanding veteran’s feelings.

Analysis showed that Vietnam-specific communication was significantly and positively correlated with general communication and contrastingly, general communication was significantly and negatively correlated to both veterans’ PTSD and their spouses psychological and marital distress. Regression analysis of partner’s distress showed that relationship distress was significantly correlated to general communication and veterans’ PTSD ($F = 59.73$, $p < .001$). However, there was no moderation effect of the association of communication and relationship distress, as these interactions were not significant as related to general communication and veterans’ PTSD. Regression analysis also showed that partners’ psychological distress were significant predictors of veterans’ PTSD and general communication ($F = 26.03$, $p <.001$). Vietnam-specific communication interaction was also a significant predictor of veterans’ PTSD.

However, the main effect of Vietnam-specific communication and the interaction of PTSD and general communication were not significant. When a simple slopes analysis was conducted, this showed that at higher levels of PTSD (i.e., 1.5 standard deviations above the mean), the relationship between communication about psychological distress in partners' and Veteran's PTSD symptoms were shown to be positive ($\beta = .22$, $p < .01$), but at lower levels (i.e., -1.5 standard deviations below the mean) such associations were not significant ($\beta = -.12$, $p = .15$). These results indicate that for veterans experiencing low levels of PTSD, the association of Vietnam-specific communication with partners' psychological distress is similar to the association of general communication with psychological distress. However, when high levels of PTSD are indicated in veterans, the association between Vietnam-specific communication and relationship distress is negative. Results are indicative of deployment-related communication being associated with both partner distress as well as partner benefits, depending on whether the veterans' level of PTSD symptoms are high or low. Regarding relationship distress, communication about Vietnam was not associated with lower distress in spouses. However, when general communication and veteran's PTSD symptoms are controlled for, analysis indicates neither of these are associated with relationship distress in partners of veterans with PTSD, and there was no moderation based on PTSD symptom severity in veterans. Based on those results, it appears that the general communication style of veterans and their partners are a more heavily weighted factor in partners' overall relationship satisfaction compared to communication about war. It also appears Vietnam-specific communication was not bivalently associated with partners' psychological distress, but additional analyses indicated the association between Vietnam-specific communication and partners' psychological distress became increasingly negative, and as symptoms of PTSD increased above clinical cutoff ranges, the

association became increasingly positive. In other words, communication about deployment was not significantly connected to less psychological distress in partners when veterans did not present with significant symptoms of PTSD. However, increased PTSD symptoms in veterans were associated with more psychological distress in veteran's partners (Campbell et al., 2012).

The authors noted several limitations of their study. First, they identified their operationalization of communication was limited. Secondly, data was gathered a at minimum of 10 years after the veteran's return from combat, meaning that couples who continued to talk about Vietnam frequently may be different than couples who speak frequently about more recent military deployments. Additionally, the data utilized in the study was cross-sectional; therefore, causation could not be established. Finally, the generalizability of the study may be limited and may not apply to veteran and spouse populations who were not part of Vietnam. It is unclear if this study is consistent with previous research as authors noted that, to their knowledge, this is the first study examining psychological distress in relation to deployment related communication (Campbell et al., 2012).

Suicidal Ideation

Zerach et al., (2016) assessed suicidal ideation in wives of ex-POWS who experienced long-term PTSD. Participants in the study consisted of 233 Israeli husband and wife couples. Husbands were veterans from the 1973 Yom Kippur War. Participants were divided into two groups: 142 ex-POWs and a control group of 91 couples in which husbands were veterans, fought in the Yom Kippur War but were not ex-POWs. The participants in the control group were selected due to their similarities with the experimental group (i.e., similar age, military status, trauma experience). Data was collected from husbands during three separate points in time: Time1 (1991), Time2 (2003), Time 3 (2008-2010). Data was gathered from wives twice, at

Time1 (2003-2004) and Time2 (2010-2011). This study utilized data collected from husbands at Time1 from 2003-2004, and wives' data was collected at Time1 and Time2. Regarding demographic variables of both the control and study groups (i.e., ex-POWs and non ex-POWs), there were no differences noted among the groups. The mean age was 57.89 years old, and their mean length of marriage was 29.48 years. The mean number of children for the experimental group was 3.27 and for the control group was 3.24. The mean number of years of education was 13.97 years. Husbands and wives for the study were recruited via their contact information they provided during participation in a previous longitudinal study they partook in. Measures for the study to gather information included the PTSD Inventory (PTSD-I; Solomon et al., 1993) and the Symptom Checklist-90 (SCL-90; Derogatis & Lipman, 1977). Both husbands and wives were given the PTSD-I to assess their symptoms of trauma (i.e., PTSD in husbands and STS in wives). The items on the PTSD-I assessed PTSD based on the *DSM-IV-TR*. Wives were asked to complete the PTSD-I based on their husbands' military experiences (e.g., combat or captivity). Husbands were asked to complete the PTSD-I based on combat or captivity. Suicidal ideation was assessed in husbands and wives utilizing two items from the SCL-90. The items utilized asked questions regarding having "thoughts about ending your life" and "thoughts about death." Symptoms of depression for both husbands and wives were measured with a substance of the SCL-90 (Zerach et al., 2016).

To analyze the data in the study, researchers divided secondary traumatic stress into two categories (i.e., high and low) by adding and subtracting a standard deviation to the mean score. Depression was used as a covariate. The first analysis of data compared secondary traumatic stress and suicidal ideation among the experimental group and the control group of wives, and depression was controlled for. The results indicated that among the wives of ex-POW's,

symptoms of secondary trauma were not contributors to suicidal ideation (b = -0.001, p = .98). However, contrastingly, in the control group, wives that reported more symptoms of traumatic stress also reported the higher level of suicidal ideation (β = .24, p = .001). The next analysis examined study variables that contributed to change in suicidal ideation from Time1 to Time2 in wives. Results indicated there was a significant contribution of suicidal ideation in Time1, which explained the suicidal ideation at Time2. Throughout Time1 and Time2, the report of suicidal ideation slightly increased over time from 0.44 to 0.50 in wives (i.e., both the control group and wives of ex-POW's), which showed the stability of suicidal ideation over time. However, upon further investigation, researchers found the control group significantly contributed to the explanation of change in SI between Time1 and Time2. Next, researchers analyzed the bidirectional association between secondary traumatic stress symptoms and suicidal ideation in wives over time at Time1 and Time2. Results indicated that symptoms of traumatic stress as well as suicidal ideation was stable over time for both the control and experimental group. Wives of ex POWs that reported high levels of secondary traumatic stress or suicidal ideation at Time1 also reported high levels of secondary traumatic stress and suicidal ideation at Time2. Contrastingly, further analysis indicated in wives of ex-POWs, there was not a mutual contribution of secondary traumatic stress and suicidal ideation, indicating that the level of secondary traumatic stress does not explain the change in suicidal ideation and suicidal ideation does not contribute significantly to explaining the change in secondary trauma symptoms. In the control group of wives, findings suggested that if the level of suicidal ideation was higher at Time1, then the increase in secondary trauma between Time1 and Time2 was higher. Secondary trauma symptoms increased from 1.87 at Time1 to 5.16 at Time2 for control group wives. However, secondary trauma symptoms did not contribute significantly to changes in suicidal

ideation for this group. Finally, Zerach et al. (2016) studied the effects of PTSD and secondary trauma symptoms and change of suicidal ideation from Time1 to Time2 for husbands and wives. Researchers used the APIM, which estimates actor and partner effects. Actor effects were defined as effects of the husbands' suicidal ideation or PTSD during Time1 on his suicidal ideation at Time2. Actor effects were also reported for the impact of wives' suicidal ideation or STS at Time1 on her suicidal ideation at Time2. Partner effects were recognized the effects of the husbands' suicidal ideation or PTSD at Time1 on the wives' suicidal ideation at Time2 and the effects of the wives' suicidal ideation or symptoms of secondary trauma at Time1 on the husbands' suicidal ideation at Time2. The analysis indicated that for both groups, actor effects of husbands' symptoms of PTSD positively contributed to an increase of suicidal ideation over time. Additionally, it was also shown that wives' symptoms of secondary trauma positively contributed to the increase of suicidal over time. In wives of ex-POW's, husbands' suicidal ideation positively contributed to her increase of suicidal ideation over time, which was not true for the control group. The more severe the husbands PTSD symptoms and suicidal ideation, the more moderate the increase in wife's suicidal ideation. Researchers concluded that based on these findings, an increase in ex-POW's symptoms was associated with better outcomes among wives' suicidal ideation based on an increase in wives' psychopathology (Zerach et al., 2016).

In sum, this study indicated that ex-POWs' wives suffer from higher levels of secondary trauma symptoms when compared to wives in a control group of combat veterans. There also does not appear to be any significant difference between wives in the ex-POW group and wives in the combat veteran group in relation to suicidal ideation. Results did indicate that for wives in the control group there was a significant association between secondary traumatic stress symptoms and suicidal ideation. However, in wives of ex-POW's, secondary traumatic stress

symptoms did not contribute to the explanation of their suicidal ideation. These results indicate that wives of ex-POWs may be less vulnerable to suicidal ideation, and these results can be viewed as reliable given that depression was controlled for in the study using a statistical procedure. This covariant control is important to identify, as previous research has reported a high significant correlation between suicidal ideation and depression (Nock, 2014). Additionally, authors discussed that while it appears that wives' suicidal ideation in both groups is heavily influenced by their spouses' symptoms of PTSD, this influence is in a negative direction. These results indicate that as husbands' symptoms of distress and suicidal ideation increased, both groups of wives' symptoms of suicidal ideation decreased. Overall, this study reflects that wives of ex-POWs experience psychological distress due to their husbands' being held captive in war. However, psychological distress of wives of ex-POWs does not contribute to suicidal ideation. The authors suggested that such findings could be related to wives being in a state of readiness to caretake and support their husbands, which may be a protective and safety feature for wives. Assumption of responsibility for their husbands may make it less likely that their wives contemplate suicide (Zerach et al., 2016).

A number of studies have reported variation in emotional symptoms in those suffering with traumatic stress symptoms, and the Zerach et al. (2016) study differs from some previous research but is consistent with other research. For example, some studies have identified a significant difference in emotional symptoms between veterans' wives and control group wives (Klarić et al., 2012). However, the Zerach et al. (2016) study is more line with studies have found no significant differences between ex-POW's wives and wives of non-ex-POWs (Dent et al., 1998). Additionally, this study is the first to study suicidal ideation in wives of ex-POWs and to identify low levels of suicidal ideation in wives of ex-POW's (Zerach et al., 2016).

Several limitations of the study were noted by authors. First, the self-report measures in the study may have led to social desirability bias, particularly in relation to suicidal ideation. Additionally, there was not information gathered regarding precombat assessment of functioning for wives or veterans, which limits inferring causality. Finally, this study was unable to monitor changes in participants between the years of 1973 and 1991 (Zerach et al., 2016).

Psychological Distress in Families of Service Members (Children and Mothers)

Hadi et al. (2006) studied the impact of secondary war-related trauma in children and adolescents. In the study, the fathers of Kuwait children and adolescents had experienced war-related trauma. Participants were recruited from the Martyr's Office in Kuwait, which is a government organization that cares for families whose fathers were missing, arrested, or killed. Participants in the study consisted of 111 Kuwaiti middle to upper class children enrolled in Kuwait schools who were between 9 and 12 years old at the time of the initial data collection in 1993. These individuals were between 19 and 22 years old when data was collected in 2003 for the second time. Children and adolescents in the study were classified based on their father's war-related experience in the Gulf War. Group one consisted of 33 children whose fathers who were killed (17 girls and 16 boys). Group two was composed of 29 children whose fathers were missing (12 girls and 17 boys). Group three was made up of 22 children whose fathers were arrested but had returned to their family (11 girls and 11 boys), and group four, the control group, consisted of 27 children who were either out of the country or whose families were not impacted by war (14 girls and 13 girls). Additionally, 59 mothers of the husbands were assessed. There were 22 mothers in group one, 13 mothers in group two, 7 mothers in group three, and 17 mothers in group 4. The four groups were distinguished by varying traumas experienced by fathers. The groups were formed due to cultural consideration of the role of fathers in Kuwaiti

culture, as in that culture, the man is responsible for taking care of and the safety of his family. Participants were tested by one of 15 psychologists. Psychological scales were administered in a fixed order, and psychological measures were translated into Arabic. Both children and their mothers were administered the Post Traumatic Stress Disorder Symptom Scale (PTSDS; Davidson et al., 1989), which is a 17-item measure of PTSD based on the *DSM-III-R* (American Psychiatric Association, 1987) assessing intrusive reexperiencing, avoidance, increased arousal, and general numbing. Children and mothers were instructed to answer questions on the PTSDS related to events that occurred during the war. Additionally, children were administered the Child Depression Inventory (CDI; Kovacs & Beck, 1977), a self-report a 27-item measure of depression. Children were also assessed with the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1979) a self-report measure consisting of 37 items. The RCMAS is a self-report measure that assesses intensity of anxiety. Finally, children were assessed with the Crisis Structured Interview (CSI), which was developed by researchers of the study. The CSI assessed children's level of exposure to violence and trauma during the Gulf War. Items assessed what happened to children' siblings, other relatives, acquaintances, and friends. Additionally, the 16-item, self-report questionnaire gathered information on the amount of violence children were exposed to in real life, in pictures, and on television. Mothers were administered the Beck-Depression Inventory (BDI; Beck et al., 1961), that the researchers revised to exclude the last question. Mothers were also assessed with the Symptom Checklist-90 Revised (SCL-90-R; Derogatis, 1983), which is a broad measure of psychological concerns and symptoms. In 2003, the PTSDS and BDI were administered to the young adults (i.e., initially children in the study) to assess symptoms of PTSD and depression. Additionally, in 2003, the young adults were assessed with the Trait Anxiety Test (Spielberger & Sydeman, 1994), which is

a 20-item self-report measure used to assess worry, nervousness, apprehension, and tension (Hadi et el., 2006).

Data analysis utilized analysis of variance (ANOVA) and HDS post hoc procedure (Tukey procedure) for analyzing exposure to war-related trauma and gender. The results indicated a significant group effect ($F = 15.02$, $p < .001$) but there was not a significant interaction or gender effect ($p > .05$). Post-hoc analysis confirmed the control group (i.e., group 4) had a significantly lower mean level of exposure ($M = 4.5$; $SD = 1.5$) compared to the groups where fathers were killed ($M = 7.8$; $SD = 2.8$), arrested ($M = 8.4$; $SD = 1.8$), or missing ($M = 7.4$; $SD = 2.2$). No significant differences were indicated for the trauma groups (i.e., groups 1-3) in relation to exposure to war-related trauma ($p > .05$). Data gathered from the PTSDS measures was analyzed as Trauma Group x Gender x Time (4 x 2 x 2). There were statistically significant main effects for the trauma group, ($F = 7.32$; $p < .001$) and a main effect for time ($F = 19.16$, $p < .001$). There were no significant interactions noted. However, data showed that those who fathers were arrested reported the highest symptoms of PTSD means followed by participants whose fathers were reported missing. The control group exhibited the lowest symptoms of PTSD. The mean PTSD symptoms of all four groups was higher in 2003 than in 1993. A mixed design was also used for the data gathered from mothers. While the interaction between time and group was not significant, the group effect did indicate clinical significance ($F = 7.50$, $p < .001$). There was a trend for the time effect with the mothers ($F = 3.54$; $p = .06$), as mothers expressed lower rates of PTSD in 2003 than in 1993. Data trends indicate that mothers whose husbands were arrested reported the highest symptoms of PTSD followed by mothers whose husbands were killed in war. The control group displayed the lowest mean and post hoc tests confirmed that the control group displayed significantly lower levels of PTSD compared to the group of mothers whose

husbands were arrested or killed. Additionally, the mean of the group in which husbands had been arrested was significantly higher than the group in which husbands were missing. A pattern became clear when examining data by both children and mothers was groups on PTSDS scores were higher where fathers or husbands were arrested compared to missing and control fathers and husbands. Children's and mother's data was combined to assess for changes in time as PTSDS increased with time for children and had the tendency to decrease for their mothers. Data analysis indicated that there was a significant time reaction for children and mothers reporting higher symptoms of PTSD ($F = 8.96$, $p < .01$). Analyses are also indictive of a main effect for relation ($F = 44.92$, $p < .001$), where mothers displayed higher levels of PTSD symptoms compared to their children. Measures of depression and anxiety in 1993 and 2003 indicated there were no significant interactions between gender and group, and there was not a gender main effect. Factorial ANOVA indicated significant group differences for depression in the control group ($F = 4.27$, $p < .01$); however, there were no group differences indicated for anxiety. Additionally, the control group demonstrated lower depression levels compared with the group in which fathers were killed, when measured in both 1993 and 2003. In 2003, there were significant group differences in depression ($F = 3.28$; $p < .05$) but not anxiety ($F = 1.95$; $p > .10$). Depression increased over time for mothers whose husbands were arrested ($F = 7.08$; $p < .01$). Post hoc analysis was also indicative that in 1993, mothers whose husbands were missing endorsed higher depression than control mothers ($F = 6.47$; $p < .01$). In 1993, mothers in the group whose husbands were arrested reported higher anxiety than the control group ($F = 3.34$; $p < .05$). In 2003, in the group where fathers and husbands were arrested exceeded all other groups in having higher levels of anxiety ($F = 4.48$; $p < .01$). In sum, Researchers concluded that both mothers and children of service member fathers who were arrested during war time reported the

highest symptoms of traumatic stress and the control group displayed the lowest symptoms of traumatic stress. In 1993, when mothers and children initially completed questionnaires for the study, the highest levels of depression were observed in family members (i.e., children and mothers) of service members who were killed or missing. However, in 2003, the highest levels of depression as well as anxiety were seen in family members in the arrested group (Hadi et el., 2006).

Researchers reported their findings are consistent with previous research. For example, one study found that when exposed to severe violence, one may experience unremitting symptoms (Hadi et al., 2006). Additionally, another study reported adolescents exposed to terrorism reported symptoms of traumatic stress 17 years following exposure (Hadi et al., 2006). A limitation of the Hadi et el. (2006) study noted by authors was the limited power for testing gender by group interactions stemming from small cell sizes, which may have led to limited clarity for gender effects (Hadi et el., 2006).

In sum, it is important to discuss the mental health outcomes, disorders, and symptoms in intimate partners and children of service members who have trauma related symptoms. The literature considered in this review has presented mixed findings of whether intimate partners and children develop trauma related symptoms associated with their spouse or parent's military related trauma symptoms. The above studies have also provided insight into additional difficulties other than trauma related symptoms that intimate partners and children of service members may face. Renshaw et al.'s (2011) study reported that while some wives of service members may report symptoms of STS related to their spouse's military experience, a majority of wives that reported PTSD symptoms may reflect general psychological distress related to experiences that occurred in their life rather than their spouses' military related trauma. Zerach et

al.'s (2016) findings suggested that wives of ex-POWs' display higher levels of STS symptoms compared to wives of combat veterans and an increase in spouses' PTSD symptoms is related to an increase in wives' symptoms. The researchers also reported that ex-POW's trauma related distress is longitudinally related to their significant other's secondary trauma as well as suicidal ideation. However, this study also found there does not appear to be a significant difference between wives in the ex-POW group and wives in the combat veteran group in relation to suicidal ideation. These findings may be due to the idea that ex-pow wives may be in a state of readiness to provide care for their husbands and this state of readiness may serve as a protective factor for wives.

Hadi et al., 2006 found that there appear to be long-term effects of war on mothers and children, which may be influenced by their fathers' war-related experiences. Similarly, Campbell et al., 2012 concluded that Vietnam specific communication moderated veteran's symptoms of PTSD symptom severity. Specifically, the communication spouses had regarding Vietnam was positively correlated with spouses' psychological distress. This finding supports attending to couples' communications, particularly when conducting couple psychotherapy for treatment is an important factor. In conclusion, these findings support the idea that there are a variety of mental health outcomes, disorders, and symptoms in intimate partners and children of military personal with trauma related symptoms. This review supports that intimate partners and children experience distress in various forms, which may not be easily distinguished (i.e., STS, psychological distress, etc.). These findings also highlight that there may also be protective factors for spouses as well.

CHAPTER V: DISCUSSION

Summary of Findings

The aim of this review was to examine secondary traumatic stress in intimate partners and children of service members, which included reviewing the history of the diagnostic criteria for PTSD and exploring responses to trauma (i.e., STS, VT, burn out). Specifically, this review focused upon reviewing if intimate partners and children of service members are at risk for STS. Another aim of this literature review was to identify risk factors for developing STS in intimate partners and children of military service members. Finally, the mental health outcomes, disorders, and symptoms in intimate partners and children of military service members other than STS was explored.

Secondary Traumatic Stress in Intimate Partners and Children of Service Members

There have been mixed findings regarding secondary traumatic stress in intimate partners and children of service members. A theme across studies appears to be the more severe the trauma symptoms that service members are facing, the more likely it is that their loved one experiences symptoms of secondary traumatic stress. Additionally, while various studies have found intimate partners of services members experience symptoms of STS, it is at times unclear if partner's symptoms are related to their spouse's symptoms of PTSD or something else.

Intimate Partners of Service Members. Several studies have reported to varying degrees the prevalence of trauma related symptoms in intimate partners of service members. One study found that wives whose husbands had PTSD reported experiencing more severe trauma related symptoms when compared to wives whose husbands did not have PTSD. The study further indicated that wives whose husbands reported experiencing trauma related to combat were more likely to have a PTSD diagnosis comparted to husbands who did not experience a

trauma while engaging in active combat. Additionally, wives perceived husbands who reported trauma related symptoms to have more aggression compared to husbands who did not report trauma related symptoms (Caspi et al., 2010).

Several studies have shown symptoms of PTSD or STS in intimate partners of peacekeepers, combat soldiers with PTSD, and ex-POWs with PTSD (Dirkzwager et al., 2005; Ein-Dor et al., 2010; Herzog et al., 2001). One study also found that wives with higher attachment insecurity had higher symptoms of PTSD (Lahav et al., 2015). Additionally, the severity of husbands' PTSD has been associated with elevated STS symptoms among wives (Lahav et al., 2015). Overall, it appears that spouses of service members are likely to experience trauma related symptoms, particularly if their spouse has PTSD. It also appears that attachment insecurity may play a role in the degree of symptoms severity. Based on the above findings, it does appear that intimate partners are at risk for developing secondary traumatic stress when their spouse suffers with symptoms of trauma. However, the research in this area needs to be further explored, particularly studies need to focus on ruling out other traumas that spouses of service members may have faced as in various studies it is unclear if spouse's symptoms were due to husband's trauma or something else.

Children of Service Members. One study of MMPI-2 clinical scale elevations in children of Vietnam veterans with PTSD showed that 78% children of Vietnam war veterans with PTSD reported at least one clinically elevated scale (i.e., depression, psychopathic deviate, psychasthenia, and schizophrenia; Beckham, 1997). Another study found that both mothers' and fathers' symptoms of traumatic stress were related to their adult children's symptoms of traumatic stress Zerach et al. (2017). Specifically, findings supported that fathers who were ex-POWs with symptoms of traumatic stress and mothers' symptoms of trauma predicted symptoms

of trauma in their adult children. Mothers' symptoms of trauma were also shown to be a mediator between fathers and adult children's trauma related symptoms. While it remains unclear if children of service members report secondary traumatic stress because of the limited amount of research, it is probable that children of service members with PTSD are at risk for having symptoms of a mental health disorder. Because research on secondary traumatic stress in children of service members has been very limited, this is a topic that should continue to be explored. However, the small amount of research that is available concludes that children are at risk for a mental health disorder when their parent is a service member who is displaying trauma related symptoms.

Risk Factors of Secondary Traumatic Stress in Intimate Partners and Children of Service Members

There have been various risk factors identified for developing trauma related symptoms in various helping professions, in service members, and in children. Several studies have identified similar risk factors across various professions and settings for developing STS. However, there has been little research on risk factors for developing STS in intimate partners of service members and no research to date on risk factors for developing STS in children of service members.

General Risk Factors for Developing Secondary Traumatic Stress. Several studies have noted demographic variables (e.g., female, non-White, and low education), service related variables (e.g., longer cumulative deployments, lower rank, experiencing aversive life events outside of the military, being in the U.S. military compared to other U.S. military branches, being a combat specialist, more exposure to combat, discharging a weapon, severe trauma, witnessing someone being wounded or killed, deployment related stressors), mental health and

trauma exposure (e.g., prior psychological concerns, distraction, though suppression, comorbid psychological problems, perceived life threat), and social factors (i.e., limited social support, social withdrawal, poor family functioning) as risk factors for STS. Post deployment variables were also identified to include comorbid psychological concerns and aversive life events not related to the military (Trickey et al., 2012; Xue et al., 2015). Significant predictors of PTSD in intimate partners of veterans include the number of war events experienced by the spouse as well as the severity of PTSD the spouse endorsed (Bramsen et al. 2002) Another study found that both children and mothers' symptoms of secondary traumatic stress were higher when fathers or husbands were arrested. Results also found that mothers reported higher levels of PTSD symptoms than children (Hadi et al., 2006). There have also been several protective factors identified for individuals such as post-deployment support for service members, health promoting leadership and self-care in individuals in helping professions (Penix et al., 2019; Xue et al., 2015).

Identifying risk factors for those who are highly likely to be exposed to trauma (i.e., service members, emergency medicine personnel, etc.) could help them ensure to utilize protective factors. Individuals who utilize protective factors may also be shielding their loved ones from potentially developing STS as research shows it is possible to develop trauma related symptoms when exposed to a loved one who experiences trauma related symptoms. Additionally, being aware of risk and protective factors for developing STS could also benefit family members of loved ones who are likely to be exposed to trauma.

Mental Health Outcomes, Disorders, and Symptoms in Intimate Partners and Children of Service Members

While some intimate partners and children of service members may not go on to develop STS, it is possible they may experience distress in other ways, such as in the form of psychological distress.

Psychological Distress. One study found that wives who report trauma related symptoms may be experiencing general psychological distress rather than STS relating to their husband's military experience as well as experiences from their own lives (Renshaw et al. 2011). Another study found that when Vietnam veterans and spouses communicated about deployment, symptoms of psychological distress in a veteran's spouse increased if veteran has significant symptoms of PTSD (Campbell et al., 2012). Thus, while spouses of service members may not be experiencing STS, they may experience psychological distress.

Suicidal Ideation. Suicidal ideation has been infrequently studied in family members of military personnel with PTSD. However, one study assessed suicidality in wives of ex-POWs who had long-term PTSD. The study found that while wives of ex-POWs experience psychological distress due to husbands' ex-POW status, they do not seem to experience suicidal ideation in response to their spouses' trauma history. In fact, wives' symptoms of suicidal ideation were found to decrease as husbands' symptoms increase, perhaps as a result of increased caretaking focus (Zerach et al. (2016). Limited data is available in this area; however, given high rates of suicide attempts and completion in military populations, expanding research regarding suicidality in their family members is also needed.

Clinical Implications

Based on this review, there is evidence that spouses and intimate partners of service members can be impacted by their loved ones' trauma history. It is also apparent from this review that having a loved one who is a service member may lead to general distress in service members' loved ones. While there are many mental health treatment options focused on treating the individual who directly experienced trauma, it is clear that their loved ones are in need of support and treatment. Based on this review, treatment options to consider for loved ones may range from treating general distress in loved ones of service members to trauma focused treatment.

Family Focused Treatment. One treatment approach to consider for service members and their loved ones is to engage in family therapy. Family therapy can be conducted using a trauma focused lens if need be. For example, James & MacKinnon (2012), offered ten principles to integrate a trauma framework into family therapy. The principles consisted of the following: attend to safety, use a trauma-focused genogram roadmap, trauma events are connected to a time and relationship sequence, one family members' emotional behavior may lead to another family members heightened emotional reactivity, unresolved trauma may contributed to the current presenting problem, avoidance drives PTSD, negative cognitions are linked to unresolved traumatic memories, implicit memories are less disturbing once processed, retelling of traumatic events can create a cathartic release, and therapist must care for self. In addition to trauma focused family therapy, family therapy can also be utilized to address general distress within the family and to address common difficulties that come to families due to a loved one being a service member. Another mode of treatment from a family perspective may include treating general stress within the family. Additionally, it would likely be beneficial for service members

to have more family focused interventions readily available and offered. Such services would likely be useful via organizations such as Veterans Affairs.

Protective Factors. This literature review identified several protective factors that decreased one's likelihood of developing PTSD and STS. Both service members and their loved ones could benefit from being made aware of these protective factors and having access to ways in which families can utilize the protective factors. Such protective factors would likely be beneficial in reviewing and ensuring access to both pre and post combat.

Prevention and Intervention for Secondary Traumatic Stress. Overall, the impact of living with a loved one who served in the armed forces impacts their family. Therefore, it is imperative that service members seek help for mental health concerns as a means to not only reduce their only mental health symptoms but to also decrease family distress and decrease the likelihood of the family facing negative mental health impacts due to veterans' own distress or trauma related symptoms. Decreasing the stigma for mental health treatment should continue to be addressed. Additionally, government services such as Veterans Affairs should continue to improve mental health treatment services and accessibility.

There are several individual prevention strategies to consider for managing STS in adults to include enhancement of life balance, relaxation techniques, time management, and a plan for coping. Individual treatment options may involve CBT, joining a support group, and learning new self-care strategies (Bell et al., 2003; Figley, 1995; Figley 2002, Osofsky, et al., 2008; Pryce et al., 2007). While it is likely various EBPs may be useful in treating STS, it should be kept in mind several EBPs, such as PE, would need the patient to have an identifiable criterion A trauma based on *DSM-5* criteria in order to participate in the treatment. Overall, while there are many treatment options for PTSD, it appears that research is limited on treatment for STS.

Treatment for Psychological Distress. Additionally, that are several treatment recommendations for psychological distress. Problem-solving therapy (PST), solution-focused group therapy (SFGT), and Skills Training in Affective and Interpersonal Regulation (STAIR) have been shown as effective treatments for psychological distress in adults (Akechi et al., 2005; Carrera, 2016; Jackson et al., 2019). Cognitive behavioral therapy (CBT) and early adolescent skills for emotions (EASE) have been shown as successful treatments for psychological distress in adolescents (Brown et al., 2019).

Treatment for PTSD. Treatment options for PTSD should be explored not only for service members but also for loved ones. Service members who receive trauma focused treatment may experience symptom reduction and reduce the negative mental health impact on loved ones. Treatment options that are recommended by the American Psychological Association (APA) for the treatment of PTSD include the following for adult patients: cognitive behavioral therapy (CBT), cognitive processing therapy (CPT), cognitive therapy (CT), and prolonged exposure therapy (PE). Other treatments that APA conditionally suggests is eye movement desensitization and reprocessing (EDMR), narrative exposure therapy (NET), and brief eclectic psychotherapy (BEP; American Psychological Association, 2017). Evidence-based practices (EBPS) for children and adolescents that may be beneficial for children with PTSD include cognitive behavioral therapies such as trauma-focused cognitive behavioral therapy (TF-CBT; Leenarts et al., 2013).

Psychopharmacological Treatment. In addition to psychotherapy interventions for PTSD, STS, and psychological distress, psychotropic medications have sometimes been shown to be effective in the treatment of trauma. Currently, the strongest psychopharmacological evidence base treatment of PTSD in adults is with selective serotonin reuptake inhibitors (SSRIs)

such as fluoxetine, paroxetine, and sertraline as well as selective serotonin-norepinephrine reuptake inhibitors (SNRI) such as venlafaxine. Currently, the Food and Drug Administration (FDA) has only approved sertraline and paroxetine for to be used as psychotropic treatment for PTSD, all other medications are considered to be off label treatment options (Beebe et al., 2001; Bradey et al., 2000). In children and adolescents, the psychotropic mediations imipramine, divalproex sodium, and sertraline have resulted in reduced symptoms in randomized controlled trails (Huemer et al., 2010).

Limitations of Review

The current review has various limitations. Although an exhaustive search was undertaken, there were few studies that met all of the inclusion criteria due to the lack of studies assessing secondary traumatic stress in intimate partners and in children of service members. Additionally, there were even fewer studies on risk factors globally and even fewer studies in the United States for developing secondary traumatic stress as well as psychological distress in intimate partners and of children of service members.

A second limitation of this review is the methodological shortcomings of the studies that have been reviewed such as small sample sizes, a lack of a rigorous research design, a lack of diversity among various samples, a reliance on self-report measures, and limited generalizability of several studies. A final limitation of this review is that most studies did not rule out or account for wives or children's own trauma experiences.

Recommendations for Future Research

Future research should continue to expand on STS, as there is a limited body of research on the topic, particularly research examining how family members such as intimate partners and children are impacted by a loved one who has experienced trauma, both in the United States and

globally. Possible areas of expansion may include empirical studies on STS in intimate partners and children of first responders, medical doctors, nurses, psychiatrists, and psychologists, as well as continued expansion within military populations. The demographics researched should also be expanded. For instance, the majority of all the studies in this review examined heterosexual couples. Areas of expansion should include non-heterosexual couples as well as individuals of varying ethnicities as well as inclusion of intimate partners and children of female service members who have experienced trauma. An additional area of research should focus on treatment for STS and psychological distress in both adults, adolescents, and children. While there are an abundance of empirical studies and treatment options for PTSD, there are far fewer studies on effective treatments for STS. One area of focus may be to continue to research psychotherapy that takes a family-based approach for families and service members. Additionally, EBPs with empirical support for treating PTSD should also be studied in their effectiveness to treat STS. Another area that future research should explore is partner aggression and intimate partner violence that loved ones of service members with PTSD may face. This review highlighted that intimate partners of service members at times endorse more trauma related symptoms than their partners, which signifies that their symptoms are not necessarily linked to learning about the trauma their loved one endured. Further exploring partners symptoms could help with understanding their symptoms, clinical implications, and improved support for families of military personnel. Leadership and organizations that support service members, such as Veterans Affairs, should focus on support and treatment interventions for the family rather than just the service member. A final area of future research should focus on updating diagnostic criteria in the *DSM* to better represent secondary traumatic stress within the PTSD diagnosis or within its own diagnosis. If the *DSM* is able to better recognize STS, this

recognition could provide more opportunities for individuals to have access to appropriate treatments.

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