

## ABSTRACT

### RELATIONAL PARTNERS OF FIRST RESPONDERS: A CONFLUENCE OF TRAUMA, COPING, BURDEN, AND WORLDVIEWS

By

Theresa Paynter Baxter

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The purpose of this study was to identify relationships among variables related to the experiences of female spouse/partners of emergency responders. The 30 women sampled had sought treatment for occupation-related PTSD.

The First Responder Support Network (FRSN), a non-profit organization in Northern California, provided data for the study. Instrumentation consisted of a symptom inventory of participants' trauma and questionnaires regarding coping styles, worldviews, and perception of burden in response to living with a first responder.

Traumatic stress symptoms were reported more frequently than among the general population but similar to those of spouses of veterans. Findings suggested a diminished sense of self. Coping styles moderated the effects of trauma and were significantly related to worldviews. A substantial degree of burden was reported but burden levels were not related to traumatic stress.

The results indicated that first responder spouse/partners should be offered individual trauma-focused treatment to strengthen self-identity and fortify positive coping strategies.

RELATIONAL PARTNERS OF FIRST RESPONDERS: A CONFLUENCE OF  
TRAUMA, COPING, BURDEN, AND WORLDVIEWS

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Committee Members:

Marilyn K. Potts, Ph.D. (Chair)  
Lisa K. Jennings, Ph.D.  
Nancy Meyer-Adams, Ph.D.

College Designee:

Christian Molidor, Ph.D.

By Theresa Paynter Baxter

M.MSc., 1984, Emory University

May 2013

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## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS .....	iii
TABLES .....	vii
CHAPTER	
1. INTRODUCTION .....	1
Purpose of the Study .....	3
Definition of Terms .....	3
Multicultural Relevance .....	4
Importance to Social Work .....	5
2. LITERATURE REVIEW .....	7
Traumatic Stress Disorders .....	7
Posttraumatic Stress Disorder .....	7
Secondary Traumatic Stress Disorder .....	10
Epidemiology .....	11
Features of Trauma Disorders .....	12
Co-Morbidity .....	12
Suicide .....	13
Shame .....	13
Family Disruption .....	13
Trauma and First Responders .....	14
Living with a Traumatized Partner .....	15
Sense of self .....	15
Ambiguous loss .....	16
Emergency Responder Partner Stressors .....	17
Shift Work .....	17
Organizational Culture/Identity .....	18
Safety on the Job .....	19
Caregiver Burden .....	19
Coping Style .....	20
Posttraumatic Growth .....	22
Treatment Considerations .....	24

CHAPTER	Page
3. METHODS.....	27
Design .....	27
Sample and Data Gathering .....	28
Instruments .....	29
Data Analyses .....	32
4. RESULTS .....	34
Demographics Characteristics of Sample.....	34
Instrument Scores.....	34
Trauma Symptom Inventory-2 .....	38
Coping Strategy Indicator .....	38
World Assumptions Questionnaire.....	39
Burden Scale .....	39
Bivariate Analyses .....	39
5. DISCUSSION.....	46
Findings and Comparison with Existing Research .....	46
Limitations of Study.....	50
Implications for Future Research.....	51
Implications for Social Work Practice .....	52
REFERENCES.....	54

## TABLES

TABLE	Page
1. Respondent Characteristics .....	35
2. Characteristics of Relationship with First Responder.....	36
3. Instrument Summaries .....	37
4. Correlations: Burden and Other Scale Scores .....	40
5. Correlations: Instrument Subscales with Years of Age and Years Living with First Responder .....	41
6. Correlations: Coping Strategy with Trauma Inventory Subscales.....	42
7. Correlations: World Assumptions with Trauma Inventory Subscales....	44
8. Correlations: Coping Strategy with World Assumptions.....	44

## CHAPTER 1

### INTRODUCTION

The aftermath of trauma as it affects an individual's functioning has been explored in the literature for decades focusing largely on war veteran populations (Herman, 1997). After first appearing in the third revision of the *Diagnostic and Statistical Manual (DSM)*; American Psychiatric Association [APA], 1980), the diagnosis of post-traumatic stress disorder (PTSD) is now identified by three symptom clusters: re-experiencing, avoidance, and hyper-arousal (APA, 2000; Lasiuk & Hegadoren, 2006b).

Although not represented in the *DSM*, secondary traumatic stress disorder (STSD) is recognized as a complementary condition with similar, albeit less severe, symptoms that can affect family members living with and caring for a traumatized individual (Figley, 1995, 1998). Additional symptoms that may develop following prolonged relationships with trauma victims can include the feeling of burden frequently exhibited by emotional and physical exhaustion (Figley, 1998; Pearlin, 1989).

The degree of secondary stress that results from the daily experience of living with a family member with PTSD can be mediated by the type(s) of coping strategies one might employ (Schwerdtfeger et al., 2008). A combined effect of this stress and coping on an individual can be an altered perspective from which one views and relates to him/herself, others, and their environment (Sheikh, 2008).

The idea that “emergency service personnel are at high risk of developing PTSD” (Haslam & Mallon, 2003, p. 277) is well supported in the literature (Miller, 2007; Regehr, 2005; Regehr, Dimitropoulos, Bright, George, & Henderson, 2005; Woody, 2006). However, a paucity of quantitative studies regarding traumatic stress in these populations was found to exist, perhaps because emergency service agencies tend to be closed to outside scrutiny and research (Regehr, 2005).

Correspondingly, the vast majority of the literature surrounding secondary stress disorders identified in a literature search was focused on the wives and partners of combat veterans (Arzi, Solomon, & Dekel, 2000; Calhoun, Beckham, & Bosworth, 2002; Dekel, 2010; Dirkzwager, Bramsen, Ader, & van der Ploeg, 2005; Evans, Cowlshaw, Forbes, Parslow, & Lewis, 2010; Hamilton, Nelson-Goff, Crow, & Reisbig, 2009; Haslam & Mallon, 2003; Manguno-Mire et al., 2007; Outram, Hansen, Macdonell, Cockburn & Adams, 2009). Most trauma studies have concentrated on the intrapersonal mental health treatment of the trauma survivor with minimal focus on any resulting disruptions in the couple or family relationships (Nelson, Wangsgaard, Yorgason, Kessler, & Carter-Vassol, 2002).

An interpretation of statistics indicating that 75% to 90% of the more than 1 million first responders in the United States (U.S. Department of Justice, 2010) are men suggests that the majority of first responder spouse/partners are women. Yet studies found involving first responder wives or partners were rare and limited to qualitative designs (Menendez, Molloy, & Magaldi, 2006; Regehr, 2005; Regehr et al., 2005).

### Purpose of Study

Given the lack of research in this area, the purpose of this study was to identify relationships among multiple variables related to the experiences of the female spouse/partners of emergency responders having sought treatment for symptoms and/or behaviors suggesting occupation related PTSD. Women were asked about their own trauma and mental health symptoms, coping mechanisms they utilized, and perceived level of burden relative to their spouse/partners symptoms. Additional questions were asked related to their perceptions regarding the meaning of their lives since being affected by a spouse/partner exposed to occupational trauma.

### Definition of Terms

For purposes of this study, the following terms and definitions apply:

Emergency responders include police, sheriff, and highway patrol officers; firefighters; detectives; criminal investigators; emergency medical technicians (EMTs) and paramedics.

Spouse/partner refers to a female in a relationship and living, or having lived, with an emergency responder. While the spouse/partner of an emergency responder could be male, the scope of this study is limited to a female sample.

Trauma symptoms refer to any or all symptoms identified within the three symptom clusters of re-experiencing, avoidance, and increased arousal used to diagnose PTSD (APA, 2000). Common co-morbid symptoms related to depression, anxiety, substance abuse, and phobias (Lasiuk & Hegaderon, 2006b) are included.

Burden is defined as the perception of the cumulative negative effects on the well-being of a non-professional caregiver including objective (physical, economic, and social) and subjective (level of confidence and sense of self) factors (Pearlin, 1989).

Coping strategies are characterized by the “behavioral and cognitive efforts used to deal with stressful encounters” (Gilbar, Weinberg, & Gil, 2012, p. 248). Post-traumatic growth refers to either positive or negative outcomes resulting from the integration of trauma experiences into one’s current perceptions of the meaning of life (Joseph & Linley, 2005).

### Multicultural Relevance

As discussed in Ford (2008), PTSD is documented amongst widely diverse cultural groups but symptoms of trauma are not equally distributed. Women are more vulnerable to developing trauma disorders following the experience, either directly or indirectly, of a traumatic event (Breslau, 2009; Brody & Serby, 2006; Foa, Keane, Friedman, & Cohen, 2009; Pietrzak, Goldstein, Southwick, & Grant, 2011; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Effects stemming from PTSD and STSD could conceivably be compounded. The increased risk for major depression, other anxiety disorders, and substance abuse disorders associated with increased trauma symptoms (Breslau, 2009) supports research directed toward spouse/partners of first responders as a sub-culture of women.

Minorities demonstrate increased risk of exposure to traumatic events and the psychological response to discrimination may exacerbate PTSD symptoms (Ford, 2008; Roberts et al., 2011). Additionally, Ford (2008) suggests that racism may be a form of psycho-trauma in and of itself. Furthermore, Marmar et al. (2006) reported a higher

incidence of PTSD symptoms among police officers self-identified as Hispanic American compared to those self-identified as European American or African American. The presence of ethnic differences in the incidence of PTSD symptoms may well extend to the incidence of symptoms of secondary traumatic stress. Differences in ethno-cultural views of the world, definitions of roles within family structures, and values related to caregiving and coping may affect the relationship partner's experiences.

### Importance to Social Work

The experiences of the female participants in this study may suggest a pattern of characteristics typical in women partnering with uniformed authority figures that may increase their vulnerability to the development of mental health disorders, thus warranting additional research. Although much has been written regarding treatment efficacy for PTSD, further research is indicated to identify efficacious treatment for the wives or partners of those suffering when issues of trauma, burden, and altered perspectives about their life roles are presented in combination. Research directed toward this sub-culture of women is consistent with social work values that strive to identify, understand, and integrate disenfranchised groups (National Association of Social Workers [NASW], 2012).

Identified relationships among trauma symptoms, burden, coping style, and worldviews may impact treatment for both first responders with PTSD and their spouse/partners. Comprehensive treatment may include identifying and treating issues that impact the functioning of the first responders' primary support system. In fact, social work practitioners may consider routinely engaging both individuals, as well as

the couple, in the treatment of PTSD, particularly if emergency responder wives demonstrate historical evidence of prior PTSD or STSD. In addition, social work practitioners may engage in outreach to emergency responder agency employee assistance programs to offer educational and/or support group programs for female partners. This could be related to prevention, treatment, or maintenance. Individual family members, the communities in which they live, and society at large are benefited by understanding and addressing factors associated with mental health issues that impact the ability of this potentially high-risk population of women to function effectively.

## CHAPTER 2

### LITERATURE REVIEW

The effects of trauma can be far-reaching with symptoms in one person tending to affect those with whom that person has a close relationship, creating “systemic costs of trauma” (Figley, 1998, p. 26). The nature of the effects of trauma, as well as factors that serve to mediate these effects and the potential to alter perspectives on life, are discussed as they relate to the relationship partners of first responders. Additionally, treatment options for the partners are considered.

#### Traumatic Stress Disorders

##### Posttraumatic Stress Disorder

“Post-traumatic stress disorder (PTSD) is a complex, often chronic and debilitating mental disorder that develops in response to catastrophic life events such as combat, sexual assault, natural disasters, and other extreme stressors” (Weathers, Keane, & Foa, 2009, p. 23). Post-traumatic stress disorder is unique in psychiatric disorders due to the requirement that a distinct event external to the individual must be clearly identified as triggering the symptoms (Brody & Serby, 2006; Roberts et al., 2011).

The beginning of the study of trauma outside the realm of surgical medicine began during the latter part of the 19<sup>th</sup> century when the combination of symptoms occurring in response to outside events became known as “traumatic neurosis” (Lasiuk & Hegadoren, 2006a). Although much of the study of trauma in psychiatry has been

focused around the reaction of soldiers suffering from stress reactions, associations between histories of childhood traumas and “hysteria” have been suggested since the middle of the 20<sup>th</sup> century (Herman, 1997; van der Kolk, Weisaeth, & Van der Hart, 2006).

The societal response to the reported symptoms included attempts to blame the reactions on individual weakness, organic dysfunction, or malingering to obtain secondary gain in the form of financial compensation (van der Kolk et al., 2006). Credibility was given to this group of trauma-related symptoms in 1952 with the inclusion of “gross stress reaction” as a diagnostic category in the first *DSM* published by the APA (as cited in van der Kolk et al., 2006). Post-traumatic stress disorder was first included as a distinct diagnosis in the *DSM III* and the characteristic requisite event, as well as the array of symptoms associated with the disorder, was expanded with each new edition (APA, 1980, 1987, 1994, 2000). However, debate continued for years concerning questions about the cause of the disorder. Is the source of trauma the event itself or is the subjective interpretation the problem and is the disorder caused by the event or due to an inherent weakness in the individual (Lasiuk & Hegaderon, 2006a)?

Well into the second half of the 20<sup>th</sup> century, psychological trauma-related research was episodic and the idea that external factors could be capable of significantly altering the psychology and physiology of people was reluctantly embraced in psychiatry (van der Kolk et al., 2006). Herman (1997) suggested that studying psychological trauma “forces us to come face to face both with human vulnerability in the natural world and with the capacity for evil in human nature” ( p. 7). Research on PTSD began to coalesce in the 1970s when antiwar sentiments associated with the

Vietnam War, human rights advocacy, and lobbying by Vietnam veterans combined to draw attention to traumatic event exposure and its psychological sequelae (Lasiuk & Hegaderon, 2006a).

Current diagnostic criteria for PTSD, identified in the *Diagnostic and Statistical Manual, 4<sup>th</sup> ed., text revision (DSM-IV-TR)*, divide the qualifying event to include both objective features, “the individual must have experienced, witnessed, or been confronted with an event/s involving actual or threatened death/injury to self or others” and subjective features, “the person responds to the event with intense fear, helplessness, or horror” (APA, 2000, p. 467). Other changes in the fourth edition include the addition of physiologic reactions in the re-experiencing symptom cluster, as well the acknowledgement that exposure to factors resembling some aspect of the traumatic event may involve internal or external stimuli. Lastly, psychosocial disturbance describing occupational, social, and other functional impairment was included as a means to differentiate from symptoms and/or distress commonly experienced but not constituting a mental disorder (APA, 2000; Breslau, 2009; Lasiuk & Hegaderon, 2006a). Prior to *DSM-IV-TR*, PTSD symptoms were considered to be “in the skin” of sufferers, referring to the internal angst with which they presented. After the text revision, factors “outside the skin” were included in reference to functional disturbances with work, family, and community (Glynn, Drebing, & Penk, 2009).

#### Secondary Traumatic Stress Disorder

More recent focus has included the identification of symptoms endorsed by people indirectly exposed to traumatic events, often through close relationships with a primary sufferer. Secondary-traumatic stress is “the natural consequent behaviors and

emotions resulting from knowledge about a stressful event experienced by a significant other (e.g., family members); it is the stress that results from helping or wanting to help a traumatized person” (Figley, 1998, p. 7). When chronic, secondary-traumatic stress disorder (STSD) can result, having features, symptoms, and severity that parallel PTSD (Figley, 1995, 1998).

Likewise, the phenomenon of partial PTSD is described for individuals who present with clinically significant symptoms but fail to meet full criteria for PTSD. Utilizing data from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions, Pietrzak et al. (2011) reported that many of the survey respondents meeting full criteria for PTSD (15.7%) and partial PTSD (15.0%) “endorsed, as their worst stressful event, a misfortune befalling someone else” (p. 461). These persons suffer chronic occupational, social, and other functional impairments associated with the disorder. As described by Stellman et al. (2008), peripheral exposure to mass trauma may elicit some of the symptoms but not meet full criteria for PTSD. In a descriptive study of trauma survivors and their partners, 29% of participants identified themselves as both survivor and partner (Schwerdtfeger et al., 2008). Furthermore, Pietrzak et al. reported on the chronic nature of partial PTSD, citing an average 10-year history for individuals with this condition.

Secondary traumatization among spouse/partners of veterans has been reported frequently in the literature (Dekel, 2010; Dekel, Solomon, & Bleich, 2005; Dirkzwager, et al., 2005). Furthermore, in a study of German peacekeepers, Dirkzwager et al. (2005) found a higher incidence of trauma symptoms to be present in partners of those peacekeepers presenting with symptoms of PTSD. Finally, higher trauma symptom

levels were endorsed by female spouses compared to male spouses in a study following a terror attack comparing the trauma symptoms in the victims with the symptoms of spouses of the traumatized victims (Gilbar et al., 2012).

### Epidemiology

Trauma history creates a predisposition to symptoms associated with subsequent trauma (Breslau, 2009; Herman, 1998). Breslau (2009) reported that although the majority (80%) of people in the United States will experience at least one traumatic event in their lifetime, only 10% will develop PTSD. Victims of rape or assault; survivors of childhood physical, sexual, or emotional abuse; veterans; and disaster survivors are identified as populations with the potential for developing PTSD (Breslau, 2009; Brody & Serby, 2006; Hathaway, Boals, & Banks, 2010). The duration and intensity of exposure, proximity to the event, co-morbidities, and disruption of social and occupational networks following the trauma seem to predispose individuals to develop PTSD (Brody & Serby, 2006; Stellman et al., 2008). Trauma symptoms can present immediately or months and years later (Rothschild, 2000). However, personal vulnerabilities, including prior development of PTSD, may be the stronger predictive factors of subsequent PTSD as opposed to the trauma experience alone (Breslau, 2009; Breslau & Peterson, 2010).

Men are exposed to more traumatic events than women but women develop PTSD at 2 times the rate of men (Breslau, 2009; Brody & Serby, 2006; Roberts et al., 2011). Foa et al. (2009) reported and Breslau (2009) concurred that women are 4 times more likely to develop PTSD than men relative to the same traumatic event, and that the disorder persists longer in women than in men.

Women are more likely to develop PTSD in response to rape and sexual molestation while men react more to combat exposure and witnessing trauma to others, according to a 1995 National Co-morbidity Survey as cited in Lasiuk and Hegadoren (2006b). Pietrzak et al. (2011) reported the lifetime prevalence for both PTSD and partial PTSD in women as 8.6%.

### Features of Trauma Disorders

#### Co-Morbidity

As described by Breslau (2009), PTSD identifies a subset of trauma victims at high risk for a range of disorders. Axis I co-morbidity with PTSD and partial PTSD is well documented (Breslau, 2009; Brody & Serby, 2006; Dirkzwager et al., 2005; Lasiuk & Hegadoren, 2006b; Pietrzak et al., 2011). For women with PTSD, 48.5% also have major depression, 29% have simple phobia, 28.4% have social phobia, and 27.9% have alcohol abuse/dependence (Lasiuk & Hegadoren, 2006b). When pre-existing, these disorders may increase the risk of exposure to traumatic events and the susceptibility of those exposed to develop PTSD. Likewise, they may occur in response to the traumatic event and development of primary PTSD (Breslau, 2009; Lasiuk & Hegadoren, 2006b).

Psychiatric symptoms, including depression, anxiety, hostility, and obsessive-compulsive behaviors, have been identified in partners of veterans with PTSD in notably higher numbers than in the general population (Arzi et al., 2000; Calhoun et al., 2002; Dekel et al., 2005; Manguno-Mire et al., 2007). Aptly described by Manguno-Mire et al. (2007), “family members, and in particular spouses of individuals with chronic Post-traumatic Stress Disorder, also demonstrate significant negative psychological sequelae” (p. 144).

## Suicide

Self-destructive and/or impulsive behaviors are features associated with a diagnosis of PTSD (Foa et al., 2009). Suicidal ideation is not uncommon (Cougler, Keough, Riccardi, & Sachs-Ericsson, 2009). Individuals with PTSD have a significant prevalence of suicidal ideation/attempts, according to the 1995 National Co-morbidity Survey, as reported by Lasiuk and Hegadoren (2006b).

## Shame

Shame is associated with PTSD (Rothschild, 2000). Clients have reported feeling as if they have let either themselves or someone else down, and that succumbing to the symptoms represents personal failure. Shame can lead to denial and the hope that symptoms will go away. It reinforces the belief that nothing can help because something is integrally wrong with them and results in treatment avoidance (Foa et al., 2009; Rothschild, 2000).

## Family Disruption

Post-traumatic stress disorder may negatively affect couple relationships as explored by Nelson-Goff and Smith (2005), who postulated a model of couple adaptation. Interpersonal violence against spouses or partners may be displayed either verbally and/or physically (Dekel, 2010; Manguno-Mire et al., 2007). In studying caregiver burden among partners of veterans of the Vietnam War, Calhoun et al. (2002) found significant correlations between burden and emotional distress related to veteran hostility and interpersonal violence. Additionally, increased levels of marital dissatisfaction by spouses in traumatized war veteran couples have been reported (Dekel et al., 2005; Dekel, 2010; Dirkzwager et al., 2005; Evans et al., 2010; Hamilton,

et al., 2009). Finally, van der Kolk et al. (2006) suggested that both the social dysfunction and financial implications for dealing with the stress reactions of trauma are tremendous, thereby making the treatment of PTSD a societal as well as an individual need.

### Trauma and First Responders

As previously described, much has been written describing the impact of combat and military deployment on the mental health of veterans and their families. While some may ascribe similar impacts for emergency responders, McFarlane, Williamson, and Barton (2009) suggested that the type of trauma exposure, the likelihood of repeated exposure over the course of a lifetime career, and the training undergone by emergency responders to conceal initial emotional responses pose substantial differences that warrant separate investigation.

Compiled data indicate there may be as many as 1.5 million active duty emergency responders employed in the United States (U.S. Department of Labor, 2010). As cited in Marmar et al. (2006), clinically significant symptoms of PTSD may occur in up to 34% of these occupation populations with full diagnostic criteria met in as many as 19%, compared to less than 10% in the general population (Breslau, 2009).

Given the epidemiologic statistics, female partners of first responders, with a history of trauma or mental health issues, may be managing their own symptoms from full or partial post-traumatic stress and/or co-morbid conditions. Compounding this history are any effects experienced from secondary trauma relative to their emergency responder partners' diagnosis of PTSD.

## Living with a Traumatized Partner

According to Regehr (2005), “surprisingly little is known about the impact of trauma and providing support on the spouses of emergency responders” (p. 109). However, altered partner identity and the experience of some degree of loss within the context of the couple relationship are outlined within the literature relative to living with someone with PTSD.

Sense of self. In a study of female partners of former POWs, Dekel (2010) reported substantially more partner over-identification with veterans diagnosed with PTSD compared to partners of those without a PTSD diagnosis. Furthermore, the presence of psychiatric and traumatic symptoms increases in partners in relation to their tendency to over-identify with the veteran spouses (Dekel, 2010).

Emergency responders perform important jobs in the community, undergo substantial stress, and work long hours. Coping mechanisms of these workers often include control, dominance, anger, distancing, and isolation and may be expressed more at home than on the job (Miller, 2007; Regehr, 2005).

Women tend to maintain a sense of pride in their emergency responder partners related to the job they do and the personality characteristics that qualify them to do the job (Miller, 2007; Regehr, 2005). As the result of these factors, partners of veterans and of emergency responders report a tendency to subjugate expression of their own feelings not only in an effort to maintain peace but also due to the belief that their needs and feelings are relatively insignificant compared to those associated with the responder’s job (Outram et al., 2009; Regehr et al., 2005). Similarly, Dekel (2010)

suggested that partners of veterans with PTSD may use forgiveness in their relationship with the veteran as a strategic method of reducing their own level of stress.

Alternately, partners of these public servants may become detached from the couple relationship, practicing their own version of avoidance and forging completely separate identities and social networks (Dekel, 2010). They often report a need to become independent and self-sufficient mentally and emotionally rather than relying on the unpredictability of the emergency responder (Regehr et al., 2005).

Ambiguous loss. Ambiguous loss refers to the physical presence but emotional absence of the partner. Primary coping mechanisms used by emergency responders to manage the realities of their jobs include the ability to conceal their initial responses (McFarlane et al., 2009; Regehr, 2005). Avoidance symptoms are related to poor functioning within a relationship (Manguno-Mire et al., 2007; Regehr, 2005) and shown to be predictive of more long-term functional difficulty in veteran couples (Evans et al., 2010).

Some emergency responders report a tendency to share their experiences with their partners while others report clamming up by exercising the use of avoidance and creating emotional distance (Miller, 2007; Regehr, 2005). Partners of firefighters involved in rescue efforts following 9/11 reported concern over the tendency for the responders to refuse to talk about their experiences during this effort (Menendez et al., 2006). Policemen reportedly try to protect their families from exposure to the realities of their work by avoiding discussion (Miller, 2007).

Although emergency responders tend verbally to keep their work stories separate from home, partners report “knowing” and become proficient at reading their

partners' moods (Outram et al., 2009; Regehr et al., 2005). In attempts to keep the peace, they then try to manage both their own and the behaviors of their children. Apparently, in lieu of directly describing uncomfortable feelings to their spouses, partners tend to "share in the avoidance strategy, reduce emotional volatility, and not place demands on their husbands" (Regehr et al., 2005, p. 431).

Further confounding this scenario, avoidance as a symptom of those suffering from PTSD may appear as a lack of interest and caring for the partner. The strategy of avoidance used by both members of the couple dyad develops into a positive feedback loop accelerating the avoidance cycle, thus creating negative relationship dynamics.

### Emergency Responder Partner Stressors

In addition to stress associated with a critical traumatic event, distinct and common day-to-day stressors are identified for partners and families of law enforcement personnel (Miller, 2007). Partners of emergency responders often report similar daily stressors related to the work performed and the occupational identity of the emergency responder. These include the effects of shift work, organizational culture/identity, and safety on the job.

### Shift Work

Most emergency responders adhere to unconventional work schedules that are unpredictable and include overtime and "on-call" status. These issues lead to chronic sleep deprivation and usually create havoc with family routines (Miller, 2007; Regehr, 2005). Although some women describe benefits from shift work, particularly those with children, the majority describe difficulties with these schedules and some refer to themselves as functioning as single parents (Regehr et al., 2005). Resentments typically

build as family and couple time is compromised and the gap of unequal distribution of responsibilities widen while life increasingly revolves around the emergency responder (Miller, 2007; Regehr, 2005; Regehr et al., 2005).

### Organizational Culture/Identity

Emergency responder organizations are well known for the emphasis placed on “the brotherhood” and the importance of relationships within the organization, for physical safety of the workers as well as for emotional support (Miller, 2007). These workers are public figures and carry the societal images ascribed to them: strong, macho men in law enforcement or heroes of disaster in firefighters and paramedics. Most emergency responders identify strongly with their occupational roles and can have difficulty turning off these roles at home or in social situations. Families may begin to function as if these were not roles but true identities. Families of police officers in particular report additional family stress when intentions to provide protection become ingrained in typical behavior patterns with excess control, suspiciousness, and distrust (Miller, 2007).

Emergency responder couples’ social networks commonly revolve around the responders’ work associates and while this can create a sense of belonging for the partners, women often report feeling left out (Miller, 2007; Regehr et al., 2005). Women acknowledge the importance of these supports for the responders, but report distress when these supports are not available for themselves.

### Safety on the Job

Giving the impression of an unspoken agreement, a majority of women surprisingly report a lack of concern for the safety of the emergency responder, citing

positive personality traits, rigorous training, and confidence in the responders' judgment as protective factors (Regehr et al., 2005). However, this sentiment likely only serves as a defensive coping strategy until something untoward affects the responders or someone close to them (Regehr, 2005, Regehr et al., 2005).

### Caregiver Burden

The stress process concept put forth in the classic work by Pearlin, Menaghan, Lieberman, and Mullan (1981) posits that external event stressors leading to redefined family roles may result in a gradual but progressive erosion of self-concept in the non-diagnosed member. According to the authors, "the diminishment of these treasured elements of self is viewed as the final step in the process leading to stress" (Pearlin et al., 1981, p. 340). The family member experiences what was once a mutual relationship as a burden that in subsequent literature has been referred to as informal caregiver burden (Pearlin, 1989).

Caregiver burden includes the physical burden of multiple role assumption, a possible decrease in financial stability, and increased family responsibilities, as well as the partners' subjective assessment of distress related to the family situation. Burden relative to living with veterans with PTSD has been described frequently in the literature (Arzi et al., 2000; Calhoun et al., 2002; Dekel et al., 2005; Manguno-Mire et al., 2007; Outram et al., 2009). Partners report emotional exhaustion and anger with agencies that give back psychologically challenged men for them to manage without adequate skill sets (Outram et al., 2009).

The severity of PTSD symptoms and level of distress on the part of the veteran is associated with the increased experience of burden by the partner (Calhoun et al.,

2002; Dekel et al., 2005; Manguno-Mire et al., 2007). Furthermore, partner burden is related to the perceived threat to the marital relationship and is affected by the partners' level of individuation. The less able a partner is to identify her unique and individual status within the relationship, the greater the distress she perceives, and the greater the burden she experiences (Arzi et al., 2000; Dekel et al., 2005; Manguno-Mire et al., 2007).

Level of partner burden is additionally associated with increased partner psychological symptoms (Calhoun et al., 2002). In fact, partner burden may be equally associated with her own level of distress, including partial PTSD or STSD, as with that of the family member diagnosed with PTSD (Hamilton et al., 2009). Furthermore, as with the issue of avoidance, the symptoms and experiences associated with PTSD in a first responder may trigger the symptoms and experiences associated with their partners' PTSD, partial PTSD, or STSD and vice versa, again setting up a continuous feedback loop of triggering and re-triggering (Dekel, 2010; Evans et al., 2010; Nelson-Goff & Smith, 2005).

### Coping Style

According to Pearlin et al. (1981), coping and the use of social supports are factors that can mediate the course of the stress response. Within this framework, coping is defined as "the things people do to avoid being harmed by life-strains" (Pearlin & Schooler, 1978, p. 2). As cited in Lazarus (2006), Lazarus and Folkman (1987) further defined coping as "the person's constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources" (p. 22). Rather than viewing

one's coping style as related to specific personality traits, the functions of coping were identified related to foci of attention (Lazarus & Folkman, 1987; Pearlin et al., 1981; Pearlin & Schooler, 1978).

Later emphasis on the significance of appraisal, or identifying the context of the situation as related to which coping function(s) were utilized to mediate the stress, expanded this concept (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus & Folkman, 1987). This expansion views coping as a dynamic rather than static process, changing as the situation changes, and also accentuates the inter-relatedness of each coping function during every stressful encounter.

Varying coping functions are identified in the literature. Problem-focused coping describes the thoughts and actions concerned with altering the situation and are used more in circumstances appraised as changeable (Carver, Scheier, & Weintraub, 1989; Folkman et al., 1986; Lazarus & Folkman, 1987). Thoughts and actions directed toward managing or attenuating emotional distress are utilized more frequently in situations that must be accepted; these are referred to as emotion-focused coping (Carver et al., 1989; Folkman et al., 1986; Lazarus & Folkman, 1987). Amirkhan and Auyeung (2007) further delineated the use of social supports as a separate function from other emotion-focused skills.

The use of coping resources as a means to mitigate the effects of trauma exposure was endorsed frequently in a qualitative study of couples engaged in clinical treatment (Schwerdtfeger et al., 2008). Forgiveness as an emotion-focused behavior was found to be associated with marital satisfaction and utilized by wives of former POWs to mitigate stress related to living with veterans diagnosed with PTSD (Dekel,

2010). However, the use of either emotion-focused or problem-focused coping used by spouses of individuals traumatized by terrorist attacks has been shown to be related to the type of coping used by the victimized member of the couple (Gilbar et al., 2012). Specifically, the emotion-focused coping style is related to greater PTSD symptoms in both members of the couple and female spouses have been shown to use emotion-focused coping skills more often than problem-focused skills (Gilbar et al., 2012). Additionally, the emotion- focused coping style was shown to be associated with greater severity of PTSD in a study by Haden, Scarpa, Jones, and Ollendick (2007).

### Posttraumatic Growth

Following involvement in traumatic events, Janoff-Bulman (1989) described a primary coping task of those affected to be “that of assimilating their experience and/or changing their basic schemas about themselves and their world” (p. 113). Beliefs focused on how one sees and fits into the world occur developmentally over time and serve as a basis for expectations and for the way in which one functions across multiple life domains. The study of these beliefs refers to a concept of the “assumptive world” first identified by Parkes in 1971, as cited in Janoff-Bulman (1989) and Kaler (2009).

Through extensive research, Janoff-Bulman (1989) has explained this concept through a schematic framework identifying three fundamental categories in which several assumptions about the world can be classified (Joseph & Linley, 2005; Kaler, 2009). In the interest of maintaining one’s psychological equilibrium, change in the schema is met with resistance but can occur gradually in response to typical life challenges. However, the abruptness of traumatic events creates a rapid infusion of information requiring a more dramatic shift.

In order to sustain a sense of safety, persons affected by trauma process their experiences with the intent to either preserve or re-construct their world assumptions (Janoff-Bulman, 1989). Janoff-Bulman (1989) further postulated that symptoms identified as related to trauma experiences, which may present immediately or years following an incident, may be attempts by the psyche to accommodate and/or assimilate the experiences of victimization into an acceptable, albeit, altered world perspective (Janoff-Bulman, 1989; Kaler, 2009). However, Joseph and Linley (2005) suggested a difference between assimilating the experiences as a return to pre-traumatic views and accommodating the experiences, resulting in either a negative outcome involving psychopathology or a positive accommodation involving personal growth.

The concept of growth as a response to traumatic experiences, which includes the perception of a positive outlook with enhanced appreciation for life and subsequent fewer post-traumatic symptoms, has been reported in the literature (Linley & Joseph, 2011; Linley, Joseph, & Goodfellow, 2008; Schwerdtfeger et al., 2008). However, individual emotional developmental history, number and severity of traumatic events, and time lapsed since the traumatic events serve as moderating variables in positive or negative growth outcomes (Joseph & Linley, 2005; Linley & Joseph, 2011; Linley et al., 2008). Results from a study of civilian populations indicated that the process of exploring the significance of a traumatic event was related to negative change but that positive personal growth was enhanced once the trauma victim was able to attribute specific meaning to an experience (Linley & Joseph, 2011).

## Treatment Considerations

Best practice treatment options with the goal of reducing symptoms in individuals with diagnosed PTSD include cognitive behavioral therapy (Cahill, Rothbaum, Resick, & Follette, 2009; Hamblen, 2010; Spates, Koch, Cusack, Pagoto, & Waller, 2009), eye movement desensitization and reprocessing (Hamblen, 2010; Spates et al., 2009), and psychopharmacology (Friedman, Davidson, & Stein, 2009).

Alternately, psychodynamic therapy focuses on understanding the influence of past events on current experiences (Hamblen, 2010), and may have longer sustainability (Kudler, Krupnick, Blank, Jr., Herman, & Horowitz, 2009).

The effectiveness of couple therapy in decreasing trauma symptoms experienced by veterans has been explored in the literature (Monson, Schnurr, Stevens, & Guthrie, 2004; Sautter, Glynn, Thompson, Franklin, & Han, 2009). While identifying the existence of cause and effect models of PTSD and family functioning, Dekel and Monson (2010) suggested that systemic models, which value “the multi-directional effects of PTSD symptoms on family relations and vice versa” are optimal (p. 307). Nelson-Goff and Smith (2005) recognized the circular nature of symptoms and behavioral responses identified in couples with PTSD and STSD in developing the Couple Adaptation to Traumatic Stress Model. Furthermore, Nelson et al. (2002) differentiated between characteristics of couples in which one partner has PTSD and the other is subject to STSD and those in which both partners have experienced primary trauma. Based on empirical findings, their treatment suggestions include the possibility of individual therapy for each partner as well as couple therapy. However, after an extensive review of clinical studies, Riggs, Monson, Glynn, and Canterino (2009)

concluded that while couple therapy is likely to be helpful, the paucity of controlled studies, small sample sizes, and the nearly universal focus on combat veteran populations currently relegates couple therapy to the realm of adjunctive treatment.

Conversely, Miller (2007) provided an argument for engaging all police officers and their spouse/partners in therapeutic services to determine “ways of strengthening police families for the good of the officer, his or her spouse and kids, the law enforcement agency, and the community as a whole” (pp. 37-38) and identified specific strategies to be employed in therapy. Woody (2006) concurred, suggesting a circular effect of treatment for law enforcement families, particularly relational partners, in managing the effects of daily stresses related to job performance and agency culture.

Group therapy is commonly used for the treatment of PTSD, as outlined by Shea, McDevitt-Murphy, Ready, and Schnurr (2009). According to Herman (1997), “the solidarity of a group provides the strongest protection against terror and despair, and the strongest antidote to traumatic experience” (p. 214). The efficacy of support groups constituted a primary finding in a qualitative study of female partners of Vietnam veterans suffering from trauma symptoms related to their war experiences (Outram et al., 2009). Within a group, “a shared theoretical assumption emphasizes the social nature--hence the social effects--of trauma. It follows that central to the treatment of PTSD is the need to address the individual’s relationship to others” (Shea et al., 2009, p. 307). The group setting provides growth opportunities through the ability for others to assist an individual to identify positive changes, which can then serve to influence other members (Sheikh, 2008).

Specific treatment strategies directed towards individuals with symptoms indicative of STSD were found to be lacking in the literature. While veterans and first responders reportedly have access to a variety of services relative to their trauma exposure, the same does not hold true for their partners (Dekel, 2010; Hamilton et al., 2009; Regehr et al., 2005). Evans et al. (2010) described a significant relationship between positive family functioning and treatment outcomes for veterans with trauma symptoms. Dekel (2010) and Sheikh (2008) supported the inclusion of relationship partners in the treatment of PTSD. Additionally, since positive social support is associated with decreased symptoms and improved functioning among individuals with PTSD (Manguno-Mire et al., 2007; Regehr, 2005; Sautter, Armelie, & Glynn, 2011; Sheikh, 2008; Woody, 2006), emotionally healthy relational partners would supposedly be in a better position to provide this positive support. As expressed by Hamilton et al. (2009), “the emotional condition of military families can no longer be considered solely within the realm of soldier trauma or secondary traumatization, but instead [should] include consideration of the influence of primary traumatic experiences and resulting symptoms in partners” (p. 344). Given that much of the trauma research on first responder populations presented in this chapter has been extrapolated from the research with veterans, a similar sentiment can be applied to first responder partner populations.

## CHAPTER 3

### METHODS

#### Design

The First Responder's Support Network (FRSN, 2009) is a non-profit organization located in California that provides treatment programs for first responders and their spouses with the goal of promoting recovery from occupational stress. The West Coast Post-Trauma Retreat (WCPR) is a residential program for current or retired first responders, which is held on a monthly basis. A residential program for Spouses and Significant Others (SOS) is held once or twice each year. Ongoing anonymous research is conducted by FRSN using data collected from client surveys as a means to improve the programs offered.

Existing self-report survey data provided by the FRSN were used in this quantitative design study. Cross-sectional data were used to explore and describe relationships among multiple variables. While this design supports the determination of associations among variables, the causal order of the relationships, and thus the internal validity, is limited by the design choice (Rubin & Babbie, 2011). Nevertheless, the information gathered in this study can contribute to an understanding of stress processes affecting spouses of first responders, inviting further investigation regarding treatment needs for both first responders and their spouses.

### Sample and Data Gathering

A convenience sample of 30 was recruited for participation in this study. The participants were comprised solely of female spouses or relational partners of first responders. An additional criterion for inclusion was having either attended an SOS program or being in relationship with a first responder who had been referred to WCPR for occupation related stress.

Data were collected using three approaches. A research package including instructions, consent to participate in research, demographic questions, and four quantitative instruments was administered in a group setting to all 16 clients and qualifying volunteer peers, or 100%, who attended the 2012 SOS retreat.

Additional participants were recruited by FRSN via mail. SOS program attendees from prior years, as well as prospective SOS attendees, were contacted directly by postal mail with a request to participate. The research package, along with an enclosed pre-stamped and addressed envelope for return, was mailed to 36 women. This process resulted in 11 returned packages, demonstrating a 30% response rate.

Lastly, participants were recruited indirectly via e-mail to 184 first responders having attended WCPR. The first responder was invited to forward the e-mail to their spouse/partner as a potential participant. For purposes of confidentiality, this additional step was deemed necessary by the FRSN. Four women agreed to participate by replying to the e-mail and providing a physical address to which the research package and return envelope were mailed. Completed research packages were returned by three women demonstrating an overall response rate of .02% for this phase of the recruitment process.

The sample used in this study contributes to a limited ability to generalize any findings. While both the WCPR and SOS programs are open to participants across the country, the vast majority of attendees live in California, and specifically in Northern California. The law enforcement population is overrepresented at FRSN retreats perhaps owing to the founding members having law enforcement backgrounds. However, as such, the spouses of law enforcement agencies may have been disproportionately recruited for participation in this study limiting the generalizability of findings across first responder spouse populations. Additionally, the sample is limited to clients referred to the FRSN and first responders presumably have other avenues available to pursue for help with trauma symptoms related to the performance of their jobs.

### Instruments

A demographics questionnaire was used to gather personal information as well as information regarding aspects of each participant's relationship with a first responder. The research package consisted of four additional survey instruments.

Trauma symptoms experienced by the participants were determined using the Trauma Symptom Inventory-2, a revised version of the widely accepted TSI-1 (Briere, Elliott, Harris, & Cotman, 1995). The inventory assesses 12 different types of symptoms related to trauma and is used routinely by FRSN both during treatment programs and for long-term follow-up. Summary scales of endorsed items fall into four factors or subscales. The Self-disturbance factor (SELF) includes symptoms related to the Depression (DEP) subscale, which can also be scored independently, insecure attachment, and impaired self-reference. Symptoms summarized in the PTSD

factor include intrusive experiences, defensive avoidance, and dissociation.

Additionally, symptoms of anxiety and hyperarousal are included in the trauma factor but may also be scored independently in the Anxious Arousal (AA) subscale. The factor that summarizes anger, suicidality, sexual disturbance, and tension reduction behaviors is referred to as Externalization (EXT). Finally, Somatic preoccupations (SOM) represent an independent factor summary (Briere, 2011).

Scores are computed by generating T-scores that have been normalized according to the age and sex of the respondents (Briere, 2011). Classification of these T-scores falls into three categories: normal range (0-59), problematic range (60-64), and clinically elevated range (65 or above).

The TSI-2 has demonstrated strong psychometric properties with an average alpha score of .87 (Briere et al., 1995). Initial TSI-2 reliability studies have demonstrated similar reliability with alpha coefficients ranging from .79 for somatic preoccupation to .92 for defensive avoidance (Briere, 2011).

Coping mechanisms were measured using the Coping Strategy Indicator (CSI) identifying the mechanisms used relative to a specific incident (Amirkhan, 1990).

Three subscales are included in this instrument. The Problem Solving subscale measures thoughts and activities focused on a remedy to the situation with items such as “formed a plan of action in your mind.” The Seeking Social Support subscale addresses the intent to provide comfort to the individual, such as “accepted sympathy and understanding from someone.” The Avoidance subscale includes items such as “watched television more than usual” and “avoided being with people in general.” Initial alpha coefficients for the subscales in this instrument (Amirkhan, 1990) were

determined to be .84 for Avoidance, .89 for Problem Solving, and .93 for Seeking Social Support with similar results, .82, .90, and .92, respectively, demonstrated more recently (Amirkhan & Auyeung, 2007).

The majority of instruments for the measurement of burden related to informal caregiving have been developed relative to care for the elderly, particularly populations with Alzheimer's Disease, or for the care of patients with cancer (Deeken, Taylor, Mangan, Yabroff, & Ingham, 2003). Many of the items focus on the objective demands of managing the physical limitations of the person receiving care, thus constituting a different population than that addressed in the current study. Although such instruments have been used for the care of individuals recovering from the effects of trauma (Arzi et al., 2000; Calhoun et al., 2002; Dekel et al., 2005; Manguno-Mire et al., 2007), evidence exists for comparable validity of the use of a single question self-report scale of perceived burden when compared to commonly used instruments (van Exel et al., 2004). Although the reliability of such a scale has not yet been evaluated to assess the perception of burden, self-rating scales for mental health-related subjective experiences have been described as having high reliability (Born, Koren, Lin, & Steiner, 2008; Linden, Baumann, Lieberei & Rotter, 2009; Lindstrom, Jedenius, & Levander, 2009). Such a burden scale was utilized in this study. The statements regarding burden perception were posed for both subjective and objective assessment measured on a 5-point Likert-type scale ranging from "rarely, or some of the time" to "most, or all of the time."

Objective burden perception was defined by the need to take on more tasks related to maintaining the household, care of the children, care of the spouse/partner,

and more responsibilities for the family's finances. Restricted finances, lack of time for self, reduced social life, and diminished overall health were factors also correlated with the perception of objective burden. The defined perception of subjective burden addressed the degree of emotional fatigue, anger directed towards the spouse/partner/agency, fear about the future, and spousal or partner relationship strain. Additionally, subjective burden perception included the feeling of missing out on life, wanting to escape, and a general reduction of the quality of relationships experienced with friends or family.

Finally, participants' views of the world were measured using the World Assumptions Questionnaire (WAQ) comprised of 22 items and utilizing a 6-point Likert-type scale from "strongly agree" to "strongly disagree" (Kaler, 2009). Statements such as "You never know what's going to happen tomorrow," "What people say and what they do are often very different things," and "Most people can be trusted" are included in this questionnaire, which are then scored into four subscales. Reported initial psychometric properties are strong for the four outlined subscales: Controllability of Events ( $\alpha = .82$ ), Comprehensibility and Predictability of People ( $\alpha = .75$ ), Trustworthy and Goodness of People ( $\alpha = .80$ ), and Safety and Vulnerability ( $\alpha = .74$ ; Kaler, 2009). Normative or clinically significant values are not included in the description of this instrument.

### Data Analyses

Frequencies and percentages, along with means and standard deviations for interval-level data, were determined for demographic variables based on univariate analyses. Interval-level data were computed for all of the self-report scales and thus

were analyzed using Pearson's product-moment correlation (Rubin & Babbie, 2011). Bivariate relationships were determined between each TSI factor T-score and each coping subscale and each subscale related to world assumptions. Additionally, due to the previously described prevalence of depression as a co-morbid occurrence in trauma conditions as well as the prevalence of anxiety as a predominant symptom associated with PTSD, Pearson's  $r$  calculations were computed specifically between the Depression and Anxious Arousal subscale T-scores and each coping and world assumption subscale score and with the Burden scale score.

Pearson's  $r$  was computed for correlation of the Burden scale with each T-score and coping subscale, and each subscale regarding world assumptions. The interval level variables reporting the age of participants and the number of years each participant had lived with a first responder were also used for bivariate calculations with each of the instrument subscales and the Burden scale. Finally, the four WAQ subscales were likewise analyzed in relationship to each coping subscale and the Burden scale using Pearson's  $r$ .

## CHAPTER 4

### RESULTS

#### Demographic Characteristics of Sample

Frequencies and percentages of respondent characteristics are displayed in Table

1. Women in this study primarily self-identified as White/Caucasian (89.3%), were married (73.3%), and reported having attended at least some college (96.7%). The age in years of the women spanned nearly four decades ( $M = 46.6$ ,  $SD = 8.97$ ).

Characteristics describing aspects of respondent relationships with first responder spouse/partners are shown in Table 2, along with corresponding frequencies and percentages. Law enforcement was disproportionately represented (78.6%) relative to other first responder service occupations. Extensive service years was the norm for the first responder spouse/partners in this study with 83.4% reported as having more than 10 years and 26.7% having 26 years or more. On average, respondents reported having lived with a first responder for 18.3 years ( $SD = 9.89$ ).

#### Instrument Scores

Univariate results and results for internal consistency reliability for all instruments, delineated according to subscales, are displayed in Table 3. Previous studies have shown strong internal consistency for the TSI-2 with alpha coefficients ranging from a low of .77 for Somatization to a high of .94 for Depression. However, alpha coefficients pertaining to the TSI-2 for this study could not be analyzed in the

TABLE 1. Respondent Characteristics ( $N = 30$ )

Characteristic	<i>f</i>	%
<b>Age</b>		
30-39	6	20.0
40-49	13	43.3
50-59	8	26.7
60+	3	10.0
<b>Ethnicity*</b>		
White/Caucasian	25	89.3
Asian	1	3.6
Latino/Hispanic	1	3.6
Other	1	3.6
<b>Marital Status</b>		
Married/Cohabiting	22	73.3
Divorced/Separated	6	20.0
Widowed	2	6.7
<b>Educational Level</b>		
High School Graduate/GED	1	3.3
Some College	16	3.3
College Graduate	11	6.7
Graduate/Post Graduate Degree	2	6.7
<b>Own Years as First Responder (<math>n = 4</math>)</b>		
11-15	2	50.0
26+	2	50.0
<b>Attended Spouse and Significant Other Retreat</b>		
Yes	21	70.0
No	9	30.0

\*Contained missing data.

TABLE 2. Characteristics of Relationship with First Responder ( $N = 30$ )

Characteristic	<i>f</i>	%
Years Living with First Responder		
<10	7	23.3
10-19	10	33.3
20-29	9	30.0
30+	4	13.3
First Responder's Service *		
Law Enforcement	22	78.6
Fire	3	10.7
Corrections	1	3.6
Other	2	7.1
First Responder's Years of Service		
<5	1	3.3
6-10	4	13.3
11-15	8	26.7
16-25	9	30.0
26+	8	26.7
First Responder Currently Working		
Yes	14	46.7
No	16	53.3

\*Contained missing data.

TABLE 3. Instrument Summaries ( $N = 30$ )

Instrument/subscales	M	SD	Possible Range	Problematic %	Clinically Elevated %
<i>TSI-2 * Alpha: not available</i>					
Trauma	53.20	11.02	0-100	6.7	20.0
Anxious					
Arousal	52.20	9.75	0-100	6.7	16.7
Depression	52.20	8.96	0-100	16.7	6.7
Self-disturbance	51.33	9.54	0-100	16.7	6.7
Externalization**	51.10	8.44	0-100	3.4	10.3
Somatic	49.77	9.31	0-100	6.7	10.0
Coping Strategy Indicator: <i>Alpha = .82</i>				<i>Standardized Norms</i>	
				<i>M</i>	<i>SD</i>
Problem Solving	24.13	5.32	11-33	26.0	5.0
Social Support	24.43	6.89	11-33	23.0	5.0
Avoidance **	21.97	6.18	11-33	19.0	4.0
Word Assumptions Questionnaire WAQ: <i>Alpha = .90</i>					
CE	16.10	4.88	5-30		
CPP**	12.93	4.53	5-30		
TGP**	23.00	5.36	6-36		
SV	14.77	5.29	6-36		
Burden: <i>Alpha = .76</i>					
Scale	3.98	1.03	1-5		

\*Trauma Symptoms Inventory reported using T-Scores.

\*\*Contained missing data.

Note: CE = Controllability of Events

CPP = Comprehensibility and Predictability of People

TGP = Trustworthy and Goodness of People

SV = Safety and Vulnerability

existing data supplied. Each of the other instruments administered demonstrated strong internal consistency as indicated by respective alpha coefficients of .82 (Coping Strategy Indicator), .90 (WAQ), and .76 (Burden Scale).

### Trauma Symptom Inventory-2

In addition to the descriptive statistics, clinical classification of T-scores identifying higher than average ranges including the problematic range (having a potential for clinical intervention) and the clinically elevated range representing a significant clinical concern are presented in Table 3. The majority of women endorsed symptoms related to PTSD (Trauma subscale) within a range of normal for their age; however, the scores of 26.7% of respondents fell in the problematic or elevated ranges. Additionally, 23.4% of respondents scored in the above average range for the Self-disturbance factor and for the Depression and Anxious Arousal subscales. Fewer respondents scored in the above average range for Externalization (13.7%) and Somatization (16.7%).

### Coping Strategy Indicator

Standardized norms identifying both the mean and standard deviation for each coping style are included in the scoring instructions for the Coping Strategy Indicator. These norms are presented with the univariate findings in Table 3. Results indicate that women in this study utilized problem solving ( $M = 24.13$ ) for coping less frequently than the general population ( $M = 26.0$ ). Respondents used social support for coping ( $M = 24.43$ ) slightly more often than average ( $M = 23.0$ ) and used the coping style of avoidance ( $M = 21.97$ ) at a rate higher than the standardized norm ( $M = 19.0$ ).

### World Assumptions Questionnaire

As shown in Table 3, the mean scores were similar for three of the subscales of the WAQ. However, the mean score on the Trustworthy and Goodness of People subscale was higher at 23.0 with a standard deviation of 5.36.

### Burden Scale

The majority of respondents (86.7%) reported feeling burdened as the result of living with a first responder spouse/partner following a critical incident at least “some of the time.” The scores on the Burden scale indicate that, on average, the women in this study felt burdened relative to their spouse’s/partner’s critical incident “most or all of the time” ( $M = 3.98, SD = 1.03$ ).

### Bivariate Analyses

Pearson’s  $r$  correlations for each instrument’s subscales with the perceived level of Burden scale failed to demonstrate statistical significance as shown in Table 4. Table 5 presents correlations between participant age and years living with a first responder with each instrument’s subscales. Statistical significance at the .05 level was identified only between years living with a first responder and the Trustworthy and Goodness of People subscale ( $r = .40, p = .03$ ). Specifically, more years living with a first responder was associated with a higher score on the Trustworthy and Goodness of People subscale, reflecting an endorsement of a positive belief in the trustworthiness and goodness of people.

Table 6 displays the results of correlations between the TSI-2 subscales and the Coping Strategy Indicator subscales. Pearson’s  $r$  results indicate that there was a significant and negative relationship at the 0.01 between the level of depression and the

TABLE 4. Correlations: Burden and Other Scale Scores ( $N = 30$ )

Scale	<i>r</i>	<i>p</i>
TSI-2		
Trauma	-.19	.32
Anxious Arousal	-.13	.49
Depression	.08	.66
Self-disturbance	.00	.10
Externalization	.18	.35
Somatization	-.24	.20
World Assumptions		
CE	-.28	.13
CPP	-.19	.33
TGP	-.17	.38
SV	-.16	.39
Coping Strategy Indicator		
Problem Solving	-.29	.13
Seeking Social Support	-.27	.14
Avoidance	.25	.20

Note: CE = Controllability of Events  
 CPP = Comprehensibility and Predictability of People  
 TGP = Trustworthy and Goodness of People  
 SV = Safety and Vulnerability

TABLE 5. Correlations: Instrument subscales with Years of Age and Years Living with First Responder

Instrument/subscales	Age		Year living with 1 <sup>st</sup> Responder	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
TSI-2				
Trauma	.12	.52	-.02	.94
Anxious Arousal	-.07	.70	-.22	.24
Depression	-.11	.58	-.10	.60
Self-disturbance	-.16	.39	-.11	.56
Externalization *	.10	.61	.01	.98
Somatization	.11	.56	-.01	.98
Coping Strategy Indicator				
Problem Solving	.20	.30	.24	.19
Seeking Social Support	.15	.42	.15	.44
Avoidance *	-.18	.33	-.03	.88
World Assumptions Questionnaire				
CE	-.08	.66	-.12	.52
CPP *	-.10	.61	-.05	.79
TGP *	.21	.27	.40**	.03
SV	.12	.52	.19	.31
Burden Scale	.02	.89	.05	.78

\*Contained missing data.

\*\*Correlation is significant at the .05 level (2-tailed).

Note: CE = Controllability of Events

CPP = Comprehensibility and Predictability of People

TGP = Trustworthy and Goodness of People

SV = Safety and Vulnerability

TABLE 6. Correlations: Coping Strategy with Trauma Inventory Subscales

TSI-2 Scale	Problem Solving		Seeking Social Support		Avoidance	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Trauma	.11	.57	-.02	.91	.26	.17
Anxious Arousal	-.10	.61	-.17	.36	.25	.20
Depression	-.29	.12	-.49**	.01	.42*	.02
Self-disturbance	-.25	.18	-.40*	.03	.44*	.02
Externalization	-.15	.45	-.05	.81	.24	.20
Somatic	.70	.72	.30	.10	.02	.91

\*Correlation is significant at the .05 level (2-tailed).

\*\*Correlation is significant at the .01 level (2-tailed).

use of the coping strategy Seeking Social Support ( $r = -.49, p = .01$ ) and a significant and positive relationship at the .05 level between the degree of depression and the use of the coping strategy Avoidance ( $r = .42, p = .02$ ). Specifically, results of this study showed that a higher score on the Depression subscale was found to be associated with a lower score on the use of social support as a coping style and a higher score on the use of avoidance as a coping style. Additionally, a higher score on the Self-disturbance subscale was found to be associated with a lower score for the use of social support and a higher score for the use of avoidance as a coping style. These relationships are also presented as Pearson's  $r$  calculations indicating a significant and negative relationship at the 0.05 level between the subscales of Self-disturbance and Seeking Social Support ( $r = -.40, p = .03$ ) and a significant and positive relationship at the 0.05 level between Self-disturbance and Avoidance subscales ( $r = .44, p = .02$ ).

Additional statistical significance was found for correlations between the TSI-2 subscales and the WAQ. Table 7 shows the results indicating a significant and negative relationship between the subscales of Depression and Trustworthy and Goodness of People ( $r = -.37, p = .05$ ) such that a higher level of depression is associated with a lower endorsement of a belief in the trustworthiness and goodness of people. Higher scores on the Externalization subscale were found to be associated with lower scores on the following subscales of the WAQ: Trustworthy and Goodness of People ( $r = -.39, p = .04$ ), Safety and Vulnerability ( $r = -.37, p = .05$ ), and Comprehensibility and Predictability of People ( $r = -.42, p = .03$ ). Thus, an external orientation was related to lower levels of these three aspects of one's worldview.

The Trustworthy and Goodness of People, Comprehensibility and Predictability of People, and Controllability of Events subscales of the WAQ were significantly related to coping styles as presented in Table 8. Problem solving and social support were significantly and positively related to trustworthiness and goodness of people ( $r = .66, p < .001$ ;  $r = .50, p < .01$ ). Conversely, trustworthiness and goodness of people was significantly and negatively related to avoidance ( $r = -.45, p = .02$ ). Specifically, higher scores on the Trustworthy and Goodness of People subscale were associated with higher use of problem solving and social support and lower use of avoidance.

Significant and negative relationships at the 0.05 level are likewise displayed in Table 8 between avoidance and the ability to comprehend and predict people, and avoidance and safety and vulnerability ( $r = -.41, p = .03$ ;  $r = -.38, p = .04$ ), as well as significant and positive relationships at the same level between problem solving and the ability to comprehend and predict people, and problem solving and safety and

TABLE 7. Correlations: World Assumptions with Trauma Inventory Subscales

TSI-2 Scale	TGP		SV		CPP		CE	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Trauma	-.14	.48	-.25	.18	-.24	.22	-.31	.10
Anxious Arousal	-.26	.18	-.33	.08	-.26	.18	-.23	.22
Depression	-.37	.05 *	-.12	.54	-.35	.07	-.26	.16
Self-disturbance	-.33	.08	-.18	.34	-.34	.08	-.34	.07
Externalization	-.39	.04 *	-.37	.05 *	-.42	.03 *	-.26	.17
Somatic	-.15	.45	.24	.19	-.21	.29	-.12	.51

\*Correlation is significant at the .05 level (2-tailed).

Note: CE = Controllability of Events

CPP = Comprehensibility and Predictability of People

TGP = Trustworthy and Goodness of People

SV = Safety and Vulnerability

TABLE 8. Correlations: Coping Strategy with World Assumptions

World Assumptions	Problem Solving		Seeking Social Support		Avoidance	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
CE	.26	.16	.28	.14	-.23	.22
CPP	.47*	.01	.28	.15	-.41*	.03
TGP	.66**	.00	.50**	.02	-.45*	.02
SV	.38*	.04	.16	.39	-.38*	.04

\*Correlation significant at the 0.05 level (2-tailed).

\*\*Correlation significant at the 0.01 level (2-tailed).

Note: CE = Controllability of Events

CPP = Comprehensibility and Predictability of People

TGP = Trustworthy and Goodness of People

SV = Safety and Vulnerability

vulnerability ( $r = .47, p = .01; r = .38, p = .04$ ). These relationships suggest that greater use of problem solving was associated with a higher endorsement of the comprehensibility and predictability of people and of individual safety and vulnerability. Conversely, a greater use of avoidance was associated with a lower endorsement of the comprehensibility and predictability of people and of individual safety and vulnerability.

## CHAPTER 5

### DISCUSSION

#### Findings and Comparison with Existing Research

Women in this study reported symptoms related to trauma at a rate three times higher than the lifetime prevalence for trauma in women of 8.6% reported in the literature (Pietrzak et al., 2011). This finding supports other research that suggests an increased vulnerability for women to trauma disorders, whether experienced directly or indirectly (Breslau, 2009). Since the women in this study are all in relationships with a first responder who has sought treatment for occupation related PTSD, this finding particularly supports similar research indicating that spouses of veterans reported substantially more of their own trauma symptoms, most specifically when the veteran exhibited trauma symptoms (Dekel, 2010; Dekel et al., 2005; Dirkzwager et al., 2005), and when the spouse is female (Gilbar et al., 2012). Additionally, the array of trauma symptoms endorsed throughout the results of the trauma related subscales were consistent with prior studies indicating multiple and varied psychiatric symptoms in partners of veterans (Arzi et al., 2000; Calhoun et al., 2002; Dekel, 2010; Manguno-Mire et al., 2007). However, respondents in this study reported less depression at 23.4% than the 48.5% co-morbidity rate with PTSD reported by Lasiuk and Hegaderen (2006b).

The instrument used to assess trauma symptoms in this study is not considered diagnostic nor were the responses linked to a specific incident. Therefore, since

symptoms of PTSD and STSD can be similar, the trauma history of the women could have been related to one or more distinctly separate incidents experienced at any time in their lifetime, could have been related to the relationship with the first responder spouse/partner, or some combination of the two.

Although not statistically significant across all trauma symptom subscales in this study, correlations between the use of problem solving and social support for coping with trauma-related symptoms were identified. These findings are consistent with several prior studies showing reduction of PTSD symptoms to be associated with an increased use of social support and/or problem solving for coping (Haden et al., 2007; Manguno-Mire et al., 2007; Outram et al., 2009; Schwerdtfeger et al., 2008). Likewise, the increased use of avoidance, an emotion-focused coping style, was correlated with increased trauma symptoms on some of the subscales, a finding identified in previous research involving spouses of first responders (Regehr et al., 2005) and young community members (Haden et al., 2007). Women in this study were shown to use the emotion-focused coping styles of avoidance and social support at rates higher than average while using problem solving for coping at rates lower than average. A study by Gilbar et al. (2012), also found female spouses of victims of a terror attack to use avoidance and other emotion-focused coping skills more often than problem solving coping skills.

Some positive world assumptions were shown to be correlated with trauma symptoms. These study findings are consistent with research involving three community samples by Linley and Joseph (2011) in which they also reported varied results depending on the degree to which the traumatic event had been processed.

Specifically, they found more positive personal growth in individuals having found meaning in the aftermath of a traumatic event but more negative changes in individuals still in the process of searching for meaning following a traumatic event (Linley & Joseph, 2011).

Not surprisingly, world assumption subscales demonstrated several positive correlations with the coping styles of problem solving and seeking social support and negative correlations with avoidance. These findings are consistent with the described fluid nature of the accommodation to and assimilation of traumatic experiences into altered but congruent world perspectives (Janoff-Bulman, 1989; Kaler, 2009; Lazarus & Folkman, 1987). In studies relating coping style with outcomes, participants' use of a variety of coping styles, rather than relying on only one are described based on the assessment of how much one has to gain or lose and what options are available in any given situation (Carver et al., 1989; Folkman et al., 1986). In particular, in the present study, the Trustworthy and Goodness of People subscale of the WAQ demonstrated the most significant positive relationships with problem solving and seeking social support and a negative relationship with avoidance. A highly significant relationship was also found between a belief in the trustworthiness and goodness of people and the number of years participants have lived with a first responder. These findings may suggest that participants in this study have learned over time to target the use of positive coping styles as a way to help mitigate the negative exposure to people they experience relative to their spouse/partner's critical incident or service history.

The study participants perceived substantial burden relative to living with a first responder with PTSD but the bivariate findings clearly indicated that this burden is a

distinctly separate experience from their own mental health concerns. That the preponderance of women in this study reported high perceptions of burden relative to a spouse/ partner's trauma is in accordance with multiple studies reporting high burden levels among spouses of veterans with PTSD (Arzi et al., 2000; Calhoun et al., 2002; Dekel et al., 2005; Manguno-Mire et al., 2007; Outram et al., 2009). However, the present findings did not yield any significant relationships between the level of burden and any of the other variables included. This finding was consistent with a study of female partners of veterans in which burden and psychological symptoms were both shown to be high but lacked specific relationship with each other (Manguno-Mire et al., 2007). However, these findings were in contrast to those from a study by Calhoun et al. (2002), in which significant correlations were found between caregiver burden and emotional distress in spouses of veterans. Interpersonal violence was an additional factor in this latter study, possibly mediating the relationship between partner burden and symptoms.

The Self-disturbance factor summarizes comments relating to an altered sense of self-identity and was found to be in elevated ranges for nearly one quarter of the respondents. This finding concurs with prior qualitative and quantitative studies reporting a diminished sense of self in spouses of firefighters (Regehr et al., 2005) and veterans with trauma histories (Arzi et al., 2000; Dekel 2010; Outram et al., 2009). No correlation was found in the present study between self-disturbance and burden as was demonstrated in the veteran population by Arzi et al. (2000). However, correlations were evident in the findings of the current study suggesting that a decreased sense of

self was associated with an increased use of avoidance and a decreased use of social support as methods of coping with stress.

In summary, while trauma related symptoms could be high in first responder spouse/partners, moderating factors include increased use of the coping skills of problem solving and social support and decreased use of avoidance. These same skills were associated with an enhanced sense of self for the spouse/partner as well as more positive personal growth. Caregiver burden among this sample was unrelated to their symptoms of stress and therefore may not need to be a focus of intervention. Rather, support was demonstrated for the idea of building upon the strengths of the spouse/partner of the first responder in the uses of positive coping and the development of positive growth. Focusing on these areas may prove to be most beneficial to the woman herself as she becomes more balanced. Furthermore, this focus may help to set in motion a positive feedback loop of improved social support for both the first responder and the female spouse/partner.

#### Limitations of Study

This study was limited for a variety of reasons. The FRSN is a small organization in California with a limited referral base. As a result the sample for this study came solely from a clinical sample and was largely homogeneous in terms of ethnicity, marital status, and education, as well as primarily composed of women who had already undergone treatment for their stress related symptoms. The lack of ethnic diversity was of particular concern because minorities demonstrate increased risk of exposure to traumatic events and the psychological response to discrimination may exacerbate PTSD symptoms (Ford, 2008; Roberts et al., 2011). Additionally, the

exclusion of male first responder spouse/partners in the study sample was a study limitation.

Use of a larger and more diverse population would undoubtedly provide more and perhaps different information and allow more generalizability. However, access to members of first responder organizations for the purposes of research is typically limited, as described by Regehr et al. (2005) and demonstrated by the difficulty outlined in this study to recruit women not previously involved in a spousal retreat with FRSN.

The study was further limited by the use of a general trauma index rather than an incident specific tool. Use of an incident specific instrument would allow a more definitive determination regarding whether the symptoms reflected were related to secondary trauma or if the respondents experienced their own primary trauma. This information would provide useful treatment implications.

#### Implications for Future Research

This study could be replicated through occupation specific employee assistance programs and participation may increase if given the overarching support of the service agencies. Ultimately, a larger sample with occupation specific information may prove more useful in directing intervention options within given service agencies than a global approach directed at all categories of first responders.

Due to the lack of an identified relationship between respondents' symptoms and their reported level of burden, future research should be directed at successful approaches for working with spouse/partners around their own trauma symptoms. Methodology using both qualitative and quantitative data could help to identify

effective means for engagement of the spouse/partners, as well as best practice modalities.

### Implications for Social Work Practice

Based on the finding that considerably higher trauma symptoms were evident in spouse/partners of first responders compared to the prevalence rates of women in the general population, social workers should routinely offer services to female spouses of first responder clients and advocate for these services through employee assistance programs. Given the lack of significant correlations between burden in response to the first responder's work and the symptoms of the spouse/partner, treatment should be focused on the women as individuals rather than through couple counseling. This treatment should be trauma focused and may employ a wide variety of evidence based practice modalities including cognitive-behavioral therapies and/or a psychodynamic approach. A primary goal of treatment would be the enhancement of an independent sense of self in response to the present findings correlating increased trauma symptoms in spouse/partners of first responders with a diminished self-identity.

In lieu of another study finding that identified an increased use of avoidance as a coping tool by female spouse/partners of first responders, as well as the correlation between increased avoidance and increased trauma symptoms, emphasis in treatment could focus on decreasing the use of avoidance for coping with stress. A concomitant focus on improving the use of the positive coping strategies of problem solving and seeking social support would be indicated and support the study findings that the positive coping strategies of problem solving and seeking social support are correlated with reduced trauma symptoms.

A third interrelated aspect of treatment should concentrate on developing positive cognitive change in terms of how the client perceives the world and her place within it. Given the associations found in this study between coping styles and world assumptions, the development of increased use of problem solving and social support, along with a reduction in the use of avoidance would be expected to contribute to more positive growth. Focus on this aspect of treatment would include the ability to process fully any traumatic experiences in order to construct some meaning in the context of the client's life.

Finally, the use of social supports to help mitigate the effects of stress was another study finding. Social workers could encourage spouse/partner group formation through agency employee assistance programs. The beneficial use of group processes for spouses of veterans is well documented in the literature (Outram et al., 2009; Shea et al., 2009; Sheikh, 2008). In addition to providing social support, these groups could focus on successful problem solving skills and allow those women with more experience living with a first responder to serve as mentors to those newer to the role. Such a mentoring program is indicated based on the strong correlation found in this study between years having lived with a first responder and a positive belief in the trustworthiness and goodness of people.

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