IMPLICATIONS OF THE MARITAL RELATIONSHIP AS MEASURED BY INTERPERSONAL SPOUSAL SUPPORT AND MARITAL SATISFACTION AND FIRST RESPONDER PTSD SYMPTOM SEVERITY: AN ONLINE MIXED METHODS APPROACH

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

IN THE GRADUATE SCHOOL OF

TEXAS WOMAN'S UNIVERSITY

COLLEGE OF PROFESSIONAL EDUCATION

DEPARTMENT OF HUMAN DEVELOPMENT, FAMILY STUDIES, AND COUNSELING

BY

HILLARY NETTERVILLE, MS

DENTON, TEXAS

May 2022

DEDICATION

For my family and friends, you provided the love and support that was vital in a successful dissertation process. Thank you for the reliable compassion, patience, and help that gave me the ability to successfully juggle all of my hats.

ACKNOWLEDGMENTS

I would like to acknowledge with much gratitude the many individuals who have contributed to this dissertation. I would like to thank my advisor Dr. Ladd for gracefully and patiently guiding me through the daunting process that is a dissertation, it would have been impossible to complete this dissertation without her expertise. I would like to thank my Dr. Brock and Dr. Vittrup for their words of support, constructive feedback and expertise that was valuable in guiding the direction of my research. I would like to thank all the first responders and their continued bravery exhibited daily around the world. These are the men and women, who choose to run into chaos at the risk of their physical and mental well-being, they are the heart and soul of my research. Finally, I would like to thank my husband and my children for their patience as I battled through this process.

ABSTRACT

HILLARY NETTERVILLE

IMPLICATIONS OF THE MARITAL RELATIONSHIP AS MEASURED BY INTERPERSONAL SPOUSAL SUPPORT AND MARITAL SATISFACTION AND FIRST RESPONDER PTSD SYMPTOM SEVERITY: AN ONLINE MIXED METHODS APPROACH

MAY 2022

First responders are at risk for developing posttraumatic stress disorder (PTSD) due to the nature of their job. Their chronic exposure to critical incidents must be met with adequate understanding and research of the unique factors surrounding the epidemiology and treatment of their PTSD experience. This study examined the relationship between first responder spousal support, relationship satisfaction, and PTSD symptom severity. More specifically this research looked at how the marital relationship might be a healing agent that buffers PTSD symptom severity. This study took place through an online platform, PsychData, and a social media flyer on Facebook, which recruited firefighters and police officers. A convergent mixed methods design allowed me to gather reliable quantitative data simultaneously with exploratory qualitative data. The quantitative findings suggest that interpersonal support and relationship satisfaction can predict PTSD symptom severity and even more specifically, relationship satisfaction and interpersonal support together can predict PTSD symptom severity more accurately. The qualitative analysis found that first responders viewed their relationship interpersonal support as helpful in processing work-related trauma by encouraging disclosure. It also supported the inverse relationship found in quantitative analysis, specifying that negative interpersonal support such as not understanding their job or trauma processing needs, exacerbated their work-related trauma experience.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

A significant healing agent for posttraumatic stress disorder (PTSD) might be sitting in front of practitioners during their therapy sessions. This research indicates that the marital system/intimate partner system itself can operate as a resource and healing agent that buffers first responder PTSD symptom severity. Historically, social research focuses on how PTSD can negatively impact marital/intimate partner functioning, this research focuses on how the intimate relationship buffers an individual's PTSD symptom manifestation.

First responders are considered to be a population at risk for developing PTSD due to the chronic exposure of critical incidents that they endure across their career (Haslam & Mallon, 2003; Milligan-Saville et al., 2018). The epidemiology of first responder PTSD and how their marital system, as measured by marital interpersonal support and marital satisfaction can buffer those symptoms has not been well researched in the literature. First responders are individuals on the front lines of emergencies and include: firefighters, police officers, nurses, and paramedics. The purpose of this research is to increase understanding of the dynamics between first responder PTSD, more specifically the relationship between firefighter and police officer PTSD symptom severity, and the first responder marital relationship is defined by perceived marital interpersonal support and marital satisfaction.

Background

Bowen Family Systems Theory

The limited research that has examined the relationship between PTSD and the marital system has consistently yielded two competing findings that the marital system can be a buffer or exacerbator of first responder PTSD symptoms (Clapp & Beck, 2009; Farnsworth & Sewell,

2011; Kohler et al., 2018; Panagioti et al., 2014; Woodward et al., 2015). Bowen family systems theory (BFST) would suggest that the trauma experience of firefighters and police officers does not stop at an individual level, but rather reverberates through the entire family system such that this system must readjust to find a new homeostasis that accommodates the PTSD experience (MacKay, 2012). BFST would suggest that clinical effort should be directed at the family unit, not the individual, for three reasons: (a) improvement in the symptomatic condition; (b) a shift in the nature of the family system that reinforces differentiation of self; and (c) enhancement of the unit's response process to challenging stress (Papero, 2017).

Bowen's (1978) conceptualization of chronic anxiety and its role in family functioning explained above broadens our perspective of first responder PTSD from an individual manifestation to a systemic phenomenon (Bowen, 2013). The experience of PTSD within the marital relationship has been found to erode the marital relationship (Brancu et al., 2014) and the marital relationship has been found to serve as a buffer for PTSD symptoms (Erbes et al., 2012). These findings support a core assumption in BFST that a family operates like a machine of interconnected elements that make a whole; the interaction of these interconnected elements leads to system functioning (Bowen, 2013). In their literature review, Ohye et al. (2015) found that couples therapy for the treatment of PTSD was associated with improvements in PTSD symptoms and relationship satisfaction.

In BFST, family functioning suggests that each person in the family system performs a role that exists in reciprocal, dynamic, and interconnected behavioral patterns (Bowen, 1978). Therefore, it is through the repeated engagement and response that occur between a couple that a first responder experiences their individual PTSD symptoms. As each member of the family participates in an individual's PTSD manifestation experience, it would make sense that the

family unit becomes the identified patient rather than just the individual. Perhaps the marital buffering and exacerbating phenomena that prior research has found in a first responder's PTSD experience (Brancu et al., 2014; Clapp & Beck, 2009; Lucero et al., 2018; Ohye et al., 2015) is due to the dynamic spousal reaction to PTSD symptoms. To adequately understand the systemic implications of first responder PTSD, a systemic theoretical framework is necessary.

First Responder Posttraumatic Stress Disorder

Prevalence

Although PTSD is not exclusive to first responders, factors that are unique to first responder PTSD include: (a) prevalence; (b) cumulative exposure; (c) stigma; (d) suicide epidemiology; and (e) burnout (Komarovskaya et al., 2014; Marmar et al., 2006; Milligan-Saville et al., 2018; Petrie et al., 2018; Regambal et al., 2015; Smith et al., 2018). In their literature review, Kleim et al. (2013) found that the prevalence of first responder PTSD ranged between 8% and 30%, higher than the reported 4% rate in the general population found in the National Comorbidity Survey (Kessler at al., 2005). These increased rates compared to the general population are a result of the cumulative trauma experienced due to the nature of their job. This wide range in prevalence of PTSD among first responders may be due to the mental health field's lack of understanding of first responder PTSD epidemiology because of a shortage of studies specifically studying first responder PTSD (Regambal et al., 2015).

Stigma

The stigma surrounding first responder PTSD include two factors: fear of the potential loss of their livelihood and appearing weak to colleagues and departmental administrators. Stigma surrounding mental health encourages first responders to push their unprocessed feelings and experiences aside in the name of professionalism (Farnsworth & Sewell, 2011; Haugen et

al., 2017). This “professionalism” leads to withholding of emotion by first responders and their fear of emotion, which have been shown to increase PTSD symptoms and moderate the relationship of social support with PTSD (Farnsworth & Sewell, 2011; Kohler et al., 2018).

Suicide

According to the World Health Organization, the lifetime prevalence rates of suicidal ideation for the general population are 5.6-14.3% (Nock et al., 2008), much lower than the 46.8% prevalence rate of firefighter suicidal ideation that Stanley et al. (2015) found in their cross-sectional study of 1,027 current and retired firefighters. Their study also found that 15.5% of their sample had made at least one suicide attempt during their career; this is a significant contrast to the 1.9-8.7% in suicide attempts found in the general population by Nock et al. (2008) in their systematic literature review. According to Blue H.E.L.P. (n.d.), a non-profit that gathers suicide statistics for police, 247 police officers took their own lives in 2019.

Assumptions have been made that the significant prevalence discrepancy with the general population include: (a) chronic exposure to trauma; (b) not seeking help due to stigma; and (c) lack of adequate social support. Research also indicates a significant increase in first responder suicidality following retirement (Heitman, 2016; Henderson et al., 2016).

Burnout

Due to the nature of their job**,** first responders must effectively function in a work environment characterized by long shift schedules, recurrent sleep disturbances, and chronically activated fight or flight responses, which can lead to occupational burnout (Kimbrel et al., 2011). Burnout is typically comprised of exhaustion, depersonalization, and cynicism components (ten Brummelhuis et al., 2011), which leads to disengagement from the workplace (Shirom, 2011). When first responders begin to disengage from their workplace, they decrease their ability to

access brotherhood/sisterhood social support from fellow firefighters and police officers; such social support has been assumed to buffer PTSD (Chu et al., 2016).

Dyadic Implications

Secondary Trauma

Research on PTSD has shown that daily dysfunction exists beyond the personal symptoms outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*) and that there is a significant amount of disruption in family relationships when individual PTSD symptoms become transmissible to surrounding social support (Campbell & Renshaw, 2018; Goff & Smith, 2005). A form of this disruption is secondary trauma which includes concepts such as "burnout," "trauma transmission," and "compassion fatigue" (Goff & Smith, 2005). In their 2005 study, Dirkzwager et al. found that poor relationship quality, lower levels of social support, and more health problems made partners of veterans with PTSD more vulnerable to secondary trauma. Bowen identified the family unit as a functioning system that must meet the needs of family members to sustain future generations (MacKay, 2012). This system must develop processes to respond to environmental challenges that threaten a family's ability to maintain and protect the system. Sometimes this function to sustain the system may result in secondary trauma for partners (Papero, 2017).

Psychosocial Moderator

Within recent years, researchers such as Campbell and Renshaw (2018) have begun to focus on psychosocial moderators for first responder PTSD, due to their chronic experiences of critical incidents in the line of duty. Bergstrom's (2013) research on Vietnam veterans found that 70% of their participants' relationship distress was moderated by veteran PTSD. The directionality of this moderator remains unknown in the literature, leaving this question: Does

the quality of marital support decrease/increase PTSD symptoms or do PTSD symptoms decrease/increase marital support quality (Laffaye et al., 2008; Pietrzak, Johnson et al., 2010)? Research on Gulf War, Vietnam, and Afghanistan veteran populations suggest that social support could be significant in the prediction and development of PTSD (Brewin et al., 2000; Pietrzak, Johnson et al., 2010; Wright et al., 2013).

Statement of the Problem

First responders are exposed to psychological and physical stress daily. Allen et al. (2010) reported these daily stressors include death of a civilian or fellow firefighter or police officer, severe injury, witnessing or participating in incidents where rescue involves preventing death or treating a serious or severe injury. Current research has provided data that indicates that these stressors can often lead to decreased daily functioning, PTSD, and suicide (Bartlett et al., 2018; Marmar et al., 2006; Milligan-Saville et al., 2018; Regambal et al., 2015). The National Fallen Firefighters Foundation (2014) found that a fire department is three times more likely to experience a suicide than a line-of-duty death each year and that 15.5% of firefighters have attempted at least one suicide during their career. Using a hierarchical linear regression model, Martin et al. (2017) found that PTSD symptom severity was significantly associated with chronic suicidal ideation and multiple suicide attempts among first responders ($b = .22$, $p < .001$).

There is a significant risk that first responders develop PTSD; this risk needs to be met with increased understanding of the unique factors surrounding epidemiology, and treatment implications for these firefighters and police officers. The deficit in research examining first responder PTSD and social support within the marital system is a significant disadvantage in this understanding. Prior research indicates that social support can exacerbate PTSD symptoms or aid in buffering PTSD symptoms (Clapp & Beck, 2009; Guay et al., 2006). Building on these

findings by focusing on the first responder population could offer valuable insight into the epidemiology and treatment of first responder PTSD.

Statement of Purpose

Research suggests that quality social support from an intimate partner or spouse may counteract or reduce PTSD symptoms experienced by first responders (Gerlock et al., 2014). Unlike prior PTSD research that tends to focus on the dysfunctional reverberation of PTSD symptoms in the marital system, this research looked at the ability of the first responder's intimate relationship system to create healing amid PTSD symptom severity. Due to first responders' chronic experiences of critical incidents in the line of duty, some research within recent years has begun to focus on first responder marriages as a psychosocial moderator for PTSD symptoms (Panagioti et al., 2014; Zang et al., 2017). The current study expanded on those findings.

The goal for this research was to examine the relationship between first responder intimate relationship functioning, as defined by interpersonal support and relationship satisfaction, and PTSD symptom severity. For the purpose of this study, the independent variables were marital satisfaction as measured by the Kansas Marital Satisfaction Inventory (KMSS; Schumm et al., 1983) and spousal support as measured by the Marital Interpersonal Support Evaluation List (MISEL; Cohen et al., 1985). The dependent variable, PTSD symptom severity, was measured by the Posttraumatic Checklist 5 (PCL-5; Belvins et al., 2015). This study looked at how the marital system attempts to maintain equilibrium and homeostasis amid PTSD symptom severity, more specifically analyzing the buffering effects of the marital support system.

Significance of This Research for Clinical Practice

This study contributes data to an area of research that is currently under-studied. The increase of this knowledge base will help professionals better understand the epidemiology of firefighter and police officer PTSD within the marital system, thus providing information that could help mental health professionals provide competent, ethical, and systemic services to first responder families. The zeitgeist of the clinical mental health field includes the idea that ethical practice relies on relevant data, and incorporating research into clinical practice helps providers conduct more effective and ethical therapy (Cook et al., 2017). There is a need for research that looks at first responder PTSD and more specifically looks at first responder PTSD within the marital system. Increasing understanding of first responder PTSD within the marital system will help clinicians provide ethical and effective therapy when working with first responder families. PTSD research and treatment modalities are overwhelmed by its focus on intrapersonal treatment (Lucero et al., 2018). More studies focused on interpersonal treatment of first responder PTSD are needed (Sautter et al., 2009; Weisenhorn et al., 2017).

Data findings from this study will lay the groundwork and direction for further, more in-depth research looking at the systemic effects of first responder PTSD within first responder marriages. Although these research findings will not imply cause and effect relationships, establishing a framework that there is a moderating relationship between first responder PTSD symptoms, relationship satisfaction, and interpersonal partner support will be vital to pave the way for future in-depth research. This study not only adds to the literature in an area where literature is greatly lacking, but it helps researchers and clinicians better understand the interaction between marital interpersonal support and first responder PTSD, thus creating

opportunity to develop ethical and effective therapeutic interventions for first responders suffering with PTSD.

Research Questions and Hypotheses

1. What is the relationship between PTSD symptom severity as measured by the PCL-5 and marital satisfaction as measured by the KMSS as reported by individuals who are currently in a marriage/committed partnership for at least five years and working as a municipal first responder for at least five years?

   Null Hypothesis 1: There will be no statistically significant relationship between first responder PTSD symptom severity scores as measured by the PCL-5 when those scores are compared with first responder scores on the KMSS.

2. What is the relationship between PTSD symptom severity as measured by the PCL-5 and perceived marital interpersonal support as measured by the MISEL among individuals who are currently in a marriage/committed partnership for at least five years and are currently working as municipal first responders for at least five years?

   Null Hypothesis 2: There will be no statistically significant relationship when PTSD symptom severity scores on the PCL-5 are compared with scores on the MISEL as reported by municipal first responders**.**

3. What is the relationship between PTSD symptom severity as measured by the PCL5 and perceived marital interpersonal support as measured by the MISEL and marital satisfaction as measured by the KMSS among individuals who are currently in a marriage/committed partnership for at least five years and are currently working as municipal first responders for at least five years?

Null Hypothesis 3: There will be no statistically significant relationship when PTSD symptom severity scores (PCL-5) are compared with first responder scores on the MISEL and KMSS.

4. How do first responders perceive their relationship interpersonal support as buffering their PTSD symptom severity?
5. How do first responders perceive their relationship satisfaction as buffering their PTSD symptom severity?
6. How do first responders perceive their relationship functioning as impacting their PTSD symptom severity?

Definitions

First Responders

According to the Texas government Title 6, subtitle A, chapter 607.001 (n.d), a first responder is an employee who works for a political subdivision, like a city, county, or school district. These employees may be peace officers, firefighters, or emergency medical attendants and technicians.

Municipal Firefighters

According to the U.S. Department of Labor, Bureau of Labor Statistics (BLS; 2020), firefighters' control and extinguish fires and respond to emergency situations where life, property, or the environment are at risk. The BSL also defines duties as fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster assistance. In their 2017-2019 survey, The National Fire Protection Association (2021) reported that 46% of fire departments nationwide provided EMS services, with basic life support, 17% of

departments provided EMS services with advanced life support and 38% did not provide EMS services. For the purpose of this study municipal firefighters are employed and paid by a city.

Police Officers

According to the BLS (2020), police officers protect lives and property. Detectives and criminal investigators gather facts and collect evidence of possible crimes. BLS described the law enforcement work environment as physically demanding, stressful, and dangerous. Police, sheriff's patrol officers, and transit and railroad police have some of the highest rates of injuries and illnesses of all occupations.

Social Support

Social support is defined as having two basic elements: perceived availability of others to whom one can turn in times of need and a degree of satisfaction with the available support (Sarason et al., 1987). Social support includes: (a) instrumental support such as time, money, and energy; (b) informational support such as evaluative feedback; and (c) emotional support such as empathy trust, care, and love (House, 1985).

Marital Interpersonal Support

Marital interpersonal support refers to the widely used construct of social support as previously defined, within the context of a marriage. Some researchers suggest that support from a spouse is uniquely beneficial and not compensated by support from other supports (Coyne & DeLongis, 1986).

Perceived Social Support

A measure of how an individual assesses their support rather than a true reflection of how much support they receive (Demaray & Malecki, 2002; Sarason et al., 1983; Schwarzer &

Leppin, 1991). This was assessed by using a self-report measure, which reflected the participant's perception.

Marital Satisfaction

Marital satisfaction is the subjective evaluation of one's experience in his or her marriage; this satisfaction cannot be determined by anyone else. Marital satisfaction is not a property of a relationship; it is a subjective experience and opinion of whether needs are being met (Bradbury et al., 2000).

Posttraumatic Stress Disorder

According to the American Psychiatric Association's (APA; 2013) *DSM-5*, there are eight criteria that are required to obtain a PTSD diagnosis:

1. Person was exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence
2. The traumatic event is persistently re-experienced
3. Avoidance of trauma-related stimuli after the trauma
4. Negative thoughts or feelings that began or worsened after the trauma
5. Trauma-related arousal and reactivity that began or worsened after the trauma
6. Symptoms last for more than 1 month
7. Symptoms create distress or functional impairment and
8. Symptoms are not due to medication, substance use or other illness. (pp. 271-280)

Critical Incidents

A critical incident is an actual or alleged event or situation that creates a significant risk or substantial or serious harm to the physical or mental health, safety, or wellbeing of an

individual. It is an emergency that might overwhelm a firefighter or police officer's ability to deal with the situation (Kehl et al., 2014).

Delimitations

1. The sample is delimited to firefighters and police officers who have been married or in a committed relationship for 5 years to allow for enough significant time to pass for the couple to experience marital stressors.
2. The sample is delimited to professional firefighters and police officers who have at least 5 years of experience at a municipal fire department. Research among firefighters has indicated that volunteer and paid firefighters have drastically different stressors and manifestations of PTSD symptoms (Stanley et al., 2017). The 5-year minimum in a career allows for substantial time to accumulate traumatic events that might lead to PTSD symptoms.

Assumptions

1. There will be participants who meet PTSD symptom criteria as measured by the scores on the PCL-5.
2. Participants will answer the questions in an honest and candid manner.
3. The trauma experiences of firefighters and police officers do not stop at an individual level, but rather reverberates through the entire family system.

Self as Researcher

I am a female graduate student pursing a doctoral degree in Family Therapy. I am also a master's level clinician licensed by the state of Texas. I have a private counseling practice in which I offer individual, couples, and family therapy to first responders and veterans. I have also been married to a firefighter for 13 years; and he has been a professional firefighter for the

entirety of our marriage. My understanding and knowledge of first responder couple and family dynamics in the clinical setting have contributed to my interest in this study. My interest in first responder PTSD has been influenced by both my professional and personal life experiences. I recognize that my personal and professional experiences have not only influenced my research study but created beliefs that could potentially skew my qualitative data findings.

Summary

Marital functioning is greatly impacted by the PTSD experience of a first responder (Campbell & Renshaw, 2018; Kohler et al., 2018). The literature suggests that a first responder will experience multiple critical incidents as part of their line of work; these individual symptoms challenge the homeostasis of the marital dyad (Kohler et al., 2018; Woodward et al., 2015). The literature also suggests that certain patterns, interactions, and characteristics within marital satisfaction as well as perceived marital interpersonal support can buffer the individual's PTSD experience while at the same time PTSD can exhaust marital resources (Farnsworth & Sewell, 2011; Marmar et al., 2006; Rostami et al., 2013). There is a deficit in first responder PTSD research. More studies looking at the bi-directional relationship between the marital system, and the manifestation of PTSD symptoms among first responders is greatly needed. Increasing our understanding of this moderating effect of perceived marital interpersonal support and first responder PTSD symptom manifestation may be one piece to the puzzle in helping mental health professionals increase effective mental health treatment for first responders.

CHAPTER II

LITERATURE REVIEW

Researchers have estimated that 400,000 first responders in the United States experience PTSD symptoms, yet there is a continued deficit in first responder specific treatment and research (Haugen et al., 2012). First responders are defined in this literature review as police officers, firefighters, or emergency medical attendants and technicians. These lines of work expose men and women to chronic critical incidents and trauma due to the nature of their job. This exposure typically involves the threat of their witnessing a death and the threat of their own death directly. In a study of 264 first responders, 178 firefighters and 86 paramedics, Reghr et al. (2003) found participants had experienced the following: situations involving multiple casualties (62.5%), the death of a child (50%), the death of an individual in their care (46.2%) and witnessing violence against others (40.5%). Their chronic exposure to these traumatic events increased the first responders' vulnerability for developing PTSD.

This literature review focuses on the systemic implications of first responder PTSD within the marital relationship. In particular, I looked at two main relational functions of a marriage: perceived marital interpersonal support and marital satisfaction. BFST (Bowen, 1978) will be used to navigate and synthesize the behavioral, physiological, and mental manifestations of PTSD at the individual level and the dyadic level of the marital system. The reviewed literature includes first responders with and without prior military history with the intent to look at any perceived differences in PTSD symptom expression within the marital system. In response to the limited studies specifically focusing on first responder PTSD, studies looking at veteran PTSD were used as surrogate research.

Bowen Family Systems Theory

Murray Bowen was a significant contributor to the evolution of BFST; he advanced understanding of family functioning (Boss et al., 2017). Bowen hypothesized that a family's processes favor or diminish an individual's ability to balance the brain's rational and emotive function and balance autonomy and togetherness in relationships: he referred to this as differentiation (Bowen, 1978). Bowen believed that chronic anxiety ignites the biological fight or flight response, which leads to low differentiation, which in turn leads to manifestation of dysfunction (Papero, 2017).

Key concepts and core assumptions from BFST are referred to throughout the review and are defined below (Bowen, 1978; Kerr & Bowen, 1988):

1. *System*: A group of interacting and interdependent actors that function individually to form a complex whole (Cioruta & Coman, 2019).
2. *Dynamic System:* Conveys the fluid nature of the family system to regulate information flow, interpretation of input, and decisions that result (Papero, 2017).
3. *Systemic Dysfunction*: Deterioration in the family processes of coping with adversity that maintain family's ability to meet members' needs (Papero, 2017).
4. *Differentiation of Self*: An individual's ability to adapt to stressors through balancing the togetherness/autonomy forces and the balancing of the emotional/rational domains of the cognitive process (The Bowen Center for the Study of the Family, 2020).
5. *Nuclear Family Emotional System:* Patterns in the system between parents and their children. Relationship patterns of each spouse was developed in their family of origin and these patterns continue in their marriage, the adaptive patterns in the nuclear

family will go toward physical, emotional, or social dysfunction in one spouse (Kerr & Bowen, 1988).

6. *Autonomy and Togetherness Forces*: Separateness and togetherness are counter-balancing agents that occur between members of a family. These agents are motivated by the need for acceptance, closeness, and approval while trying to maintain autonomy and self-defining (Kerr & Bowen, 1988).
7. *Multigenerational Transmission Process:* Process in which small differences in the level of differentiation between parents and their offspring lead to lower levels of differentiation over multiple generations (The Bowen Center for the Study of the Family, 2020).
8. *Nuclear Family Emotional Process:* Describes four basic relationship patterns that govern the development of dysfunction in the family. Stress input into the family system increases these relationship patterns: (a) marital conflict; (b) dysfunction in one spouse; (c) impairment of one or more children; and (d) emotional distance (The Bowen Center for the Study of the Family, 2020).
9. *Chronic Anxiety*: Anxiety that exists in relationships due to the perceived different needs of togetherness and separateness. Chronic anxiety is an emotional process within the system in response to an outside threat. "The principal generators of chronic anxiety are people's reactions to a disturbance in the balance of a relationship system" (Kerr & Bowen, 1988, p. 113).
10. *Intergenerational Trauma*: Trauma experienced in previous generations has mental health and physical health impacts on current generations (O'Neill et al., 2018).

11. *Feedback Mechanisms*: Communication and information processing patterns that regulate behaviors among family members to maintain homeostasis/equilibrium (Kerr & Bowen, 1988).
12. *Emotional Cutoff:* A way in which an individual manages unresolved emotional issues in relationships by reducing or totally cutting off emotional contact with relationships (The Bowen Center for the Study of the Family, 2020).
13. *Input/Output Configuration:* Input is the information that is received by the system from the environment or an individual member. Output is the processing and response of the input information by the system (Broderick, 1993). Output is the attempt to maintain homeostasis within the system through positive and negative feedback loops (Capuzzi & Stauffer, 2015).

Bowen and Dyadic Buffer

BFST assumes that healthy relational resources can ensure survival and facilitate less anxious physiological states (MacKay, 2012). Families are systems that can become dysfunctional and maintain these patterns; dysfunction can be introduced by traumatic experiences. In order to return to a healthier state of homeostasis, communication patterns, interactions, boundaries, and redefining family roles are crucial (Kerr & Bowen, 1988). The trauma experience of a first responder does not stop at an individual level, but rather reverberates through the entire family system, and this system will have to readjust to either maintain dysfunctional interactions or find a new homeostasis that accommodates the PTSD experience (Clapp & Beck, 2009; Goff & Smith, 2005). The literature review suggests that the marital system can be negatively impacted by PTSD and thus create dyadic strain, but the marital system can also operate as a buffer/healing agent and that affectively treats the individual.

PTSD and the Individual

Trauma exposure has always been a part of the evolving human experience; from saber tooth tiger attacks to 21st century wars, we have biologically responded to trauma through the fight or flight response. For centuries, what we would refer to today as PTSD was explained by organic processes of fight or flight. In the late 1800s, psychoanalysts began to conceptualize this phenomenon as psychological in nature (Monson et al., 2007). At the end of World War I, the term "shell shock" referred to the symptoms experienced by war veterans who were exposed to war-related trauma. Historically, PTSD studies have focused on veterans and active-duty military personnel; within the last decade, first responder PTSD research has emerged due to the chronic trauma exposure experienced in their line of work (Kimbrel et al., 2011).

In Regambal et al.'s (2015) study on rural first responders, participants identified the death of an adult and death of a child as most distressing when compared to other critical incidents. Onset of PTSD symptoms typically manifests within the first few months after experiencing a traumatic event; however, the *DSM-5* includes a PTSD specifier, delayed onset, which describes symptoms that present more than 6 months past the traumatic event (APA, 2013). PTSD is considered a chronic diagnosis that typically lasts a lifetime with individual differences in onset, symptom severity, and symptom reactivation (of original trauma) when the person is introduced to new life stressors or new traumatic events (McFarlane, 2000).

Multiple neurobiological perturbations of the neuroendocrine, neurochemical, and neuroanatomic responses are associated with PTSD (Rasmusson & Shalev, 2014), which leads to variable presentations of PTSD among individuals. In their study of 715 first responders, Maramar et al. (2006), found that *pretrauma*, *peritrauma*, and *posttrauma* differences impacted

how PTSD presented in their sample. Pretrauma considerations included genetic susceptibility, demographic characteristics, prior trauma history, and coping styles. Peritrauma refers to the characteristics of the traumatic event and the physiological and psychological responses during and immediately following trauma exposure. Posttrauma variables include coping mechanisms, social support, work environment, and new stressful life events in first 12 months of traumatic event.

Pretrauma

Pretrauma predictors identified in the PTSD literature include: (a) sociodemographic and demographic factors such as gender, marital status, race, and education; (b) psychological factors such as prior trauma, cognitive ability, coping styles, comorbidity of other psychiatric disorders and psychophysiological responses; and (c) socioecological factors such as family of origin and posttrauma resources (DiGangi et al., 2013; Wittchen et al., 2009). Family of origin variables, such as family rules that dictate how emotions are processed, meanings placed on emotions as strength or weakness, and mental health stigma can shape future predictors of pretrauma. Unresolved emotional attachment is a Bowenian concept suggesting that attachment in the marital system is predetermined on an individual's ability to separate themselves from their family of origin (MacKay, 2012). According to Bowen (1978), the greater the unresolved attachment, the more a person may accommodate, distance, or use an alternative behavioral adaptation that challenges autonomy in relationships.

Sociodemographic and Demographic Factors

In general population studies, results of PTSD prevalence associated with marital status varies (Blanco, 2011). More longitudinal studies looking at marital status and pretrauma

exposure are needed to better understand the implications; recent research focuses on marital implications post diagnosis; more literature is needed with pretrauma baseline comparables.

Multiple studies have found that gender plays a role in the epidemiology of PTSD. Females have demonstrated twice the risk of developing PTSD, despite their lower exposure to trauma (Darves-Bornoz et al., 2008; Frans et al., 2005; Rosenman, 2002); however, a discrepancy has been found between female civilians and female military samples (Lilly et al., 2009). These discrepancies suggest that PTSD risk may not be tethered to biological sex, but other factors such as emotionality and expression of emotion. Feminist scholars have suggested that gender roles, gender socialization, and social context influences emotionality, which could explain gender discrepancies and the discrepancies between civilian and military women. Other researchers found that more women than men reported peritraumatic dissociation during and immediately following a traumatic event. Peritrauma dissociation has been found to be one of the strongest correlates of PTSD (DiGangi et al., 2013; Ozer et al., 2003; Resick, 2001).

The sociodemographic factors that the data does not associate with PTSD onset and prevalence is race and education. Racial differences in PTSD prevalence have not been found and studies consistently show that there is no relationship between ethnic subgroups and PTSD epidemiology (Breslau et al., 2006; Lipsky et al., 2015). Studies looking at PTSD and education have found education level to not be a risk factor in developing PTSD (Frans et al., 2005).

Psychological Factors

Pretrauma risk factors affecting the development and severity of PTSD extend beyond sociodemographic variables. Cumulative trauma has been shown to significantly influence an individual's PTSD. Blanco (2011) found in his literature review that chronic traumatic events lack a formal "beginning and end," suggesting difficulty identifying "the" triggering event. The

inability to identify this event is due to the understudied phenomenon of cumulative effects of trauma over time through chronic exposures. Milligan-Saville et al. (2018) conducted a study of 459 volunteer firefighters and found that PTSD risk was significantly higher for participants with the most frequent involvement with critical incidents and the highest levels of cumulative trauma. Cumulative trauma contributing to first responder PTSD is not always confined to trauma in the line of duty. When measuring for PTSD symptoms, Komarovskaya et al. (2014) found a significant difference between first responders who reported early traumatic exposure during childhood and those who denied early childhood trauma.

Traumatic childhood events and transgenerational trauma influences an individual's response to trauma. Transgenerational trauma research suggests that children of traumatized parents are more prone to anxiety disorders (Lehrner & Yehuda, 2018) and that transgenerational trauma can influence higher rates of resilience (Shira et al., 2011). Bowen proposed that the ability to adapt to stressors depends on this emotional maturity which can manifest in pretrauma cognitions, which in turn, affects coping strategies after the event (MacKay, 2012). PTSD researchers indicate that pretrauma dysfunctional coping styles and negative existential cognitions are risk factors for developing PTSD and influence PTSD symptom severity (Asarnow et al., 1999; Constans et al., 2012; Gil & Caspi, 2006). Strong associations between PTSD prevalence/severity and comorbidity of pretrauma mental health diagnoses have been found throughout the literature (Khan et al., 2018; Marmar et al., 2006).

Peritrauma

During the event and shortly after the event, peritraumatic distress risks occur; these include psychological and biological responses (Marmar et al., 2006). Psychological peritraumatic risk factors include: (a) cognitions about the perceived threat during and

immediately after the event; (b) dissonance between trauma experience cognitions and basic belief system; (c) dissociation during event; and (d) maladaptive coping strategies immediately following the trauma event (Brunet et al., 2001; Marmar et al., 1996). Multiple studies have found trauma event characteristics influence resilience and vulnerability in the development of PTSD in first responders. These event characteristics include: chaos during the event (i.e., confusion, unpreparedness, inability to implement procedures, and unexpected happenings) and resource limitations during and after the event (i.e., having limited or faulty equipment to perform duties, insufficient personnel, and limited post-critical incident management; Alden et al., 2008; Regambal et al., 2015).

Physiological peritraumatic risk factors refer to one's fight or flight reactions during and after a trauma (Olff & Zuiden, 2017). According to Bowen, the emotional system includes survival mechanisms such as the involuntary operations of the nervous system: limbic/fight, flight, and freeze system (Bowen, 1978; Kerr & Bowen, 1988). According to MacKay (2012), Bowen theorized that individuals with higher levels of differentiation can be guided by their values and principle while their limbic system is activated. Also, the ability to self-soothe during physiological arousal requires intentional awareness and well-thought-out action.

Posttrauma

Peritrauma hyperarousal symptoms that carry into the posttrauma phase increase vulnerability to PTSD onset and symptomology (Shalev et al., 1996). In this study, the authors found that hyperarousal symptoms that manifested several weeks following the critical incident were predictive of PTSD symptoms 1 year later. The ability to self-soothe during hyperarousal requires self-awareness and higher levels of self-differentiation (MacKay, 2012). Other posttrauma variables that influence the manifestation of PTSD in first responders include: (a)

lack of resources in recovery environment (lack of mental health resources, low levels of station and department cohesion, and stigma driven avoidance behavior of trauma); (b) the first responder's perceived insufficient social support; (c) undesirable work atmospheres (Marmar et al., 2006); and (d) chronic negative cognitions related to the trauma event (Zang et al., 2017). Farnsworth and Sewell (2011) collected data on 225 first responders and found that social networks that encouraged first responders to return to "normal" routines or to "move on" without processing their trauma distress, exacerbated PTSD symptoms by minimizing their distress.

A PTSD diagnosis also increases the risk of developing other posttrauma psychiatric disorders. Dysthymia, major depressive disorder, somatization symptoms, panic disorders, bipolar disorder, and dissociative disorders are associated with PTSD; substance use disorders are also prevalent among individuals diagnosed with PTSD (Galatzer-Levy et al., 2013; Perkonigg et al., 2000; Van Dam et al., 2012). The comorbidity of other psychiatric diagnoses has been attributed to the internalizing processing of PTSD latent factors (Flory & Yehuda, 2015). In other words, how an individual internally processes their trauma, which may be shown through depression, anxiety, somatization, and substance abuse.

Unique Implications of PTSD and the First Responder

Military History

Worldwide, on average, 10% of first responders have been estimated to meet criteria for PTSD (Berger et al., 2011), and almost half of firefighters (44%) are military veterans (Meyer et al., 2012). An estimated 22% of law enforcement officers have prior military experience (Lewis & Pathak, 2014). Based on some of the organizational and cultural similarities to the military, law enforcement is a viable career option for veterans (Curran et al., 2017). Veterans in law enforcement and the fire service are at a heightened risk of developing PTSD based on the stress

sensitization model (Bartlett et al., 2019), which suggests that first responders who are also military veterans are particularly vulnerable to PTSD due to their pre-disposition of the cumulative effect of trauma (Bartlett et al., 2018; Smid et al., 2012; Smid et al., 2013).

Although prior research indicates that PTSD is moderated by military veteran status (MVS; Paulus et al., 2017; Stanley et al., 2015), there have been a few studies conducted with firefighters that found MVS did not impact PTSD pathology (Bartlett et al., 2019). According to Bartlett et al. (2018), the different results could be a result of PTSD researchers not measuring emotional regulation dysfunction (ERD) variables, which have been found to have a positive relationship with PTSD symptom severity (Gratz & Roemer, 2004). ERD is also referred to as emotional dysregulation (ED) and has been defined as the deficiency in cognitive management of emotions as evidenced by emotional impulsivity, emotional intensity, and decreased emotional self-regulation (Brancati et al., 2019).

In their study of 839 firefighters, Bartlett et al. (2018) found that ERD was significantly and positively related to PTSD symptom severity for both MVS participants and non-MVS participants. In this same 2018 study, MVS was not significantly related to PTSD symptom severity, suggesting that military status does not moderate symptomology, but rather ERD moderates PTSD. Further research is needed to understand these dynamics better. Unfortunately, the problem does not end with first responders' susceptibility to mental health trauma; they are also met with barriers to care due to the stigma surrounding mental health care.

Stigma

First responders are trained to extinguish fires, protect individuals and property, provide emergency medical care; they are not trained to emotionally process through these events. Stigma surrounding mental health encourages first responders to push their unprocessed feelings

and experiences aside in the name of professionalism (Farnsworth & Sewell, 2011; Haugen et al., 2017). In their meta-analysis of current literature, Haugen et al. (2017) found that 33.1% of first responders experienced stigma regarding mental health and 9.3% reported a barrier to seeking mental health services due to a fear of negative impact on their career. In other words, first responders have a fear of being judged as incapable of performing their job due to mental health struggles by their coworkers and leadership. This "professionalism" leads to the withholding of emotion and the fear of emotion, which have been shown to increase PTSD symptoms, moderate the relationship of social support with PTSD, and decrease perceived social support (Farnsworth & Sewell, 2011; Kohler et al., 2018).

Despite their elevated risk of PTSD, first responders attach a stigma to accessing mental health services. Haugen et al. (2017) conducted a meta-analysis looking at stigmas and barriers to mental health care for first responders, and they found that the most frequent stigma items were fears of confidentiality and negative career impact; the most endorsed barrier to mental health treatment was concerns of not knowing where to get help. First responder culture has been created on a foundational idea that they must be stronger than civilians due to the nature of their job (Royle et al., 2009). This idea of strength creates a self-stigma in which first responders become concerned about their self-image and the impact it will have on their careers and on the opinions of their peers. In their 2018 study on veterans with PTSD, Bonfils et al. (2018) found that veterans with PTSD reported high levels of internal stigmatization of their diagnosis, which were correlated with the severity of their PTSD symptoms. In the same study, Bonfils et al. (2018) also found that the veterans reported low levels of actual experiences of being stigmatized by members of the public. It is possible that this finding suggests that the internal process of

PTSD stigmatization impacts symptom severity and the internal turmoil experienced, regardless of external stigma variables.

Suicide

Heightened cultural mental health stigma in the first responder field has been found to exacerbate suicide rates and substance abuse (Haugen et al., 2012) and decrease the reporting of mental health problems (Henderson et al., 2016), which creates resistance towards seeking help among first responders (Zang et al., 2017). Lifetime prevalence rates of suicidal ideation for the general population are 5.6-14.3%, much lower than the prevalence of firefighter suicidal ideation at 46.8% (Martin et al., 2017). In their research analyzing industry-coded death certificate data, Violanti et al. (2013) found law enforcement officers at a 69% higher risk for committing suicide. These elevated rates could be partly due to the cultural stigma rampant in the first responder field. Stigmatization of mental illness prevents individuals from seeking treatment and exposes them to an increased risk of suicide by appearing to be the "best" solution for a stigmatized individual (Pompili et al., 2018). First responder work schedules vary from 24-72 hours per shift resulting in inconsistent sleep schedules and high levels of exhaustion. Firefighters are not guaranteed sleep while on duty, and police officers do not sleep while on duty. Carey et al. (2011) found that poor sleep rates were associated with PTSD symptom severity and increased levels of suicidal ideation. Stanley et al. (2015) conducted a study looking at suicidality among firefighters and found that firefighters who also responded to emergency medical calls were six times more likely to make a suicide attempt during their career. This finding suggests that medical calls may significantly moderate firefighter mental health symptoms and symptom severity.

Substance Abuse

Like suicidality, increased sleep irregularities have also been found to be associated with increased substance abuse (Carey et al., 2011). Although substance abuse as a coping mechanism is not unique to first responders, the acceptance and encouragement of it is a huge part of the first responder culture (Mash et al., 2014). Approximately 25-30% of firefighters and 32-48% of police officers have been shown to abuse alcohol as a form of coping with chronic trauma exposure (Dixon, 2021; Kimbrel et al., 2011). In their study on full-time firefighters, Haddock et al. (2012) found that firefighters were prone to binge drinking almost half of the days they were off duty. Other studies have found that alcohol abuse has been associated with PTSD prevalence in first responders (Martin et al., 2017). Heyman et al. (2018) found that alcohol was present in over 85% of police suicides.

Burnout

Due to the nature of their job**,** first responders must effectively function in a work environment characterized by long shift schedules, recurrent sleep disturbances, and chronically activated fight or flight responses, which can lead to occupational burnout (Kimbrel et al., 2011). Burnout is typically compromised of exhaustion, cynicism components, and depersonalization (ten Brummelhuis et al., 2011), which leads to disengagement from the workplace (Shirom, 2011). This disengagement could work against brotherhood/sisterhood social support effectiveness in buffering PTSD. Burnout variables such as emotional exhaustion, cynicism, and depersonalization are negatively associated with firefighter safety behaviors on the job (Smith et al., 2018).

Cumulative Trauma

Although not unique to the first responder community, first responders are subjected to cumulative trauma at higher rates due to the nature of their job. Some research indicates years on the job with reoccurring critical incidents are positively correlated with severity of PTSD symptoms (Milligan-Saville et al., 2018), while years as a first responder are not related to PTSD symptomology (Mitani et al., 2006). A relationship between years of service and posttraumatic growth (PTG) has been indicated (Kehl et al., 2014). PTG's relationship to cumulative trauma could indicate that not only are there mental health benefits gained in traumatic experiences, but first responders could perceive themselves as being better able to cope with re-occurring trauma due to their chronic exposure (Mitani et al., 2006). Research has shown that PTSD decreases while first responders are raising families and increases during mid-life; this increase supports the finding that there is an increase in suicide rates at retirement (Boffa et al., 2016; Heitman, 2016).

Brotherhood/Sisterhood

The work environment in the first responder community has accounted for significant variance in PTSD symptoms. More specifically, Marmar et al. (2006) found that perceived social support in the work environment accounted for 12.5% of variance of police officer PTSD symptoms. Firefighter perceptions of peer social support were found to be a stronger correlate of suicidality than relationship status (Martin et al., 2017). Sense of belonging and brotherhood/sisterhood has repeatedly been seen as a protective factor for first responder suicidality and PTSD symptoms (Chu et al., 2016).

Dyadic Implications of First Responder PTSD

Research on PTSD has shown that daily dysfunction exists beyond the personal symptoms outlined in the *DSM-5* and that there is a significant amount of self-reported disruption in family relationships (Campbell & Renshaw, 2018). Bowen theorized that during times of crisis, individuality is sacrificed and replaced by the needs of the group to promote survival (Kerr & Bowen, 1988), leading to over-functioning and the loss of a spouse's autonomy. Within recent years, researchers have begun to focus on psychosocial moderators for first responder PTSD, due to their chronic experiences of critical incidents in the line of duty. In 2013, Bergstrom's research on Vietnam veterans found that 70% of couples reported relationship distress when veteran PTSD was present. Research on Gulf War, Vietnam, and Afghanistan veteran populations suggests that social support could be significant in the prediction and development of PTSD (Brewin et al., 2000; Pietrzak, Goldstein et al., 2010; Wright et al., 2013); however, directionality of the inverse relationship remains unknown in the literature (Laffaye et al., 2008; Pietrzak, Johnson et al., 2010). In other words, it is unclear whether high levels of perceived social support help decrease PTSD symptoms or whether lower levels of PTSD symptoms contribute to higher levels of perceived social support by decreasing vulnerability to marital distress.

Marital Relationship

Some of the literature suggests that particular PTSD clusters have more impact on the marital relationship than others. Erosion and cognitive theories of social support suggest that PTSD symptoms such as hypervigilance, avoidance, alienation, detachment, and emotional numbing erode interpersonal relationships (Brancu et al., 2014) by impacting safety, trust, power, esteem, communication, and intimacy variables (Monson et al., 2007; Pietzrak et al.,

2010). However, multicollinearity due to high symptom cluster intercorrelation may skew the strengths and significance of these relationships (Campbell & Renshaw, 2018).

There is a consensus in the literature that PTSD symptoms, in general, impact relationship adjustment and functioning. Among a few longitudinal studies looking at PTSD and relationship functioning, Erbes et al. (2012) found that over time PTSD symptoms significantly predicted lower relationship adjustment for intimate partners and relationship adjustment significantly predicted PTSD symptoms. The longitudinal results of Levin et al. (2016) suggested that wives of veterans that experienced a delayed onset of PTSD symptoms reported a significantly higher decrease in marital adjustment over time when compared to wives with spouses that had chronic PTSD.

Data has consistently shown that PTSD manifestation, onset, and severity play a significant role in marital dysfunction. First responder PTSD research has found an association with PTSD manifestation, decreased marital satisfaction, and decreased perceived marital interpersonal support (Lambert et al., 2012). In times of crisis, BFST suggests that the relationship or the togetherness force creates a fusion in which spouses forget about their individual differences and pull-together for survival (MacKay, 2012). The marital system's negative and positive feedback loops are challenged by trauma, perturbing homeostasis. The symptoms exhibited by the system are an attempt to maintain pre-trauma functioning.

Marital Status

When looking at first responder marital status alone, researchers have seen an association between marital status and the manifestation and severity of PTSD symptoms. Van et al. (2008) found that PTSD symptom severity was more than three times higher among their separated, divorced, or widowed participants than participants who were married at the time of the study.

Komarovskaya et al. (2014) ran a multiple regression and found when controlling for relationship status, there was a significant association with dissociative responses to critical incidents; these responses have been found in the literature to be a significant predictor of PTSD symptomology. In a separate study conducted in the Netherlands, De Vries and Olff (2009) found PTSD exposure was twice as high for singles and divorced participants than for participants currently living with a partner. This same study indicated a threefold risk for developing PTSD among participants following a traumatic event among divorced individuals compared to married participants. Marital status and the perceptions of the impact of an event can be predictors of PTSD symptom severity (Weisenhorn et al., 2017).

Marital Satisfaction

Intimacy

Physical and emotional intimacy is often a predictor of marital satisfaction. As a couple becomes less likely to express intimacy in their relationship, sexual satisfaction and time spent engaging in sex decreases. As part of the re-experiencing cluster included in PTSD, nightmares and night terrors are common for individuals diagnosed with this disorder. Severe night terrors often result in a spouse's inclination to sleep in a different room due to sleep disturbances and in severe cases, bodily harm (i.e., being choked, hit, or kicked) during a partner's night terror. Separate sleeping arrangements could exacerbate the experience of decreased intimacy. Through the qualitative data of a random sample of military veterans, Gerlock et al. (2014) found that individuals with PTSD, who wanted relationships and human connection, often avoided these connections due to guilt and shame (negative cognitions).

In the Henry et al. (2011) study, nine of the 18 participants reported decreased sexual desire perpetuated by feelings of discomfort, preoccupation with the identified trauma incident,

and low levels of self-esteem. Avoidance and emotional numbing reverberate through the marital system by decreasing communication and creating distance between a couple; this distancing has an inverse relationship with marital satisfaction (Ponder & Aguirre, 2012). In their 2016 study, Levin et al. found that wives were less likely to vocalize their need for more intimacy due to fear of anger and rejection from their spouses diagnosed with PTSD. A consensus in longitudinal and cross-sectional research studies suggests that deficits in positive affect and behavior account for more variance of relationship satisfaction than the excess of negative affect and behavior (Gottman & Levenson, 2000; Laurenceau et al., 2005; Pasch & Bradbury, 1998; Smith et al., 1990).

Emotional Intimacy

Emotional and physical cutoffs that are created through emotional deficits are common in individuals with PTSD. These deficits often cause detachments from their spouses and restricted emotional range (emotional numbing; Bergstrom, 2013; Roemer et al., 2001). Emotional numbing has the most consistent and significant negative association with relationship satisfaction (Campbell & Renshaw, 2018). In her 2012 qualitative pilot study with firefighters, Carrico found that firefighters emotionally and physically withdrew from their marital relationship to avoid conflict and the pain of their trauma. This would suggest that in combination with avoidance symptoms associated with PTSD, first responders' attempts to cope could lead to complete emotional and physical cutoffs from their spouses. Systems theory suggests that because everything is related and causality is cybernetic, all forms of behavior are communication: "one cannot not communicate" (Hanson, 1995, p. 97). In other words, emotional numbing and avoiding a loved one is communication and therefore perturbs the system.

Differentiation of self is a concept that has been related to the ability of one to achieve intimacy (Bowen, 1978). Those individuals who are considered to have healthy levels of differentiation can maintain intimate relationships while also having a strong sense of self. Wives of veteran spouses diagnosed with PTSD reported feeling responsible for their spouse's well-being at the expense of their own needs, diminishing their reliability for affection from the marital relationship (Levin et al., 2016). Intimacy is moderated by an individual's ability to effectively deal with stress and anxiety in the relationship (Skowron, 2000). Bowen's concept of differentiation states that as an individual's differentiation increases, they can be less reactive in stressful situations due to the ability to separate thoughts from feelings (Patrick et al., 2007).

Communication

Healthy communication fosters emotional intimacy, which plays a vital role in healthy physical intimacy. Emotional numbing, avoidance, need for control, and depression are PTSD symptoms that impede communication (Gerlock et al., 2014). In Bergstrom's (2013) literary review of marriage and PTSD, she found that decreased communication within a marriage affected marital functioning by decreasing engagement in mutually enjoyable activities and restricted physical intimacy. Some first responders have reported that they withhold communication about traumas and do not access spousal support to "protect" their spouse from discomfort or distress (Carrico, 2012). PTSD symptoms and marital satisfaction are highly correlated with communication difficulties among individuals with PTSD. In Carrico's qualitative study on five firefighter couples, she found that in an attempt to stay connected to their spouses, first responder couples adjusted to trauma experienced by the firefighter through meaningful communication. Increased communication about job-related trauma from the first

responders has been found to lead to wives' increased understanding and empathy towards their spouse's PTSD symptoms.

Social Support

Increased levels of perceived social support have not only influenced marital satisfaction but have also been found to have an impact on first responder PTSD symptoms. Neurobiology studies have stated that the anxiety experience of PTSD is emotional and physiological and that relational cues significantly trigger the activity of the nervous system (Porges, 2011). According to Bowen, chronic anxiety in a relationship is exacerbated by togetherness and separateness needs. Porges (2011) argued that our physical and emotional neurobiological anxiety experience can be decreased through the transactions between our social support system. This can be seen in social support research that consistently concludes that interpersonal support from an intimate partner or spouse can reduce the manifestation of PTSD symptoms (Brancu et al., 2014; Gerlock et al., 2014). However, Gerlock et al. (2014) also found that the benefits of marital interpersonal support may be time sensitive due to secondary trauma.

Secondary Trauma

As a spouse interacts with their partner's PTSD symptoms, the marital relationship can become a chronic stressor itself, which in turn manifests in the spouse through PTSD symptoms (Henry et al., 2011). A systemic impact of trauma suggests that trauma transmission from the first responder to the spouse can result in secondary trauma, and trauma transmission to the marital system creates marital distress (Figley, 1986). In other words, a first responder's PTSD symptoms can also put a direct strain on social support (Brancu et al., 2014) and, as the support system becomes distressed, perceived and actual social support variables decrease. Lambert et al. (2012) conducted a meta-analysis in which they found that PTSD symptomology is associated

with unhealthy outcomes for one's intimate partner as indicated by the partners' psychological distress symptoms. As the severity of PTSD symptoms of one partner increases, the psychological distress of the other partner increases (Levin et al., 2016).

PTSD Symptoms

When controlling for other variables, multiple studies have found that PTSD symptoms alone adversely affect the first responder's perception of quantity and quality of social support (Clapp & Beck, 2009). This means that as PTSD symptom severity increases, perceived social support quality and quantity decreases. In their study on firefighters and police, Komarovskaya et al. (2014) found that low social support was also related to dissociative experiences during the traumatic event. As previously stated, one of the strongest predictors of PTSD symptoms are peritraumatic dissociative responses (Hodgins et al., 2001). PTSD symptoms that create feelings of detachment not only impact marital satisfaction, as stated previously, but they have also been shown to erode perceived social support over time (Kohler et al., 2018).

Buffer

However, marital interpersonal support has also been found in research to operate as a healing agent or protective factor for individuals exposed to a traumatic event (Brancu et al., 2014). Shnaider et al. (2017) found that higher support from a significant other had a significant association with large decreases in PTSD severity. As indicated earlier in the review, peritrauma and posttrauma cognitions play a significant role in the resilience and vulnerability of PTSD onset, chronicity, and symptom severity (Zang et al., 2017). Social support has been shown to reduce the negative existential posttraumatic cognitions that increase a first responder's vulnerability in developing PTSD (Kleim et al., 2013). Zang et al. (2017) conducted a study on

military personnel and found that those who reported lower perceived social support also reported more negative posttraumatic cognitions.

Perceived social support and existential cognitions consistently show a negative relationship throughout the literature; however, some studies suggest that negative peritrauma and posttrauma cognitions are greater predictors of PTSD symptoms (Hiskey et al., 2015). When controlling for posttraumatic negative cognitions, Robinaugh et al. (2011) found that the longitudinal inverse relationship between social support and PTSD symptom severity became non-significant. This complex relationship could suggest that although cognitions have a greater influence on PTSD, the marital relationship could be used as an intervention or tool to directly reduce posttrauma and peritrauma negative cognitions.

Perceived social support has been found to moderate the impact and severity of PTSD symptoms on suicidal behavior (Panagioti et al., 2014). In a two-wave study of volunteer firefighters, Huynh et al. (2013) found that family social support prevented the development of work burnout and emphasized the crucial role spousal-support plays in the ability for first responders to continue their work role with decreased risk for PTSD and burnout symptoms. Woodward et al. (2015) looked at PTSD symptoms, negative cognitions, and different types of social support and found that the characteristics of family and friend social supports are particularly influential in shaping posttrauma cognitions when compared to other types of support. The dyadic responses to trauma (DRT) model suggests that event interpretation and coping styles produce certain psychological responses, which impact the relationship process (Marshall & Kuijer, 2017). Negative posttraumatic cognitions have an inverse relationship with resilience and resilience has been found to function together with familial social support (Zang et al., 2017).

Communication

Participants have reported that healthy marital dynamics that increased communication, listening, and empathy from the spouse contributed to perceived spousal support, and communication was found to mediate the link between PTSD symptoms and relationship distress (Campbell & Renshaw, 2018; Henry et al., 2011). When partners communicate genuine interest in the health of their spouse, they create a safe environment in which the hurting partner can express their emotions to a compassionate listener, reinforcing they are not alone (Weisenhorn et al., 2017). Acknowledgement and encouragement to seek support is a vital starting point in reducing PTSD symptoms through social support (Zang et al., 2017). PTSD symptoms have been shown to influence dysfunctional disclosure when talking about a traumatic experience: (a) perceived inability to disclose; (b) excessive need to disclose; (c) physiology (i.e., tension, sweating, heart palpitations); and (d) emotional (i.e., helplessness, anxiety, sadness) reactions (Maercker & Horn, 2012; Maercker & Hecker, 2016; Mueller et al., 2008). As previously indicated, social support creates a safe space for disclosure of trauma events; however, if PTSD symptoms decrease a first responder's ability to recognize social support benefits, the PTSD symptoms will not benefit from social support. Social support among peers (brotherhood/sisterhood) has been found to buffer PTSD for first responders; however, Haslam and Mallon (2003) found that first responders relied on their partners to confide in more than peers.

Negative Social Support Characteristics

Characteristics of social support impact how social support moderates PTSD, listening, validating, and proposing positive solutions are characteristics that have been show to buffer PTSD symptoms (Fredette et al., 2020). This suggests that the quality of social support can

buffer the manifestation of PTSD or exacerbate the manifestation of PTSD. Farnsworth and Sewell (2011) found that beliefs supporting fear of emotion were the strongest predictor of PTSD in firefighters. The fear of losing behavioral and emotional control creates a transgenerational emotional process of fear of emotion for first responders and their families (Goldstein & Chambless, 1978; Salters-Pedneault et al., 2007).

Negative social interactions are more predictive of PTSD symptom severity than the absence of social support because these negative interactions affect the first responder's feelings of safety within their social support to process traumatic events (Joseph et al., 2000; Lepore, 2001). Negative social interactions with spouses that exacerbate extreme emotional states with the original trauma or direct criticism or blame on a first responder can increase PTSD symptoms (Joseph et al., 2000; Lepore, 2001). Those who are more sensitive to how others respond and react may organize how they adapt their behavioral, emotional, and neuroendocrine responses. Experiences in which individuals were rejected by their social support system, or social support was ineffective contributed to perceptions of social support as being useless or dangerous (Clapp & Beck, 2009).

Summary

Previous research has identified first responders as a population vulnerable to developing PTSD due to the nature of their job. Research collectively suggests that the ability for first responders to cope with their PTSD symptoms is related to the perceived quality of their social support systems. Dyadic functioning is greatly impacted by trauma as experienced by the first responder. As couples attempt to navigate posttrauma symptoms, old feedback loops are challenged by new feedback loops that are created through a trauma filter. The literature review suggests that a first responder will experience multiple critical incidents as part of their line of

work; these individual symptoms challenge the homeostasis of the marital dyad. The literature also suggested that certain patterns, interactions, and characteristics within marital satisfaction, and perceived social support can exacerbate or buffer the individual's PTSD experience while at the same time exhausting marital resources. There is a deficit in first responder PTSD research that looks at the longitudinal, bidirectional impact between the marital system and the manifestation of PTSD symptoms. To better understand these interactions, more research must be conducted.

BFST assumes that healthy relational resources can ensure survival and facilitate less anxious physiological states (MacKay, 2012). Families are also systems that can maintain dysfunctional patterns, the deterioration in the processes of coping with adversity (Papero, 2017). In order to return to a healthier state of homeostasis, communication patterns, interactions, boundaries, and redefining family roles are crucial (Kerr & Bowen, 1988). Bowen proposed that family reaction patterns played a role in the system's ability to maintain health or dysfunction in chronic anxiety, which supports current research that indicates the buffering and eroding nature of PTSD symptoms within the marital system: (a) variables within the marital system exacerbate PTSD symptoms; (b) PTSD symptoms erode the marital system; and (c) the marital system can operate as a PTSD buffering/healing agent. These research findings may indicate that effective PTSD treatment should include the marital system to treat the individual, a concept also proposed by Bowen (Papero, 2017).

CHAPTER III

METHODOLOGY

First responders are at higher risk than the general population for developing PTSD due to chronic exposure of critical incidents in their career (Haslam & Mallon, 2003; Milligan-Saville et al., 2018). Unfortunately, there has also been a lack of research about what relationship protective factors, such as marital interpersonal support and marital satisfaction, have on fire responder PTSD. This mixed methods study involving first responders looked at the relationship between PTSD symptomology severity as measured by the PCL-5 (Belvins et al., 2015), marital functioning as measured by both the MISEL (Cohen et al., 1985), and the KMSS (Schumm et al., 1986). My study builds on previous findings that quality social support from a partner or spouse can buffer PTSD symptoms (Gerlock et al., 2014), by looking specifically at how marital functioning as defined by interpersonal spousal support and marital satisfaction impact PTSD symptom severity.

Convergent Mixed Methods Research Design

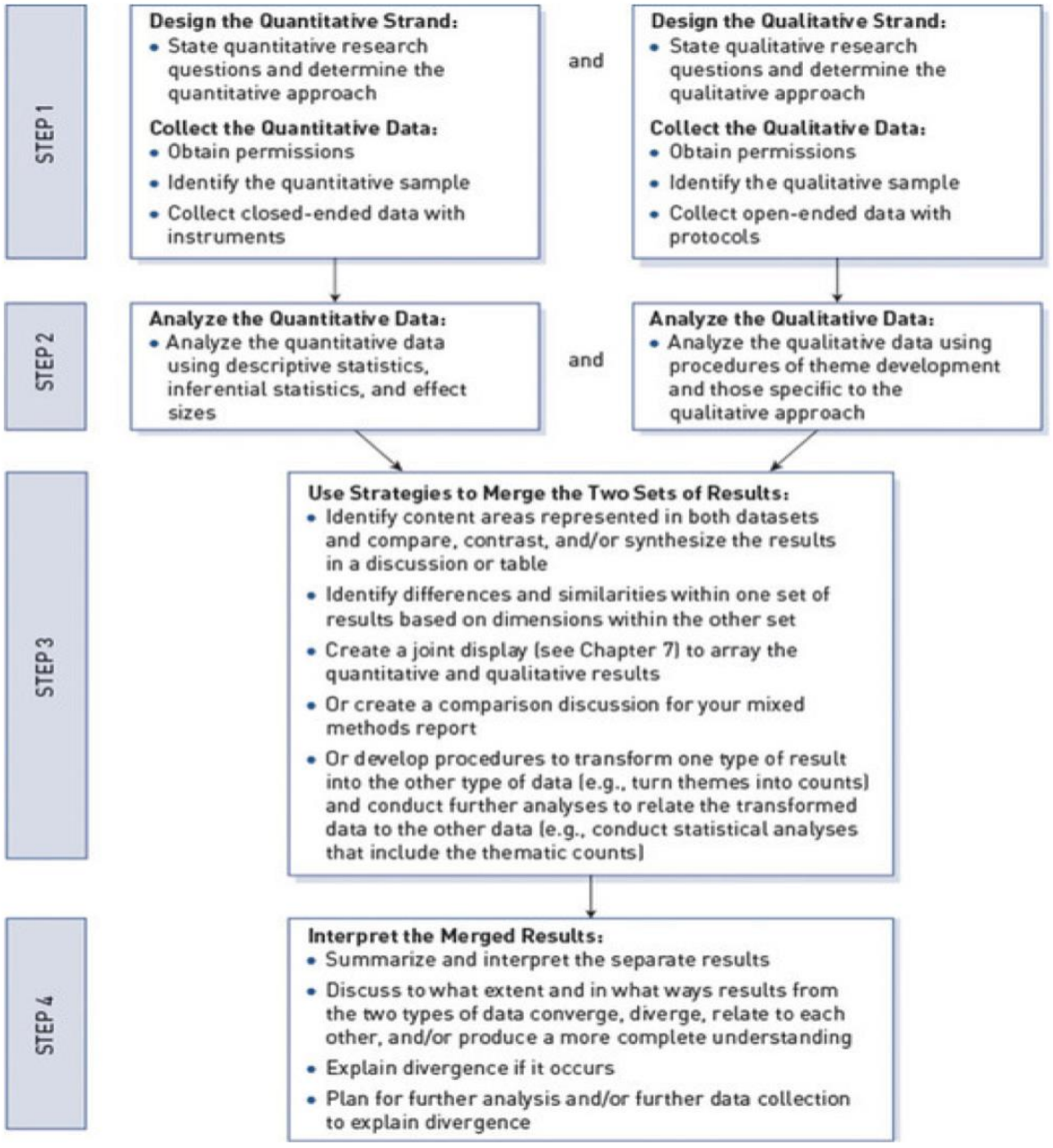
Quantitative and qualitative methodologies present with their own unique strengths and weaknesses (Creswell, 2014). According to Creswell and Clark (2017), the convergent design combines quantitative and qualitative methods to obtain a complete understanding of a problem that has had little research study and validate one data set with the other data set. These authors propose that by using a convergent mixed method design, the researcher can better control the strengths and weaknesses of the two single designs.

Creswell and Clark (2017) identified four steps that describe the convergent design: (a) concurrent collection of quantitative and qualitative data; (b) independent analysis of separate data sets using the appropriate quantitative and qualitative analytical procedures; (c) merging

results of the two data sets through comparison or transforming results to assist in connecting the two data types; and (d) interpreting to what degree the two data sets converge or diverge from each other, relate to each other, and/or combine to create an increased understanding of the study's purpose (see Figure 1). For this study, Step 1 of Creswell and Clark's (2017) convergent design takes place when the surveys in this study were completed, and Step 2 takes place when I analyze my quantitative data in SPSS and analyze my qualitative data through an inductive, three phase analysis. Steps 3 and 4 occur in Chapter 5 when I merge the quantitative findings with the qualitative findings and compare to previous findings.

Figure 1

Flow Chart of Basic Procedures in Implementing Convergent Mixed Method Design



Note. From *Mixed Methods Research*, by J. W. Creswell and V. L. Plano Clark, 2017, p. 150.

Research Questions and Hypotheses

1. What is the relationship between PTSD symptom severity as measured by the PCL-5 and marital satisfaction as measured by the KMSS as reported by individuals who are currently in a marriage/committed partnership for at least five years and working as a municipal first responder for at least five years?

   Null Hypothesis 1: There will be no statistically significant relationship between first responder PTSD symptom severity scores as measured by the PCL-5 when those scores are compared with first responder scores on the KMSS.

2. What is the relationship between PTSD symptom severity as measured by the PCL-5 and perceived marital interpersonal support as measured by the MISEL among first responders who are currently in a marriage/committed partnership for at least five years and are currently working as municipal first responders for at least five years?

   Null Hypothesis 2: There will be no statistically significant relationship when PTSD symptom severity scores on the PCL-5 are compared with scores on the MISEL as reported by municipal first responders**.**

3. What is the relationship between PTSD symptom severity as measured by the PCL-5, perceived marital satisfaction as measured by the MISEL, and spousal interpersonal support as measured by the KMSS among first responders who are currently in a marriage/committed partnership for at least five years and are currently working as municipal first responders for at least five years?

   Null Hypothesis 3: There will be no statistically significant relationship when PTSD symptom severity scores on the PCL-5 are compared with scores on the MISEL and scores on the KMSS.

4. How do first responders perceive their relationship interpersonal support as buffering their PTSD symptom severity?

   Survey Question: Have you ever found your spouse/partner to be helpful or comforting during an anxious moment related to job trauma? Please explain.

5. How do first responders perceive their relationship satisfaction as buffering their PTSD symptom severity?

   Survey Question: When considering your satisfaction with your spouse/partner, describe how your satisfaction affects how you "deal with" the trauma you experience as a firefighter or police office. Please explain.

   Survey Question: Can you recall an experience in which you felt satisfied or dissatisfied with your spouse/partner following a work-related stressor or trauma? Please explain.

6. How do first responders perceive their relationship functioning as impacting their PTSD symptom severity?

   Survey Question: Please identify how the support from your spouse/partner or lack of support from your spouse/partner has impacted your ability to deal with traumatic events you have experienced as a firefighter or police officer. Please explain.

Human Subjects

Texas Woman's University Institutional Review Board (IRB) approval for an exempt study was obtained prior to beginning the study (see Appendix A). All relevant guidelines according to the rules and regulations of the IRB were followed to protect the rights of the study participants. Every effort was made to minimize the following risks to participants: emotional discomfort, loss of confidentiality, and loss of time.

Emotional Discomfort

Emotional discomfort was a potential risk as first responders were completing the online survey that consisted of the consent form (see Appendix B), the demographic questionnaire (see Appendix C), the three quantitative instruments (see Appendix D), and the embedded questions. The participants were informed that they could withdraw from the study at any time without penalty. Contact information for the National Suicide Hotline and the National SAMHSA Hotline was made available at the end of the online survey.

Loss of Confidentiality

There was a potential risk of loss of confidentiality when conducting this online study. Internet transactions are risky and can result in loss of confidentiality that is outside the control of the researcher. I took two precautions to protect participant confidentiality. First, participants were not asked to share any identifying information such as name or address on the primary online survey; a separate survey was used to ask for email addresses if the participant wanted an executive summary of the study. Second, I used a fingerprint-enabled laptop to store participant information; this laptop remained in my home office in a locked drawer. There was no identifying information on the PsychData information that was used in this study; all data were stored on the investigator's finger-print protected laptop.

Loss of Time

The final risk was loss of time. Participants were informed that the online survey would take approximately 30-45 minutes to complete. They were further informed that they could withdraw from the study at any time without penalty.

After my sample of firefighters did not reach the recruitment goal, I decided to expand my sample to include municipal police officers. I amended my IRB application accordingly, and the change was approved by the IRB.

Sample

Sample Recruitment

The sample in this study was purposive due to the nature of the research questions that focused on a specific population. The participant criteria were limited to two occupations: municipal firefighters and police officers. As required by both occupations, participants were required to be over age 21. Participants included male and female subjects; the study was open to all races. All participants were required to have 5 or more years in the fire or police service as this allowed for substantial time to experience critical incidents that might lead to PTSD. All participants were required to be married or in a committed relationship for 5 or more years, as this allowed for an increased likelihood of marital stressors and the participant to have a perception of marital interpersonal support and marital satisfaction. The study was open to heterosexual and same sex couples.

I reached out to a national sample of municipal firefighters through a public Facebook flyer (see Appendix E) that explained the purpose of the study and contained the PsychData link. This flyer was also designed for snowball sampling (Hibberts et al., 2012) as participants were encouraged to share that flyer with other municipal firefighters across the United States. The online Facebook flyer contained the purpose of the study, inclusion criteria, the primary investigator's contact information and a request to share the flyer with other firefighters.

I have an established relationship with several Dallas-Fort Worth (DFW) fire departments and, therefore, had convenient access to DFW firefighters on Facebook. Although random

sampling is ideal, self-selected participants in a one-group design do not pose a threat to research efficacy (Rutherford, 2006). Unfortunately, after 4 weeks of distributing the Facebook flyer to fire departments and fire organizations on Facebook, I was unable to draw an adequate sample of firefighters and, therefore, made the decision to add a second set of first responders, police officers. After receiving IRB approval (see Appendix A) for the expansion of my study, I began to distribute the Facebook flyer to police departments and police organizations on Facebook for 4 weeks. The only change to the survey to accommodate the sample expansion was changing Question 10 on the demographic portion of the survey, which allowed for respondents to select police officer as an occupation. I closed the data collection after 8 weeks with a total of 67 firefighter responses and 25 police officer responses. I was able to use data from 77 of these due to some participants not meeting participation requirements, (e.g., not married for more than 5 years or not a firefighter or police officer). Table 1 is a summary of this study's sample demographics.

Sample Demographics

Table 1

First Responder Descriptive Statistic Data (N = 77)

Variable	Frequency (*n*)	Percentage (%)
Occupation		
Firefighter	59	76.6
Police Officer	18	23.4
Gender		
Female	6	7.8
Male	71	92.2

Variable	Frequency (*n*)	Percentage (%)
Age Group		
21–29	4	5.26
30–39	20	26.32
40–49	32	42.11
50–59	17	22.37
60–69	3	3.95
Race/Ethnicity		
Caucasian	70	92.11
Other	1	1.32
African American	2	2.63
Hispanic	3	3.95
Relationship Status		
Married	70	92.1
Committed Relationship	6	7.9
Length of Relationship		
5-10 years	15	19.74
11-16 years	24	31.58
17+ years	37	48.68
Prior Divorce		
Yes	17	22.4
No	59	77.6

Variable	Frequency (*n*)	Percentage (*%*)
Children Living in Home		
Yes	52	68.4
No	24	31.6

This study reached a sample size of 77 participants including six females (7.8%) and 71 males (92.2%). In this sample, firefighters (*n* = 59; 76.6%) outnumbered police officers (*n* = 18; 23.4%). Participants identified by race as Caucasian (*n* = 70; 92.11%), Hispanic (*n* = 3; 3.95%), and African American (*n* = 2; 2.63%). Sixty-nine participants (90.79%) were between the ages of 30 and 59 years old. Participants (*n* = 61; 80.26%) reported being married 11 or more years. More participants were married (*n* = 70; 92.1%) than in a committed relationship (*n* = 7; 7.9%). Only a few participants reported prior divorces (*n* = 17; 22.45%). Most participants (*n* = 52; 68.4%) reported having children under the age of 18 currently residing at home.

PsychData Online Survey

In this section, I include the demographic questions, the three psychometric instruments, and the qualitative question prompts that were included in the PsychData online survey. The three instruments are as follows: The PCL-5 (Belvins et al., 2015), the KMSS (Schumm et al., 1986), and the MISEL (Cohen et al., 1985). A sample of questions from the demographic questionnaire is followed by a description of each instrument along with the corresponding embedded qualitative question for each instrument.

Demographic Questionnaire

The data gathered from the demographic questionnaire (see Appendix C) provided potential information on variables such as age, race, length of marriage, etc. The demographic

questionnaire also assessed prior trauma and recent trauma experienced in the fire and police service. Below are some examples of questions on the demographic questionnaire:

1. What is your gender?
2. What is your current age?
3. What is your SPOUSE'S/PARTNER'S current age?
4. How long have you been married or in a committed relationship?
5. What Race/Ethnicity do you identify with?
6. Was there a time during your childhood that you experienced a trauma that may include, but is not limited to: emotional abuse; physical abuse; sexual abuse; or sudden death of a loved one?
7. In the last 12 months, have you responded to any calls that have seemed to have lasting negative effects on you? If yes, briefly explain events and effects.

Instruments

The PTSD Checklist

In order to measure for PTSD and severity of PTSD symptoms, I used the PCL-5 (Belvins et al., 2015), a quantitative instrument that has been utilized frequently throughout research (see Appendix D). The PCL-5 is an instrument created by the American Psychological Association based on the *DSM-5* criterion for PTSD. The PCL-5 was created in 1993 and re-normed in 2013 to meet the new PTSD criterion in the *DSM-5* test-retest reliability has been shown to be good (r = .61; Ghazali & Chen, 2018) and it has demonstrated favorable patterns of convergent and discriminant validity (r = .69; Hall et al., 2014). According to McDonald and Calhoun (2010), there have been multiple populations in which the PCL has been re-normed using different ages, genders, socioeconomic status, traumas, clinical and non-

clinical samples. In a study that looked at reliability and validity of the PCL-5 among firefighters, findings showed a good internal consistency ($\alpha = .96$), and Cronbach's alpha ranging from .83 to .93 (Mat Salleh et al., 2020), for this study Cronbach's alpha showed a good internal consistency ($\alpha = .95$).

The PCL-5 consists of 20 items on a 4-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). For every question, the participant selected the number that best fit their experience of PTSD symptoms. The summed scores of the Likert scale were used to assess PTSD symptoms severity with higher scores indicating higher symptom severity. A few of the questions of the PCL-5 are as follows:

1. In the past month, how much were you been bothered by: *Repeated, disturbing, and unwanted memories of the stressful experience?*
2. In the past month, how much were you been bothered by: *Repeated, disturbing dreams of the stressful experience?*
3. In the past month, how much were you bothered by: *Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?*

Embedded Qualitative Question

Have you ever found your spouse/partner to be helpful or comforting during an anxious moment related to job trauma? Please explain.

Kansas Marital Satisfaction Scale

Marital satisfaction in this study was measured using the KMSS (Schumm et al., 1986; see Appendix D). This quantitative instrument is a 3-item self-report questionnaire that measures marital satisfaction with comparable internal consistency

reliability, test-retest reliability, construct validity, and criterion related validity as larger item instruments such as the Dyadic Adjustment Scale (DAS) and the Quality Marriage Index (QMI; Schumm et al., 1986). Test-retest reliability has been shown to be high with an average of .95 across studies. Internal consistency of the KMSS has been shown to be high with a Cronbach's alpha of .95 across several studies including samples of varied demographics (Schumm et al., 2008); the KMSS in this study demonstrated a good internal consistency ($\alpha = .97$).

The KMSS consists of 3 items on a 7-point Likert scale ranging from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*). Using a summed score, higher scores on the KMSS equate with higher levels of marital satisfaction and lower scores equate with lower levels of marital satisfaction. An example question of the KMSS is as follows: *How satisfied are you with your marriage?*

Embedded Qualitative Questions

When considering your satisfaction with your spouse/partner or committed partner, describe how your satisfaction affects how you "deal with" the trauma you experience as a firefighter or police officer. Can you recall an experience in which you felt satisfied or dissatisfied with your spouse/partner or committed partner following a work-related stressor or trauma?

The Marital Interpersonal Support Evaluation List

The MISEL (see Appendix D) is a psychometric measure that was modified by Cohen et al. (1985) from the Interpersonal Support Evaluation List (ISEL). They created the ISEL to measure perceptions of interpersonal support among individuals in the general population using short statements and rating responses on a Likert scale (Cohen et al., 1985). The ISEL was reduced from 40 questions that assessed four

subscales of general social support; the MISEL includes only 10 questions that assess the subscale *Appraisal Support* that is specific to spouses.

The MISEL allows participants to indicate to what extent they perceive the availability of marital interpersonal support in their lives. The MISEL consists of 10 items on a 3-point Likert scale ranging from 0 (*definitely false*) to 3 (*definitely true*). This instrument includes three reversed items (2, 4, 9) and measures the variable of Marital Appraisal Support using summed scores. Sample statements and reverse statements include *I trust my spouse to solve my problems* and *if a family crisis arose, my spouse could not give me good advice about how to handle it* (reversed).

The MISEL has demonstrated acceptable internal consistency, the alpha coefficient ranges from .88 to .90 for the general population (Cohen et al., 1985). Similarly, the MISEL has an alpha coefficient of .86, suggesting internal consistency. ISEL has also demonstrated a 6 month test-retest reliability of 0.74 (Cohen et al., 1985). MISEL test-retest reliability coefficients were not found in the research. I was unable to find Cronbach's alpha statistics for first responders and the MISEL. For this study Cronbach's alpha was .85, demonstrating good internal consistency.

Embedded Qualitative Question

Please identify how the support from your spouse/partner or lack of support from your spouse/partner has impacted your ability to deal with traumatic events you have experienced as a firefighter or police officer.

Procedures

For this study, consent forms (see Appendix B) and data gathering took place through an online platform, PsychData. A social media flyer (see Appendix E) was distributed on Facebook

to public profiles and groups to recruit firefighters and police officers as participants for a PTSD and marital interpersonal support study. The flyer explained the following: (a) the problem and purpose of the research being conducted; (b) the information about the right to stop participation at any time; and (c) the manner in which confidentiality will be maintained. The bottom of the flyer contained a hyperlink to the PsychData survey. The flyer was sent out once a week for 2 months (eight distributions) and recruited a sample of 92 participants. Of those 92 protocols, only 77 could be used as 16 participants did not meet participant requirements or the surveys were not completed.

Once participants clicked on the link to the PsychData survey, they were met with a paragraph addressing the importance of the study and provided with a list of mental health resources (see Appendix F). Following the opening paragraph, participants acknowledged that they had read and agreed to the consent form by clicking on the button to continue the study (see Appendix B). Once the participants gave their consent, the survey began. Participants completed the demographic questionnaire (see Appendix C), which gathered data on such variables as ethnicity, age, years in the fire service/police service, years married/in a relationship, veteran status, etc. After the demographic portion of the survey, participants completed the three quantitative instruments (see Appendix D) in this order: (a) PCL-5; (b) KMSS; and (c) MISEL. Following each instrument, the participants responded to one of four embedded qualitative questions that explored the participants' personal experience of the variable being measured. For example, after the participants finished filling out the KMSS, two open-ended, qualitative questions assessing marital satisfaction and marital satisfaction were asked. The completion of demographic data and the psychometrics with embedded qualitative questions took approximately 40 minutes.

Data Analysis

Statistical Analysis

The quantitative data gathered from the instruments mentioned above were analyzed in SPSS to examine if the predictor variables, marital satisfaction and marital interpersonal support, influence the dependent variable, PTSD symptom severity (Creswell, 2014), by using correlations for Research Questions 1 and 2 and a multiple linear regression model for Research Question 3. The main objective of using a multiple linear regression for Research Question 3 was to determine if the response variable, PTSD symptom severity, is predicted by marital satisfaction and marital interpersonal support. SPSS was used for data entry and to conduct the correlations and regression.

Qualitative Data Analysis

Qualitative analysis was done through an inductive approach, an emergent strategy in which the research team read through the data and allowed themes to emerge (Creswell, 2016). Coding took place in three levels: (a) initial in vivo open coding; (b) compared interrater reliability in open coding; and (c) formulated themes and patterns through axial coding. In level one, the secondary coder and I used the participants' own words through in vivo coding to develop labels and categories independently. Saldaña (2009) defined in vivo coding as the process of using the participants' own words to keep the data rooted in the participants' personal experiences. At level two, the secondary coder and I compared their findings, maintaining in vivo labels and categories. According to Saldaña (2009), a theme is a phrase that creates an identity for a pattern and its manifestations. At level three, final themes and categories were identified and agreed upon by myself and my advisor. All descriptive qualitative data was placed

in an excel spreadsheet that was organized with participant ID numbers in rows with the responses to four qualitative questions in columns.

Through descriptive, inductive analysis, axial coding identified recurrent themes in the second order analysis of four embedded qualitative questions. There was one embedded qualitative question following each psychometric, except for the KMSS, which had two embedded qualitative questions. The analysis searched for data to answer three research questions: How do first responders perceive their relationship interpersonal support as buffering their PTSD symptom severity? How do first responders perceive their relationship satisfaction as buffering their PTSD symptom severity? How do first responders perceive their relationship functioning as impacting their PTSD symptom severity? The research team found that the coding became redundant on Qualitive Question 3. No new information was generated from that question, so themes were not identified from that set of qualitative data.

Trustworthiness/Reliability and Credibility/Validity

Reflexivity and Self as Researcher

Creswell (2016) discussed the importance of reflexivity, the researcher's process in self-understanding the background they bring into their research, and how it shapes their interpretations. As discussed previously, I am a cognitive behavioral therapist who works with veterans and first responders impacted by PTSD. I am aware that over the years that I have spent with clients, I have developed beliefs and assumptions related to the unique PTSD struggles of first responders. In my professional experience, I have observed the systemic implications of firefighter and law enforcement PTSD, observing how PTSD symptoms placed significant stress on the marital system. I am aware that many of the themes that have presented in my qualitative findings are part of an ongoing narrative that I have observed for the past 6 years as a therapist

working in individual and marital therapy sessions with first responders. My clinical experience has shaped the development of this research; however, these observations were bracketed from influencing the data outcomes by using the in vivo approach in formulating the themes, sub themes, and categories.

The in vivo approach to the themes and subthemes obtained in level one and two of analysis was used so that these themes represented the participants' unique thoughts, feelings and understanding without the prior beliefs I have developed as a therapist. I would suggest that my own clinical experience with countless first responders and their spouses/partners can serve as a litmus test for the credibility of the themes found in this study as my co-coder examined the same data and came to the same conclusions separately. I also utilized peer debriefing, intercoder reliability and triangulation to maintain credible data (Marshall & Rossman, 2011).

Peer Debriefing

In order to maintain trustworthy and credible coding (Babbie, 2016), I utilized the coding services of a secondary coder. Reviewing a project with a peer who is familiar with the research can provide support and play challenger to increase credibility of data interpretation (Creswell, 2016). Working with my advisor, we each separately identified key terms from the raw qualitative data (level one) and then met to discuss our interrater reliability which fell at about 90% (raw score). Next, we identified patterns from the key words (level two) and talked again to achieve an interrater reliability of approximately 88% (raw score). Finally, I took the patterns and formulated the themes and categories (level three), which were reviewed by my advisor. She made suggestions that we discussed, and we agreed together on the final themes and subthemes for each question.

Triangulation Method

Creswell (2016) referred to triangulating, building evidence from multiple sources to formulate analysis, as a way to increase trustworthiness. In this study findings from previous research, unique qualitative data from each participant, and quantitative data from three psychometrics were used to reach trustworthy conclusions of this research. Step 3 of the convergent method initiates merging the quantitative and qualitative data that were gathered concurrently. Merging the two data sets provides the researcher with the opportunity to compare the themes that emerged from the qualitative data with the quantitative results from the psychometrics.

Summary

For this study, my primary focus was to gather quantitative data that measured the relationship between PTSD symptom severity, interpersonal spousal/partner support and marital/relationship satisfaction. To understand the personal experience of first responder PTSD symptom severity within the context of their marital/relationship systems, it was crucial to collect qualitative data that represented their personal narrative. As suggested by Creswell (2014), a convergent mixed methods design allowed me to gather reliable quantitative data simultaneously with exploratory qualitative data.

CHAPTER IV

RESULTS

The results from this online convergent mixed methods study include frequency data from the demographic questions, qualitative themes yielded from two of three open-ended questions, and quantitative results obtained from my analysis of participant scores gathered from the PCL-5 (Belvins et al., 2015), the MISEL (Cohen et al., 1985), and the KMSS (Schumm et al., 1986). Using a mixed methods design, the qualitative and quantitative data were analyzed separately and are presented in Chapter 5; then the findings from the qualitative analysis were used to explore the findings from the quantitative analysis in Chapter 5. The complementary data gathered allows for a richer understanding of first responder PTSD in relation to social support (Morse, 1991).

As mentioned previously, first responder PTSD has been largely understudied and this current research provides much needed research findings based on valid and reliable quantitative measurements that are augmented by rich qualitative results coded into themes that reflect the unique first responder experience. The following chapter reports on descriptive findings for selected questions from the study demographic questionnaire, the themes from the qualitative coding, and the inferential statistics from the quantitative analyses.

Table 2 summarizes the participants' education/work experience and trauma experience. Concerning education participants reported some college without a degree (n = 36, 47.4%), an associate degree (n = 19, 25%), a bachelor's degree (n = 19, 15%), and a master's degree (n = 2, 2.6%). This reflects the Texas state criteria that firefighter and law enforcement certification requires some college but does not require a degree for fulfillment. The participants' certifications included emergency medicine certifications (n = 56, 72.7%), firefighter

certifications (*n* = 59, 76.6%), and law enforcement certifications (*n* = 18, 23.4%). An 80.3% of participants reported being a first responder for 13 or more years (*n* = 61). Among the participants that reported military history (*n* = 10, 13.2%), 7.9% reported being exposed to combat (*n* = 6). A few participants reported receiving a formal PTSD diagnosis (*n* = 6, 7.6%). When it came to trauma disclosure, there were participants who reported never disclosing trauma to their spouse/partner (*n* = 9, 11.7%), rarely disclosing trauma to spouse/partner (*n* = 37, 48.1%), and often disclosing trauma to their spouse/partner (*n* = 29, 37.7%). Participants who reported experiencing childhood trauma (*n* = 28, 36.8%) were fewer than those who denied childhood trauma (*n* = 47, 60.5%).

Table 2

Education/Work Experience and Experience of Trauma (N = 77)

Variable	Frequency (*n*)	Percentage (%)
Level of Education		
Some College (No Degree)	36	47.4
Associate Degree	19	25.0
Bachelor's Degree	19	25.0
Master's Degree	2	2.6
Certifications		
Emergency Care Attendant	1	1.3
Emergency Medical Technician	3	3.9
Paramedic	52	68.4
Firefighter	59	76.6

Variable	Frequency (*n*)	Percentage (%)
Police Officer	18	23.4
Years as a First Responder		
5- 8 years	5	6.6
9-13 years	6	7.9
13+ years	61	80.3
Military Experience		
Yes: Non-combat	4	5.3
Yes: Combat related	6	7.9
No prior Military experience	67	86.8
Formal PTSD Diagnosis		
Yes	6	7.9
No	71	92.1
Weekly Alcohol Use		
0-15 servings	67	88.2
16-30 servings	8	10.4
31+ servings	1	1.3
Trauma Disclosure to Partner		
Do Not Disclose	9	11.7
Rarely/Occasionally	37	48.1
Often	29	37.7
Death of a Loved One in Past Year		

Variable	Frequency (*n*)	Percentage (%)
Yes	21	27.6
No	55	72.4
Childhood Trauma		
Yes	28	36.8
No	47	60.5

Quantitative Findings

This study included three quantitative questions that are presented below along with the statistical findings from my analyses. I worked with staff from the TWU Center for Research Design and Analysis (CRDA) to identify and run the statistical tests that best fit these three questions. I am particularly grateful for the expertise of the CRDA staff in explaining the findings from my third research question.

Quantitative Research Question 1: What is the relationship between PTSD symptom severity as measured by the PCL-5 and marital satisfaction as measured by the KMSS as reported by individuals who are currently in a marriage/committed partnership for at least five years and working as a municipal first responder for at least five years?

Table 3 summarizes the Pearson correlation coefficient that was computed to assess the linear relationship between PTSD symptom severity and marital/relationship satisfaction. There was a negative relationship between the two variables, $r(75) = -.32$, $p = .005$.

Table 3

Correlations Between PCL-5 and KMSS

Variable	PCL Mean	KMSS Mean
PCL Mean	-	-.32**
KMSS Mean	-.32**	-

Note. ** Correlation is significant at the 0.01 level

Quantitative Research Question 2: What is the relationship between PTSD symptom severity as measured by the PCL-5 and perceived marital interpersonal support as measured by the MISEL among individuals who are currently in a marriage/committed partnership for at least five years and are currently working as municipal first responders for at least five years?

Table 4 summarizes the Pearson correlation coefficient that was computed to assess the linear relationship between PTSD symptom severity and relationship interpersonal support. There was an inverse relationship between the two variables, $r(75) = -.33$, $p = .006$.

Table 4

Correlations Between PCL-5 and MISEL

Variable	PCL Mean	MISEL Mean
PCL Mean	-	-.33**
MISEL Mean	-.33**	-

Note. ** Correlation is significant at the 0.01 level

Quantitative Research Question 3: What is the relationship between PTSD symptom severity as measured by the PCL5 and perceived marital interpersonal support as measured by the MISEL and marital satisfaction as measured by the KMSS among individuals who are

currently in a marriage/committed partnership for at least five years and are currently working as municipal first responders for at least five years?

Table 5 summarizes the multiple linear regression that assessed the relationship between PTSD symptom severity, relationship interpersonal support, and marital satisfaction.

Table 5

Linear Regression Between PCL-5, KMSS, and MISEL,

Effect	B	SE	Beta (ß)	*t*	*p*	95% CI	
						LL	*UL*
Intercept	3.73	.61		6.16	.001	2.52	4.94
Interpersonal Support	.167	.12	-.2	1.40	.17	-.40	.07
Marital Satisfaction	-.28	.20	-.21	1.45	.15	-.66	.10

Note. $F(2,67)=5.14$, $p = .001$, $R^2= .13$. CI = confidence interval; LL = lower limit; UL = upper limit.

A multiple linear regression was calculated to predict scores on PTSD symptom severity with scores on both relationship satisfaction and relationship interpersonal support. The MISEL consisted of 10 items (a = .89), the KMSS consisted of 3 items (a = .97), and the PCL-5 consisted of 20 items (a = .95). A significant relationship was found $F(2,67) = 5.14$, $p = .008$), with an R^2 of 0.13. Both marital satisfaction and interpersonal support were negatively related to PTSD symptom severity; however, the confidence intervals suggest that for some participants marital satisfaction and interpersonal support were positively related to PTSD symptom severity.

Marital satisfaction, b = -.17, t(67) = -1.40, p = .17, 95% CIs [-.40, .07] and the interpersonal support, b = -.28, t(67) = -1.50, p = .15, 95% CIs [-.66, .10]. In this model when relationship interpersonal support and relationship satisfaction are considered together, they can explain 13.3% of PTSD symptom severity. Together, the variables predict PTSD symptom severity at a higher rate compared to the 11% on interpersonal support and 10% of relationship satisfaction that were found separately on the previous two analyses above pertaining to Research Questions 1 and 2. The research team also assumed collinearity, so we ran correlations, which showed to be statistically significant. Relationship interpersonal support (R_s^2 = .81) by itself explains 81% of the regression model or 10.77 of the total regression of 13.3.

Qualitative Findings: Qualitative Research Questions

Qualitative Research Question 1: How do first responders perceive their relationship interpersonal support as buffering their PTSD symptom severity? Survey Question: Have you ever found your spouse/partner to be helpful or comforting during an anxious moment related to job trauma? Please explain.

Qualitative Research Question 2: How do first responders perceive their relationship satisfaction as buffering their PTSD symptom severity? Survey Question: When considering your satisfaction with your spouse/partner, describe how your satisfaction affects how you "deal with" the trauma you experience as a firefighter or police office. Survey Question: Can you recall an experience in which you felt satisfied or dissatisfied with your spouse/partner following a work-related stressor or trauma? Please explain.

Qualitative Research Question 3: How do first responders perceive their relationship functioning as impacting their PTSD symptom severity? Survey Question: Please identify how the support from your spouse/partner or lack of support from your spouse/partner has impacted

your ability to deal with traumatic events you have experienced as a firefighter or police officer. Please explain.

The data collected from Research Question 3 will not be included in the dissertation as the coders agreed that the coded data from this question did not add additional information or themes to the study. I coded the three qualitative questions separately, keeping themes and categories found during each level of analysis confined to the original research question. After completion of my coding analysis, it was evident that there were several shared themes between research questions, and these themes and categories will be discussed in chapter 5. For the purpose of looking specifically at the answers given by participants per each research question, the following qualitative findings are organized by research question.

Qualitative Research Question 1: How Do First Responders Perceive Their Relationship Interpersonal Support as Buffering Their PTSD Symptom Severity?

The Qualitative analysis of Research Question 1 yielded 1 theme and 4 subthemes. Table 6 represents a summary of the qualitative theme, subthemes, and categories found during this analysis.

Table 6

Qualitative Research Question 1: Theme, Subthemes, and Categories

Theme 1	Subthemes	Categories
Interpersonal support from spouse/partner relationships	(1) Interpersonal support is perceived as positive and helpful when work-related trauma is disclosed	(a) Understand job (b) Understand trauma processing needs (c) Physical and emotional availability (d) Non-judgmental (e) Trust (f) Listening Skills (g) Encouraging
	(2) Mixed perceptions on interpersonal support	(a) Protect their spouse or partner from trauma (b) Have a belief/value that work and home should be separated (c) Spouse or partner would not understand their work-related stress
	(3) Interpersonal support is not connected to work-related trauma	(a) Surrogate support (b) Work and home are kept separate

Theme 1	Subthemes	Categories
	(4) Interpersonal support is viewed as negative and causing impairment	(a) Spouse influence/reaction (b) Not understanding job (c) Protect from trauma burden

Theme 1: Interpersonal Support from Spouse/Partner Relationships

Theme 1 was drawn from first responder responses to the research question for survey question: Have you ever found your spouse/partner to be helpful or comforting during an anxious moment related to job trauma? Perceived interpersonal support from spouse/partner relationships (Theme 1) yielded the following four subthemes: (1) interpersonal support is perceived as positive and helpful when work-related trauma is disclosed (seven categories); (2) mixed perceptions on interpersonal support due to support as helpful, but first responders are conflicted about disclosure (three categories); (3) interpersonal support is perceived as not connected to work-related trauma (two categories); (4) interpersonal support is perceived as negative and causing impairment (three categories). Each of these four subthemes is supported by qualitative categories that describe the range of responses provided by the participants (see Table 6).

Subtheme 1: Interpersonal Support Is Positive and Helpful When Work-Related Trauma Is Disclosed

The first subtheme emerged from first responders identifying their spousal/partner interpersonal support as helpful in processing work-related trauma. This level of support encouraged open communication with the first responder that impacted their ability to process work-related events. This subtheme includes eight categories that describe how partners and

spouses provide both positive and helpful support to first responders after their experience of trauma at work. These seven categories include: (1) understand job; (2) understand trauma processing needs: space, time, physical presence, and distraction; (3) physical and emotional availability; (4) non-judgmental; (5) trust; (6) listening skills; and (7) encouraging

Understands Job. Quotes for this category include:

> Having been a 911 dispatcher she understands the nature of the calls and incidents that occur working as a firefighter. (Job Understanding, FD20)
>
> The support and understanding from my spouse who works in the field of law enforcement allows a mutual understanding of stressors. She is able to relate and understand the mental and physical stressors of the job. (Job Understanding, PD6)

Understand Trauma Processing Needs: Space, Time, Physical Presence, and Distraction. Quotes for this category include:

> [She] knows when I am having a bad day… She knows to give me space and that once I calm down a little that we are able to talk and work through some of the negative situations. (Space, FD3)
>
> She can immediately tell when something is wrong or bothering me. 90% of the time she's very in tune if a shift affected me, or if a call did. (Time, FD26)
>
> My wife (now) is understanding when I come home stressed and tired…it has not always been that …she has learned that sometimes I just need to sit in and relax for a bit. (Physical Presence, FD12)
>
> My wife is able to see when accumulated stress is starting to impact me and tries to plan events or vacations to help remove me from the stress and help me unwind. (Distraction, PD13)

Physical and Emotional Availability. Quotes for this category include:

I always know my spouse is there if needs be; no matter what I am going through she has never left my side. (Physical Availability, PD21)

My wife has a way of getting me to relax, just by looking at her and listening to her tell me to breath and that it is ok(Emotional and Physical Availability, FD8)

Non-Judgmental. Quotes for this category include:

Her support was instrumental in dealing with work stress. The ability to vent without fear of judgement was crucial to mental well-being.

She is typically open-minded and fair in her advice or opinions… always empathetic. (Non-Judgmental, FD49)

She is never judgmental of the way I feel. I do not believe that she would ever talk behind my back.(Non-Judgmental, FD35)

Trust. Quotes for this category include:

Having her as a trusted partner and advisor means I always [have] someone to talk to. I trust her advice and know it's always in my best interest. (Trust, FD39)

Listening Skills. Quotes for this category include:

Her support is provided mainly just by listening and expressing sympathy for the involved parties. I do not want to sound like I am trivializing "just listening" (Listening, FD56)

Encourages Processing. Quotes for this category include:

She continues to push me to get better. (Encouraging, FD3)

My wife advocates for strong debriefing with my brotherhood and to use the tools my department has set in place for me. (Encouraging, FD4)

Subtheme 2: Mixed Perceptions on Interpersonal Support

Some participants identified mixed perceptions when disclosing to spouses about work-related trauma. These mixed experiences demonstrate that the participants have had good experiences with disclosing to their spouse/partner, but typically they chose not to disclose due to reasons included in the following three categories: (1) protect their spouse/partner from the trauma; (2) have a belief/value that work and home should be separated; (3) spouse/partner would not understand their work-related stress/trauma.

Protect Their Spouse From the Trauma. Quotes for this category include:

I do not feel my spouse really has a good way to process the stresses [that] I experience due to my career… He is very empathetic… he reminds me to relax (Protection, FD55)

Many times, I have shielded my spouse from those events. It seems unfair to place that burden on her. When I have shared, she had been sympathetic. (Protection, FD37)

I don't like to expose her to work stuff. (Protection, FD34)

Have a Belief That Work and Home Should Be Separate. Quotes for this category include:

I have a very solid partner to communicate with…I try to separate work from home and talk with others about traumatic experiences, if I need someone to speak with, my wife is always there. (Separate Work, FD30)

I do my best to separate work life from home life so in my mind, they are two different animals. But....My wife has been very supportive of me throughout my career and when I experienced stressful situations, she would go out of her way

to help me in any way she could. (Separate Work, FD33)

Spouse/Partner Would Not Understand Their Work-Related Stress/Trauma. Quotes for this category include:

She loves me. But she'll never understand where I've been and what I've done. (Not Understanding, FD10)

No. She cannot handle the things that I see, and had told me as much, though, when I was stressed [she] was patient with me while I worked through it. (Not Understanding, FD54)

Subtheme 3: Interpersonal Support Is Not Connected to Work-Related Trauma

When considering how their interpersonal support impacted their ability to buffer work-related trauma, many participants did not believe there was a connection between PTSD symptom severity and their spousal support. This subtheme included two categories: (1) surrogate support: support limited to peers, department debriefing tools, or clergy; (2) work and home are kept separate. Several participants reported that support for work-related trauma was disclosed to surrogate support due to not connecting spousal support with work-related trauma. Other participants stated that they intentionally kept work and home separated at all times.

Surrogate Support. Quotes for this category include:

I have established a group of fellow firefighters that I can and do talk to without judgement. (Colleague Support, FD54)

My wife advocates for strong debriefing with my brotherhood and to use the tools my department has set in place for me. (Colleague Support, FD4)

After my traumatic event and I talked to my peer support team and church guys. It felt like a weight was lifted off of the situation. (Colleague/Church Support, FD45)

Separate Work From Home. Quotes for this category include:

Work usually stays at work. (Separation, FD17)

I deal with traumatic events on my own without them even having any knowledge of the events. I don't take my work events home. I leave them at work. (Separation, FD31)

I do my best to separate work life from home life so in my mind, they are two different animals. (Separation, FD33)

Subtheme 4*: *Interpersonal Support Is Viewed as Negative and Causing Impairment

The last subtheme emerged from participant responses that identified their spousal/partner interpersonal support as negative in a way that impaired the processing of their trauma. This subtheme appears to be based on prior experiences in which the first responder disclosed work-related trauma to their spouse/partner and received feedback that they viewed as unhelpful or damaging to their processing. Categories for subtheme 4 include: (1) spouse influence/reaction; (2) Not understanding job; (3) Protect from trauma burden.

Spouse Influence/Reaction. Quotes for this category include:

In the beginning of my career it [lack of spousal support] made things difficult and forced me to find other people to talk to. (No Support, PD10)

I don’t talk to her about much involving my job or advice, mainly because she has to go into too great of detail. (Spouse Reaction, PD1)

She doesn't want to know about anything work related. (No Support, PD7)

Not Understanding Job. Quotes for this category include:

Sometimes I wish my wife can understand that she can't see exactly how I feel because she doesn't do what I do. (Job Understanding, FD21)

Civilians can't understand what it is we see or go through as you progress through your career. It was always best for her to leave me alone. (Job Understanding, FD53)

She just doesn't understand what I go thru every day and have for well over 20 years. (Job Understanding, PD3)

Protect From Trauma Burden. Quotes for this category include:

I try to protect her from what I deal with daily so that she doesn't over think things or get too worried. (Protection, PD1)

Just feel like I should keep it to myself if I can't share with her. (Protection, FD48)

Qualitative Research Question 2: How Do First Responders Perceive Their Relationship Satisfaction as Buffering Their PTSD Symptom Severity?

The Qualitative analysis of Research Question 1 yielded 1 theme and 4 subthemes. Table 7 represents a summary of the qualitative theme, subthemes, and categories found during this analysis.

Table 7

Qualitative Research Question 2: Theme, Subthemes, and Categories

Theme 2	Subthemes	Categories
Perceived Marital Satisfaction/Dissatisfaction from Relationship	(1) Partner characteristics in satisfied relationships	(a) Good listener (b) Non-judgmental (c) Understands job (d) Understands processing needs
	(2) Partner characteristics in dissatisfied relationships	(a) Not understand of job (b) Spouse as physically and emotionally unavailable

Theme 2	Subthemes	Categories
	(3) Relationship satisfaction not connected to PTSD symptom severity	(a) Relationship satisfaction and PTSD symptom severity not related
		(b) Separate work and home
		(c) Surrogate support
	(4) Work-related trauma impacts relationship satisfaction	(a) Trauma Impact

Theme 2: Perceived Marital Satisfaction From Spouse/Partner Relationships

Theme 2 was drawn from the first responders' responses to the two survey questions that accompany RQ 5: (1) Can you recall an experience in which you felt satisfied or dissatisfied with your spouse/partner following a work-related stressor or trauma? and (2) When considering your satisfaction with your spouse/partner, describe how your satisfaction affects how you "deal with" the trauma you experience as a firefighter or police officer.

There were four subthemes that emerged from the participants' narratives that specifically addressed marital satisfaction: (1) relationship satisfaction and spouse/partner characteristics; (2) relationship dissatisfaction and spouse/partner characteristics; (3) relationship satisfaction not connected to PTSD symptom severity; (4) work-related trauma impacts relationship satisfaction (see Table 4). When assessing marital satisfaction, participants identified spouse/partner characteristics that impacted their ability to process work-related trauma.

Subtheme 1: Partner Characteristics in Satisfied Relationships

The first subtheme identified spouse/partner characteristics from first responders who perceived their marriage to be satisfying. This subtheme includes four categories of spouse/partner characteristics in satisfied relationships: (1) good listener; (2) non-judgmental; (3) understands job; (4) understands processing needs.

Good Listener. Quotes for this category include:

She listens, she may tell me to leave out the details, but she always listens. (Listens, FD51)

I can talk to my wife about most things I go through without her being pushy on sensitive subjects. (Constructive listening, FD44)

I know that there is always someone I can talk to. (Listens, FD9)

Non-Judgmental. Quotes for this category include:

Knowing we can discuss runs/incidents without fear of judgment. (Judgment, FD52)

Understands Job. Quotes for this category include:

[It] is nice to have someone who understands the stress we deal with. (Job Understanding, PD5)

She rarely complains about my being called out in the middle of the night, having to sleep at odd hours, missing engagements or appointments, or working later than expected…she not only understands my level of commitment (Job Understanding, PD18)

She was a previous 911 dispatcher and understands the challenges dealing with traumatic incidents. (FD20)

Understands Trauma Processing Needs: Space, Time, Physical Presence, and Distraction. Quotes for this category include:

It helps to know that she is understanding of my attitude or emotional state on the occasions that I do come home from a stressful shift. She is very understanding of my needs during those time. (Processing Needs, FD59)

She understands that sometimes I need time to myself to unwind or process things that happened at work. (Time, PD13)

She helps me deal with these things by being supportive and understanding if I want to come home and avoid thinking about work. (Distraction, FD39)

Subtheme 2: Partner Characteristics in Dissatisfied Relationships

The second subtheme emerged from participants who were dissatisfied in their relationship. They identified spouse/partner characteristics contributing to their dissatisfaction (two categories): (1) not understanding; (2) spouse as physical and emotionally unavailable.

Not Understanding. Quotes for this category include:

They wouldn't get it. I don't talk about it... Bury it down deep and keep moving. (Not Understanding, FD10)

I sometimes feel frustrated that my wife doesn't seem to "get" the sleep stresses we have as firefighters. (Not Understanding, FD56)

Spouse as Physically and Emotionally Unavailable. Quotes for this category include:

Left to deal with it on my own. (Physically Unavailable, F2)

Sometimes she is too busy or doesn't realize I'm trying to talk to her. (Emotionally Unavailable, FD57)

I don't tell her about traumatic or painful events from work. I used to, and I found out that it was stressful for her to hear about things that happen at work, so I stopped. (Emotionally Unavailable, FD39)

Subtheme 3: Relationship Satisfaction Not Connected to PTSD Symptom Severity

Several participants did not associate marital satisfaction and their ability to process/cope with work-related trauma/stress. Categories for subtheme 3 are: (1) marital satisfaction and trauma processing are unrelated; (2) separate work and home; (3) disclose to peers only.

Marital Satisfaction and PTSD Symptom Severity Are Unrelated. Quotes for this category include:

> It [marital satisfaction] has nothing to do with my job. (Unrelated, FD13)
>
> I don't feel that it [marital satisfaction] does [impacts trauma processing]. (Unrelated, FD32)
>
> I don't really associate the two. (Unrelated, FD34)

Separate Work and Home. Quotes for this category include:

> I do not bring those issues home. (Separate, FD46)
>
> I don’t let my feeling about her get into my mind when at work. (Separate, PD1)

Surrogate Support. Quotes for this category include:

> [I] talk with crew or fellow fireman. (Surrogate Support, FD25)

Subtheme 4: Work-Related Trauma Impacts Relationship Satisfaction

When asked about how marital satisfaction impacts their trauma processing, many respondents commented that their trauma is impacting their relationship satisfaction and more specifically, how their lack of disclosure impacts their satisfaction. Quotes for this subtheme include:

> I do find myself being more irritable towards her if I don't talk about calls. (Trauma Impact, FD30)

Lashing out on my spouse unknowingly when I get home and having to apologize right after. (Trauma Impact, FD53).

I still feel the same about our relationship, I just feel I get frustrated easier at times. (Trauma Impact, FD37)

Integrating Themes 1 and 2

When merging the qualitative data from Research Questions 4 and 5, there were many overlapping themes drawn from the participants' narrative of their trauma processing experience within their intimate relationships. The qualitative data suggests that there are specific spouse/partner characteristics that impacted these first responders' ability to process work-related trauma. Table 8 lists these overlapping themes, which identified specific spouse/partner characteristics, support characteristics, and personal beliefs that impacted the participants' trauma processing**.** When I integrated the themes from Questions 1 and 2, a processing theme and processing impact, emerged (see Table 8).

This overlap in qualitative themes points to the possibility that there is little difference between relationship satisfaction and perceived spouse/partner support. Relationship satisfaction and spousal/partner support may be part of the same construct. This overlap is also supported in the quantitative data as reflected in post hoc analysis completed by Dr. Dejon, the CRDA specialist who guided me through analysis of the quantitative data.

Table 8

Qualitative Themes Integrated: Processing Impacts

Theme 3	Subthemes	Categories
Trauma processing impacts	(1) Relationship support and satisfaction characteristics positively impact trauma processing	(a) Increased disclosure (b) Home as safe place to process (c) Creates space for trauma processing
	(2) Lack of relationship support and relationship dissatisfaction inhibits trauma processing	(a) Decreased disclosure
	(3) Inability to process trauma impacts relationship and PTSD symptoms	(a) Fluctuating mood (b) Increased general stress (c) Increased irritability (d) Relationship impact
	(4) Relationship satisfaction not connected to trauma processing	(a) Marital satisfaction and trauma processing unrelated (b) Separate work from home (c) Surrogate support helps processing

Theme 3: Trauma Processing Impacts

From the merged qualitative data that described relationship satisfaction and relationship support emerged insight/data revealing the impact that spouse/partners have on first responders' trauma processing. The above-mentioned themes drew on data from participants that identified specific spouse/partner characteristics, support characteristics, and personal beliefs that impacted their trauma processing. Theme 3 expands on these findings and identifies how these variables specifically impact their trauma processing.

Subtheme 1: Relationship Support and Satisfaction Characteristics Positively Impact Trauma Processing

The participants identified how spouse/partner characteristics in supportive, and satisfied relationships impacted their ability to process work-related trauma. When first responders view their spouse/partner as: good listeners, non-judgmental, understanding of job, understanding of processing needs: Space, time, physical presence, and distraction, physically and emotionally available, trusting, and encouraging, they report their trauma processing as being impacted in the following ways.

Increased Disclosure. Quotes for this category include:

> I can tell her about things is a great weight off of my chest. (Mental weight, FD36)
>
> Her support was instrumental in dealing with work stress. The ability to vent without fear of judgement was crucial to mental well-being. (Well-being, FD49)
>
> Being able to talk to her about traumatic events at work helps me to process them and not carry them around. (Mental weight, PD13)

Home as Safe Space to Process. Quotes for this category include:

Satisfaction within my marriage gave me a safe place to use as refuge. (Safe Space, FD49)

It makes all the difference in the world. Life/work stressors are easier when you have a stable home environment. (Safe Space, PD14)

Home is my safe space. (Safe space, FD8)

Creates Space for Trauma Processing. Quotes for this category include:

Being satisfied with in my marriage allows me to come home and not be stressed at home. It allows me to deal with the stress from work. (Processing Space, FD47)

If my home life were not so great, my plate wouldn't be as clean so there would be less room to take on the trauma. (Processing, Space, FD63)

Knowing I have a solid relationship just helps me deal with job issues. (Processing Space, FD27)

Subtheme 2: Lack of Relationship Support and Relationship Dissatisfaction Inhibits Trauma Processing

The participants identified how spouse/partner characteristics in unsupportive, and dissatisfied relationships impacted their ability to process work-related trauma. When first responders view their spouse/partner as: not physically and/or emotionally available, not understanding of job, not understanding of processing needs: space, time, physical presence, not listening, and not trusting their spouse/partner's reaction to disclosure, they report their trauma processing as being impacted in the following ways.

Decreased Disclosure. Quotes for this category include:

Spouse is often emotionally detached and doesn't pick up clues that affection or reassurance is needed… It causes me to seek attention elsewhere.

Just not understanding why I am acting the way that I was acting after a major event… I avoid talking to her (Decreased Disclosure, PD3).

I don't talk to her about much involving my job or advise, mainly because she has to go into too great of detail. (Decreased Disclosure, PD1).

Subtheme 3: Inability to Process Trauma Impacts Relationship and PTSD Symptoms

When participants identified an inability to process work-related trauma with their spouse/partner they reported that their mental health symptoms were impacted (1) fluctuating mood at work; (2) increased generalized stress; (3) increased irritability. Participants reported that the inability to disclose to their spouse/partner negatively impacted their relationship.

Fluctuating Mood at Work. Quotes for this category include:

It is related (satisfaction and trauma processing), I know in the past when we had tough patches, it directly affected my mood and stress responses at work. (Mood Impact, FD54)

When there is turmoil at home the stresses at work seem to be amplified. (Increased Stress, FD26)

Increase in Generalized Stress. Quotes for this category include:

Home is like a safe place to recuperate and if the relationship is in a bad place, then there is no relief. (No Relief, FD26)

Increased Irritability. Quotes for this category include:

Sometimes I come home very irritated. (Irritable. FD17).

I do find myself being more irritable if I don't talk about calls (Surrogate Support, FD 30).

Relationship Damage. Quotes for this category include:

I feel I cause damage to our relationship by not expressing what I am going through (Relationship Impact, FD4).

When our relationship was not in a good place. I would come home stressed.... We argued a lot and things just seemed to snowball with more and more stress. (Relationship Damage, FD26).

Subtheme 4: Relationship Not Connected to Trauma Processing

Among the participants, throughout the qualitative data, many did not relate their relationship satisfaction or spousal/partner support to their ability to process trauma or their PTSD symptom severity. Subtheme 4 represents the merged data of the participants that did not associate a relationship between the variables of their marital/partner relationship with their work-related trauma.

Marital Satisfaction and Trauma Processing are Unrelated. Quotes for this category include:

Unrelated. (Unrelated, FD 47).

I don't feel that issues as a firefighter affect my relationship (Unrelated, FD45).

Not that I can recall but, since I do not communicate those experiences, I have likely behaved this way and not related the incident. (No Connection, PD1).

Separate Work and Home. Quotes for this category include:

Work usually stays at work. When I'm home I try to be present... not a lot of down time that I spend just thinking about work. (Separate work and home, FD17)

I don't talk work at home. (Separate work and home, FD4).

It is our marital agreement our work stays at work. (Separate work and home, FD6).

Surrogate Support Helps Processing. Quotes for this category include:

After my traumatic event and I talked to my peer support team and church guys. It felt like a weight was lifted off of the situation. (Surrogate Support, FD45).

I tend to rely on peers that have been through similar situations… I do find myself being more irritable if I don't talk about calls (Surrogate Support, FD30).

Qualitative Question 3: How Do First Responders Perceive Their Relationship Functioning as Impacting Their PTSD Symptom Severity?

After coding the first three questions and reaching the thematic stage for the data from each question, my co-coder and I realized that our data from Question 3 only duplicated the findings yielded from Questions 1 and 2. At that point, we agreed that the data was saturated and made the decision to drop qualitative Question 3 from further analysis. Our rich data from Questions 1 and 2 offered a thorough picture of how the first responder viewed their marital/relationship satisfaction and spousal/partner support. The data from Question 3 did not add new themes to our understanding of those two variables.

Summary

The convergent mixed methods approach allowed me to simultaneously gather qualitative and quantitative data from participants with the intentions of using the qualitative findings to elaborate on the first responder experience of PTSD symptom severity, marital support, and marital satisfaction as measured by the PCL-5, KMSS, and MISEL. In this sample of 77 first responders (firefighters, $n = 59$; police officers, $n = 18$), 80.3% had been a first responder for 13 or more years and had all been married or in a committed relationship for at least 5 years, 80.26% of participants had been married for more than 11 years. After analyzing the quantitative and qualitative data separately, the quantitative findings were able to confirm the qualitative findings. The quantitative findings suggest that interpersonal support and relationship

satisfaction can predict PTSD symptom severity and even more specifically, relationship satisfaction and interpersonal support can predict PTSD symptom severity more accurately together. The data show that as marital satisfaction increases by 1, PTSD symptom severity decreases by .32 and as relationship support increases by 1, PTSD symptom severity decreases by .33. The qualitative data supports these findings and elaborates upon the quantitative findings.

The qualitative analysis found that first responders viewed their relationship interpersonal support as helpful in processing work-related trauma by encouraging disclosure. It also supported the inverse relationship found in quantitative analysis, specifying that negative interpersonal support such as not understanding their job or trauma processing needs, exacerbated their work-related trauma experience. Qualitative analysis also found that first responders viewed their relationship satisfaction as impacting their ability to process work-related trauma. Some of the participants reported that when they were satisfied in their relationship, they were able to "deal" with work-related trauma/stressors more effectively, their qualitative responses also supported the inverse relationship found in the quantitative data, reporting that when they were dissatisfied in their relationships their work-related stress and ability to process trauma was strained. Theme 4 in qualitative Question 2 found that many first responders reported work trauma as negatively impacting their relationship satisfaction, once again supporting the inverse relationship found in the quantitative analysis.

CHAPTER V

DISCUSSION

First responders are a population that are almost guaranteed repeated exposure to direct or indirect trauma related incidents. According to the *DSM-5*, one must be exposed directly or indirectly to death, threat of death, serious injury, or threat of serious injury to meet diagnostic criteria for PTSD (APA, 2013). For first responders this direct and indirect exposure is a routine event of their job. Although first responder PTSD research has increased over the last decade, research is still very limited and, more specifically, it is limited in the understanding of first responder PTSD within the family system (Petrie et al., 2018; Stanley et al., 2015). The purpose of this current study was to gather data to further understand how the marital/partner system could act as a buffering agent against PTSD symptom severity. BFST would suggest that the PTSD experience of first responders reverberates through the entire family system (MacKay, 2012). Just as BFST would assume this systemic impact, this research hypothesized that the family system, more specifically the marital/partner marital and social support system, could buffer the first responder's PTSD experience. This chapter discusses the quantitative and qualitative findings of this research and how these findings compare to previous literature.

Findings

By using convergent mixed methods approach, I found a significant relationship between relationship satisfaction, relationship social support and PTSD symptom severity. Also, using a mixed blend of qualitative and quantitative data, my research brings new insights to the unique first responder experience. The quantitative data suggest that there is a significant inverse relationship between PTSD symptom severity, marital satisfaction, and marital support. In addition, the data suggest that when we examine relationship satisfaction and support together,

we can now understand how that combination better predicts first responder PTSD symptom severity. These findings are supported by previous research that states the marital interpersonal support can act as a healing agent for individuals exposed to trauma (Brancu et al., 2014). The qualitative findings of this research provided the personal insights of first responders that help us better understand specific spousal characteristics that buffer and exacerbate PTSD symptom severity, beliefs that impact a first responder's inclination to access support in his or her relationship; and how their trauma processing is specifically impacted.

Relationship Support and PTSD Symptom Severity

Interpersonal Support as Helpful and Positive

The quantitative findings showed that as spousal/partner support increased, PTSD symptom severity decreased and, conversely, as spousal/partner support decreased, PTSD symptom severity increased. These findings are supported in social support literature that concludes that interpersonal support from an intimate partner reduces the manifestation of PTSD symptoms (Brancu et al., 2014; Gerlock et al., 2014). My quantitative analyses replicated these previous findings that spousal support is crucial in the buffering/exacerbating effects of first responder PTSD. More specifically, the first responders of this study reported specific experiences that were related to feeling supported or unsupported by their spouse/partner. Those first responders who felt supported by their spouses reported the ability to disclose their work-related trauma with their partners more often, allowing them the ability to release the mental weight of their job. The increased ability to have a space in which first responders can let go of the mental weight of their trauma exposure could explain why PTSD symptom severity decreases in a space of adequate spousal/partner support. Bowen referred to this phenomenon as

a dyadic buffer, and BFST suggests that healthy relational resources can increase survival and create less anxious physiological states (MacKay, 2012).

Many of the first responders who reported their relationship as being helpful and having a positive impact on their trauma processing reported that their spouse/partner had an ability to relate to their job due to a similar occupation. Those who were in a relationship with another first responder (e.g., nurse, police officer, or dispatcher) reported having increased support and the opportunity to disclose more of their work-trauma experience to a spouse who "walked the walk." First responders also reported their spouse/partner's understanding of their specific trauma processing needs of space, time, physical presence, and distraction as being helpful support that positively impacted their ability to process work-related trauma. Specific to their understanding of processing, when their spouse/partner could meet them where they were, whether that was needing physical touch or physical space, first responders reported the ability to be more genuine and authentic, allowing them to adequately process their trauma in a space of acceptance.

Processing their trauma with a spouse/partner who was physically and emotionally available was reported as being helpful, creating a space in which relationship support was consistently reliable. First responders identified their spouse/partner's ability to be non-judgmental, trusting, good listeners, and encouraging trauma processing as characteristics that increased their ability to disclose and process work-related trauma. These findings remain consistent with previous research that reported increased communication, listening and empathy from a spouse as contributing to perceived spousal support (Campbell & Renshaw, 2018; Henry et al., 2011). Previous literature also stated that when a partner encouraged their spouse to

process their trauma, they created a safe space, reinforcing for the partner that were not alone (Weisenhorn et al., 2017; Zang et al., 2017).

Helpful Interpersonal Support and Conflicting Beliefs

Many first responders reported helpful and positive experiences of spousal/partner support, but due to personal beliefs, these first responders struggled with disclosing work-related trauma to their spouse and accessing their support as a trauma resource. First responders held multiple beliefs, such as the need to protect their relationship from the trauma, the belief that work and home life should be kept separate, and the belief that spouse/partners could not understand their trauma exposure as a first responder. These beliefs are possible examples of rules that in turn shape their behavior to not access their relationship as a resource for buffering PTSD symptoms or trauma disclosure. The intimate partner relationship is a system of behavioral exchanges and interactions between the first responder and their spouse/partner, and there are rules that govern these interactions and keep their system in homeostasis (Bowen, 1978).

Interpersonal Support and Trauma Processing Not Related

Some first responders disclosed that they did not believe that interpersonal support from their spouse/partner and their experiences/traumas as a first responder were related, and they did not have a history of using their spouse/partner as a resource to manage stress or trauma. Previous literature would suggest that PTSD symptoms may decrease a first responder's ability to recognize social support benefits (Ponder & Aguirre, 2012). First responders who had mixed feelings about trauma disclosure with a spouse/partner maintained beliefs about the separation of work and home and the need to protect their partner. This data may suggest that family rules may play a role in how first responders choose to process their work-related trauma. These first

responders reported a belief in keeping work and home separate and the use of surrogate support. Surrogate support that was specifically identified in the qualitative data was support from work colleagues, peer support that had been set up by their departments, and religious support such as church friends or pastors. For the first responders in this study who did not view their spouse/partner as a support resource, the reliance on surrogate support was integral to processing work-related trauma and coping with PTSD symptoms. This observation is similar to that of Martin et al. (2017) who found that peer social support was a strong protective factor for first responder PTSD symptom severity, specifically suicidality.

Interpersonal Support as Negative and Impairing Process

The significant inverse relationship found in the quantitative analysis is supported by the narrative of some first responders who reported spousal/partner experiences that were negative and impaired their ability to process work-related trauma. Just as BFST assumes that spousal/partner relationships can aid in less anxious states, they can also perpetuate dysfunctional patterns (Kerr & Bowen, 1988). These patterns included spouses/partners who reacted to disclosure with inconsistent emotional or physical availability, pried for information the first responder was not ready to share, or gave "bad" advice due to their inability to understand the nature of their job and the impact of their job on their mental health. BFST would suggest that family of origin rules that dictate how emotions are processed or how communication occurs can impact the ability to healthily discuss trauma experiences as a couple (MacKay, 2012). For some of the first responders who experienced a spouse/partner as being emotionally impacted by disclosure, the first responder moved to a place of accommodation through behavioral adaption to protect their spouse/partner from the trauma burden (Bowen, 1978). Previous research also suggests that the systemic impact of trauma is one of transmission

from the first responder to the spouse through secondary trauma, creating increased distress (Figley, 1986).

Relationship Satisfaction and PTSD Symptom Severity

The quantitative findings of this study showed that as perceived spousal/partner satisfaction increased, PTSD symptom severity significantly decreased and as spousal/partner satisfaction decreased, PTSD symptom severity significantly increased. The first responders of this study shared through qualitative responses that they were more satisfied in their marriage/relationship when their spouse/partner demonstrated an ability to understand their job as a first responder and understand and accommodate their needs while processing work-related trauma. The qualitative data also identified some specific ways in which first responders perceived spousal/partner understanding as impacting their ability to process work-related trauma.

Specifically identified with a spouse/partner's understanding of "the job," first responders who were satisfied in their relationship reported increased disclosure of work-related trauma to their spouse/partner and an increased ability to process work-related trauma authentically and genuinely. The first responders in this study reported that a spouse/partner's ability to understand their job allowed them to disclose job-related trauma to their spouse/partner more often and with more detail. This job understanding was more frequent in the narrative of first responders who disclosed that their spouse/partner were in the same or similar fields. For first responders whose spouses were not in similar fields, they reported that being supportive of their job dynamics (i.e., work hours, work stress, and sleep schedule) was indicative of job understanding.

First responders who reported relationship satisfaction emphasized the importance of their spouse/partner's ability to understand and accommodate their trauma processing needs. A

spouse/partner's ability to listen and be non-judgmental were characteristics that were associated with the first responder feeling understood and accommodated in their trauma processing. First responders reported that when considering their work-related traumas and stressors, they were satisfied in their relationship when their spouse/partner gave them the space, time, and support they needed. These processing needs were found more often with spouses/partners that showed the ability to listen and be non-judgmental. These spousal characteristics not only increased the first responders' disclosure of work-related trauma but increased their disclosure of their PTSD symptom experience. For example, first responders who identified their spouse/partner as a good listener were more likely to disclose that they were struggling with irritability, depression, or mood swings. Multiple first responders who were satisfied in their relationships referred to their home and relationship as a refuge from work. More specifically, they reported increased feelings of calm, increased comfort, increased ability to relax outside of work, decreased stress, and increased relief.

Relationship Dissatisfaction and PTSD Symptom Severity

Those first responders who were dissatisfied with their partners reported that their partner did not understand their job, which led to their partner providing feedback that was not helpful. First responders also identified that this lack of understanding kept their spouse from being emotionally and physically available which impacted their ability to feel secure in processing their trauma. This culminated in the dissatisfied first responders reporting that they were less likely to access support from their partner. First responders dissatisfied with their relationship reported more themes of inability to process their trauma due to decreased disclosure and increased stress at work and at home. Several first responders reported decreased disclosure and isolation with their work-related stressors/trauma at home. First responders who reported

dissatisfaction in their relationships reported increased general, chronic stress and difficulty finding relief from work-related stress. Dissatisfied first responders also reported their marital dissatisfaction as impacting their mood at work. More specifically, they reported their isolation in dealing with their work-related trauma as overwhelming.

Trauma Impacts Marriage/Relationship

The literature suggests that PTSD symptoms such as avoidance, alienation, detachment, and emotional numbing can erode the interpersonal relationship of adults (Brancu et al., 2014), specifically related to safety, trust, communication, and intimacy variables (Monson et al., 2007). The first responders in this study reported that their trauma impacted their relationship satisfaction by increasing their overall irritability levels. First responders reported that often they brought work-stress home and it manifested in short tempers and increased irritability with their spouse/partner. This irritability was identified by these first responders as causing damage and impairment to their relationship satisfaction due to increased conflict. More specifically, first responders reported that their lack of disclosure about work-related trauma damaged their relationship satisfaction and noted that when they had open dialogue with their spouse/partner about work, they were more satisfied in their relationship; however, often they chose to not open up with their spouse.

When considering how marital satisfaction impacts a first responder's ability to process work-related stress/trauma, my findings suggest that the spouse/partner characteristics that first responders related to relationship satisfaction created space for the first responder to process their work-related trauma, whether that was through a dialogue that described particular events, or how they were experiencing their PTSD symptoms (e.g., depression, anxiety, and irritability).

Relationship Satisfaction, Interpersonal Support and PTSD Symptom Severity

The quantitative data suggests that knowing how a first responder rates their marital satisfaction and perceives spousal support together can help us predict first responder PTSD symptom severity more accurately. The quantitative data suggests that knowing both variables together, is a significant predictor of PTSD symptom severity. Based on previous literature, the differences we are seeing in the quantitative data could be reflecting the positive association between interpersonal support and relationship satisfaction (Rostami et al., 2013).

The qualitative data show consistent themes of spousal characteristics that support or hinder the ability of first responders to process their work-related stressors and traumas. The first responders in this study also identified how the inability to process their work-related traumas impacted PTSD symptom severity. When merging the qualitative data, we found that relationship satisfaction and support impacted the first responders' ability to process their work-related traumas. The first responders who felt unsupported or dissatisfied in their relationship were not only less likely to disclose work-related stressors, but they reported more negative symptoms such as irritability, increased anxiety, and feelings of isolation. First responders who were satisfied and supported in their relationship reported having increased disclosure with their partners and felt a strong sense of support, reported feeling increased calm, decreased anxiety at home and work, and a general feeling of safety to process their experiences as a first responder.

Theory

Creswell (2016) identified theory in qualitative research as an interpretative lens that informs the process of the study. A BFST lens was used to develop the research questions in this study. For the purpose of this study, BFST (Bowen, 2013) offered a lens to assume that there was a relationship between PTSD symptomology and the marital relationship. A BFST lens creates

space to look at first responder PTSD manifestation as maintaining dysfunctional interactions or finding a new homeostasis that buffers the PTSD experience.

BFST is based on the idea that a person's behavior is intimately connected with the behaviors and attitudes in their family and the qualitative data builds on this concept, specifically focusing on this concept in the marital relationship. The data of this research suggests that a spouse/partner's behaviors and attitudes directly impact the first responder's decision to process work-related trauma. Another foundational concept in BFST is the concept of differentiation of self, the literature states that a well-differentiated self has the capacity to manage personal anxieties and the ability to maintain one's feelings and thoughts in the presence and pressure of close, intimate relationships. The qualitative data in this study showed that when processing needs of time, space, physical presence, and distraction were understood and met by a spouse/partner, a balance of autonomy and togetherness was present. This balance increased a first responder's likelihood to outwardly process work-related trauma.

Limitations

There were several limitations to the sample of this study. After the first recruitment attempt, I was unable to draw an adequate sample size of firefighters, this led me to open the study to a larger population of first responders, police officers. Adding police officers to this study limited my ability to focus the results of my data to firefighters. Other sample limitations were that I only had six female first responders, and the majority of our first responders were Caucasian and African American. These sample limitations restricted my ability to test for gender differences and to generalize results to other races. Another limitation I identified was in the qualitative data, during analysis the research team found that qualitative Question 3 yielded data that duplicated data yielded by Questions 1 and 2, which limited the amount of diverse

qualitative data acquired, a question with another focus could have brought in less saturated information.

Implications

The finding that positive relationship satisfaction and spousal/partner support reduces PTSD symptom severity in first responders is an important finding that will not only help mental health providers who work with first responders afflicted with PTSD, but it adds to research that paves the way for implications related to policy within the first responder field. The various themes yielded in this study will help mental health providers and educators build programs that build the capacity of spouses/partners of first responders to provide positive support for first responders and first responder marriages struggling with PTSD. The findings of this study suggest that mental health professionals can treat the couple to impact the individual, in other words, the system can adjust to accommodate the reverberations of an individual's trauma through the system.

Clinical Implications

The research surrounding first responder PTSD treatment is saturated in the individualistic psychotherapy approach. This research has found that there are significant implications to first responder PTSD treatment regarding their family system, and in particular their marital/romantic partner system. This study found several spouse/partner characteristics that buffered and exacerbated PTSD symptom severity and impacted the first responder's ability to process their work-related trauma. As clinicians, when working with first responders struggling with PTSD, if we know that effective spousal listening helps buffer PTSD symptom severity and increases disclosure and therefore increases frequency of processing work-related trauma, then it would be important to have an accurate understanding of what communication

looks like in their marital system and incorporate psychoeducation that could enhance communication and listening skills. Juxtaposed, the findings in this research suggest that spouse/partner advice giving can exacerbate PTSD symptoms by decreasing disclosure and therefore decreasing the ability for the first responder to process their work-related trauma. This would suggest that when working with first responders and their partners, tendencies to offer advice or to "fix" traumas would need to be addressed. A clinician's understanding of the buffering impact of certain qualities within a relationship could drastically change the treatment approach for first responders with PTSD.

Programs and workbooks that organize psychoeducation related to some of the themes found in this study could help therapists and first responder couples navigate healthy support during PTSD crises or support for the daily stressors of being a first responder. Programming and therapeutic tools that encourage a teamwork approach to a first responder's treatment could aide in a couple's ability to navigate an unclear and difficult time in their lives. If the couple is educated in the idea that their relationship alone could buffer PTSD symptom severity and therefore its daily havoc, PTSD may appear more manageable. This research also suggests that residential treatment facilities for first responders should incorporate more systemic treatment, psychoeducational classes and therapy should be made available to the couple at these facilities, not just the identified patient (the first responder).

Participants in this study reported that decreased disclosure about work-related stressors or their struggles with PTSD symptoms impacted their ability to feel safety and relax at home and decreased their ability to meet basic job requirements while on duty. If clinicians understand the impact that decreased disclosure has on a first responder's daily functioning and ability to perform their job, they could encourage and offer the first responder and the first responder

couple, communication tools that could help increase disclosure. The participants of this study also reported that decreased marital/partner satisfaction and support at home impacted their performance at work.

First Responder Field/ Departments

It would be important that the first responder field and municipal departments understand the impact that their employees' marriages/relationships have on their job performance and ability to cope with daily job stressors. The results of this study indicate that employers should have a vested interest in the health and support their employees are receiving at home, this vested interest could be reflected in continued education training that discusses healthy support at home and its impacts. Continued education training is standard in the first responder field to stay up to date on medical training and national fire and disaster response standards. Adding a continued education class on social support and relationship satisfaction and its impact on work-related stressors and PTSD symptom severity has been indicated by this research to be just as vital as brushing up on EMS skill sets.

Often, departments require that an individual struggling with PTSD or work-related stressors seek individual counseling per policy, these findings imply that marital/relationship counseling could be just as vital as individual treatment and therefore included in departmental PTSD policies. This research indicates that policies in first responder departments should include attention towards the family system, not just the individual. Programs in departments that cater to spouses/partners of first responders could offer support and advocacy.

Implications for Future Research

Current research frequently looks at how PTSD can erode the marital system through the reverberation of symptoms through the system and concepts such as secondary trauma. I wanted

to approach these variables differently by looking at how the marital system could possibly operate as a buffering/healing agent for first responder PTSD. We need more research looking at the buffering/healing perspective so that we can continue to understand the unique implications of the marital system and PTSD symptom severity. Further research looking at specific constructs within marital satisfaction and interpersonal support would be helpful in better understanding more specific variables that impact PTSD symptoms. Through further research we will be able to suggest stronger treatment plans more effectively for practitioners when working with first responder PTSD in the couple setting.

Increasing the number of female first responders in future studies, as well as more varied racial/ethnicity of the first responders, will broaden the usefulness of those studies. In my study, a few female first responders noted that they had to turn to outside friends to discuss their work experiences because their spouses were not supportive or suggested that they quit their job. This tentative finding could be tested on a larger group of female first responders. Increased representation of multiple ethnic groups could expand the understandings of this research in relation to cultural family norms and rules that impact first responder PTSD.

Summary

In this study, I found that first responder PTSD symptom severity has a significant relationship with the quality of spousal support and the relationship satisfaction experienced by the first responder. The intimate relationships of first responders can buffer PTSD symptom severity through allowing space for healthy trauma processing or exacerbate PTSD symptom severity through discouraging trauma processing. I found that the components of marital satisfaction and interpersonal support impact the ability of a first responders to effectively process work-related trauma. When first responders can process their trauma they experience

decreased anxiety, increased ability to relax and empowerment of their trauma processing. When first responders report decreased marital satisfaction and decreased interpersonal support, they report internalization of trauma that inhibits their ability to outwardly process thoughts and feelings associated with work-related trauma. Looking at this data from a BFST lens suggests that adequate first responder PTSD treatment should incorporate a first responder's intimate relationship. In other words, when treating first responder PTSD, a clinician should consider couples therapy as a therapeutic modality, in conjunction with individual psychotherapy.

Conclusion

First responders will continue to experience accumulative trauma, as that is part of their job description. The purpose of this research was to increase the understanding of how relationship satisfaction and spouse/partner support affects first responder PTSD symptom severity. My findings identified specific spouse/partner characteristics not only associated with perceived interpersonal support and relationship satisfaction, but the ability to create a space in which the first responder can effectively process their work-related trauma. Associated with low levels of interpersonal support and relationship satisfaction is a set of spouse/partner characteristics that prevent the first responder from processing their work-related trauma. This data provides educators and mental health clinicians with insights to help first responders and their spouses better understand how they can support each other during PTSD manifestation and chronic trauma exposure.

"*The overall goal [of counseling] is to help family members become 'systems experts' who could know [their] family system so well that the family could readjust itself without the help of an expert."* Murray Bowen (date unknown)

REFERENCES

Alden, L. E., Regambal, M. J., & Laposa, J. M. (2008). The effects of direct versus witnessed threat on emergency department healthcare workers: Implications for PTSD criterion. *Journal of Anxiety Disorders*, *22*(1), 1337-1346. https://doi.org/10.1016/j.janxdis.2008.01.013

Allen, E. S, Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2010). Hitting home: Relationships between recent deployment posttraumatic stress symptoms, and marital functioning for Army couples. *Journal of Family Psychology*, *24*(3), 280-288. https://doi.org/10.1037/a0019405

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Asarnow, J., Glynn, S., Pynoos, R. S., Nahum, J., Guthrie, D. P., Cantwell, B., & Franklin, B. (1999). When the earth stops shaking: Earthquake sequelae among children diagnosed for pre-earthquake psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry*, *38*(8), 1016-1023. https://doi.org/10.1097/00004583-199908000-00018

Babbie, E. (2016). *The practice of social research* (14th ed.). Cengage Learning.

Bartlett, B. A., Smith, L. J., Tran, J. K., & Vujanovic, A. A. (2018). Understanding mental health among military veterans in the fire service. *Psychiatry Research*, *267*(1), 394-399. https://doi.org/10.1016/j.psychres.2018.06.020

Bartlett, B. A., Gallagher, M. W., Tran, J. K., & Vujanovic, A. A. (2019). Military veteran status and posttraumatic stress disorder symptomatology among urban firefighters: The

moderating role of emotion regulation difficulties. *The Journal of Nervous and Mental Disease*, *207*(4), 224-231. https://doi.org/10.1097/NMD.0000000000000958

Berger, W., Coutinho, E. S. F., Figueira, I., Marques-Portella, C., Luz, M. P., & Neylan, T. C. (2011). Rescuers at risk: A systematic review and meta-regression analysis of the worldwide current prevalence and correlates of PTSD in rescue workers. *Social Psychiatry and Psychiatric Epidemiology*, *47*(6), 1001-1011. https://doi.org/10.1007/s00127-011-0408-2

Belvins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, *28*(6), 489-498. https://doi.org/10.1002/jts.22059

Bergstrom, J. (2013). *Marriage and PTSD in OIF/OEF veterans: The biopsychosocial effects of PTSD symptoms and marital functioning* (Publication No. 3615550) [Doctoral dissertation, Palo Alto University]. ProQuest Dissertations Publishing.

Blanco, C. (2011). Epidemiology of PTSD. In D. J. Stein, M. Friedman & C. Blanco (Eds.), *Post-traumatic stress disorder* (pp. 49-74). Wiley & Blackwell. https://doi.org/10.1002/9781119998471.ch2

Blue H.E.L.P. (n.d.). *The numbers*. https://bluehelp.org/the-numbers/

Boffa, J. W., Stanley, I. H., Hom, M. A., Norr, A. M., Joiner, T. E., & Schmidt, N. B. (2016). PTSD symptoms and suicidal thoughts and behaviors among firefighters. *Journal of Psychiatric Research*, *84*(1), 277-283. https://doi.org/10.1016/j.jpsychires.2016.10.014

Bonfils, K. A., Lysaker, P. H., Yanos, P. T., Sigel, A. Leonhardt, B. L., James, A. V., Brustuen, B., Luedtke, B., & Davis, L. W. (2018). Self-stigma in PTSD: Prevalence and correlates. *Psychiatry Research, 265*(1), 7-12. https://doi.org/10.1016/j.psychres.2018.04.004

Boss, P., Bryant, C. M., & Mancini, J. A. (2017). *Family stress management: A contextual approach* (3rd ed.). Sage.

Bowen, M. (1978). *Family therapy in clinical practice.* Rowman and Littlefield Publishers, Inc.

Bowen, M. (2013). *The origins of family psychotherapy: The NIMH family study project* (J. F. Butler, Ed.). Rowman & Littlefield Publishers.

Bowen Center for the Study of the Family. (2020). *Eight concepts.* The Bowen Center. https://thebowencenter.org/theory/eight-concepts/

Bradbury, T. N., Fincham, F. D., & Beach S. R. H. (2000). Research on the nature and determinants of marital satisfaction: A decade in review. *Journal of Marriage and Family, 62*(4), 964-980. https://doi.org/10.1111/j.1741-3737.2000.00964.x

Brancati, G. E., Barbuti, M., Pallucchini, A., Cotugno, B., Schiavi, E., Hantouche, E. G., & Perugi, G. (2019). Reactivity, intensity, polarity and stability questionnaire (RIPoSt-40) assessing emotional dysregulation: Development, reliability and validity. *Journal of Affective Disorders, 257*(1), 187-194. https://doi.org/10.1016/j.jad.2019.07.028

Brancu, M., Thompson, N. L., Beckham, J. C., Green, K. T., Calhoun, P. S., Elbogen, E. B., Robbins, A. T., Fairbank, J. A., & Wagner, H. R. (2014). The impact of social support on psychological distress for U. S. Afghanistan/Iraq era veterans with PTSD and other psychiatric diagnoses. *Psychiatry Research, 217*(1), 86-92. https://doi.org/10.1016/j.psychres.2014.02.025

Breslau, J., Aguilar-Gaxiola, S., Kendler, K. S., Su, M., Williams, D., & Kessler, R. C. (2006). Specifying race-ethnic differences in risk for psychiatric disorder in a USA national sample. *Psychological Medicine*, *3*(1), 57-68. https://doi:org/10.1017/S0033291705006161

Brewin, D. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, *68*(1), 748-766. https://doi.org/10.1037/0022-006X.68.5.748

Broderick, C. B. (1993). *Understanding family process: Basics of family systems*. Sage.

Brunet, A., Weiss, D. S., Metzler, T. J., Best, S. R., Rogers, C., Fagan, J., & Marmar, C. R. (2001). The peritraumatic distress inventory: A proposed measure of PTSD criterion. *American Journal of Psychiatry*, *158*(9), 1480-1485. https://doi.org/10.1176/appi.ajp.158.9.1480

Campbell, S. B., & Renshaw, K. D. (2018). Posttraumatic stress disorder and relationship functioning: A comprehensive review and organizational framework. *Clinical Psychology Review*, *65*(1), 152-162. https://doi.org/10.1016/j.cpr.2018.08.003

Capuzzi, D., & Stauffer, M. D. (2015). *Foundations of couples, marriage, and family counseling*. Wiley.

Carey, M. G., Al-Zaiti, S. S., Dean, G. E., Sessanna, L., & Finnell, D. S. (2011). Sleep problems, depression, substance use, social bonding, and quality of life in professional firefighters. *Journal of Occupational and Environmental Medicine*, *53*(1), 928-933. https://doi.org/10.1097/JOM.0b013e318225898f

Carrico, C. (2012). *A look inside firefighter families: A qualitative study* (Publication No. 3523418) [Doctoral dissertation, University of Northern Colorado]. ProQuest Dissertations and Theses Global.

Chu, C., Buchman-Schmitt, J. M., Hom, M. A., Stanley, I. H., & Joiner, T. E. (2016). A test of the interpersonal theory of suicide in a large sample of current firefighters. *Psychiatry Research*, *240*(1), 26-33. https://doi.org/10.1016/j.psychres.2016.03.041

Cioruta, B., & Coman, M. (2019). From classical systems thinking to modern dynamic systems theory: Beyond the definitions and conceptual delimitations. *Hidrualica*, *3*(1), 76-85. https://ezp.twu.edu/login?url=https://www-proquest-com.ezp.twu.edu/docview/2301890253?accountid=7102

Clapp, J. D., & Beck, G. J. (2009). Understanding the relationship between PTSD and social support: The role of negative network orientation. *Behavior, Research, and Therapy*, *47*(3), 237-244. https://doi.org/10.1016/j.brat.2008.12.006

Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. M. (1985). Measuring the functional components of social support. In I. G. Sarason & B. R. Sarason (Eds.), *Social Support: Theory Research and Applications*, (pp. 73-94). Springer. https://doi.org/10.1007/978-94-009-5115-0_5

Constans, J. I., Vasterling, J. J., Deitch, E., Han, X., Tharp, A. L., Davis, T. D., & Greer, S. (2012). Pre-Katrina mental illness, post disaster negative cognitions and PTSD symptoms in male veterans following hurricane Katrina. *Psychological Trauma: Theory, Research, Practice, and Policy*, *4*(6), 568-577. https://doi.org/10.1037/a0027487

Cook, S. C., Schwartz, A. C., & Kaslow, N. J. (2017). Evidenced-based psychotherapy: Advantages and challenges. *Neurotherapeutics, 14*(3), 537-545. https://doi.org/0.1007/s13311-017-0549-4

Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology, 54*(4), 454-460. https://doi.org/10.1037/0022-006X.54.4.454

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage.

Creswell, J. W. (2016). *30 essential skills for the qualitative researcher.* Sage.

Creswell, J. W., & Plano Clark, V.L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Sage.

Curran, S. F., Holt, E. O., & Afanador, J. H. (2017). Transition and reintegration of military personnel to law enforcement careers. In C. L. Mitchell & E. H. Dorian (Eds.). *Police psychology and its growing impact on modern law enforcement* (pp. 158-175). IGI Global. https://doi.org/10.4018/978-1-5225-0813-7.ch008

Demaray, M. K., & Malecki, C. K. (2002). Critical levels of perceived social support associated with student adjustment. *School Psychology Quarterly, 17*(3), 213-241. https://doi.org/10.1521/scpq.17.3.213.20883

Darves-Bornoz, J. M., Alonso, J., Girolamo, G., Graff, R., Haro, J. M., Kovess-Masfety, V., Lepine, J. P., Nachbaur, G., Negre-Pages, L., Vilagut, G., & Gasquet, I. (2008). Main traumatic events in Europe: PTSD in the European study of the epidemiology of mental disorders survey. *Journal of Traumatic Stress, 21*(5), 455-462. https://doi.org/10.1002/jts.20357

De Vries, G. J., & Olff, M. (2009). The lifetime prevalence of traumatic events and posttraumatic stress disorder in the Netherlands. *Journal of Traumatic Stress*, *22*(4), 259-267. https://doi.org/10.1002/jts.20429

DiGangi, J. A., Gomez, Mendoza, L., Jason, L. A., Keys, C. B., & Koenen, K. C. (2013). Pretrauma risk factors for posttraumatic stress disorder: A systematic review of the literature. *Clinical Psychology Review*, *33*(1), 728-744. https://doi.org/10.1016/j.cpr.2013.05.002

Dirkzwager, A. J., Bramsen, I., Ader, H., & van der Ploeg, H. M. (2005). Secondary traumatization in partners and parents of Dutch peacekeeping soldiers. *Journal of Family Psychology*, *19*(1), 217-226. https://doi.org/10.1037/0893-3200.19.2.217

Dixon, S. S. (2021). Law enforcement suicide: The depth of the problem and best practices for suicide prevention. *Aggression and Violent Behavior*, *61*(4), 101649. https://doi.org/10.1016/j.avb.2021.101649

Erbes, C. R., Meis, L. A., Polusny, M. A., Compton, J. S., & Wadsworth, S. M. (2012). An examination of PTSD symptoms and relationship functioning in U.S. soldiers of the Iraq war over time. *Journal of Traumatic Stress*, *25*(1), 187-190. https://doi.org/10.1002/jts.21689

Farnsworth, J. K., & Sewell, K. W. (2011). Fear of emotion as a moderator between PTSD and firefighter social interactions. *Journal of Traumatic Stress, 24*(4), 444-450. https://doi.org/10.1002/jts.20657

Figley, C. R. (Ed.). (1986). Traumatic stress: The role of the family and its social support systems. *Trauma and its wake: Traumatic stress, theory, research and intervention* (Vol. 2). Routledge. https://doi.org/10.4324/9781315803869

Flory, J. D., & Yehuda, R. (2015). Comorbidity between post-traumatic stress disorder and major depressive disorder: Alternative explanations and treatment considerations. *Dialogues in Clinical Neuroscience*, *17*(2), 141-150. https://doi.org/0.31887/DCNS.2015.17.2/jflory

Frans, O., Rimmo, P. A., Aberg, L. & Fredrikson, M. (2005). Trauma exposure and post-traumatic stress disorder in the general population. *Acta Psychiatica Scandinavica*, *111*(4), 151-158. https://doi.org/10.1111/j.1600-0447.2004.00463.x

Fredette, C., Rizkallah, E., El-Baalbaki, G., Palardy, V., & Guay, S. (2020). A qualitative analysis of the quality of social and marital support for PTSD victims. *European Journal of Trauma and Dissociation*, *4*(2), 100134. https://doi.org/10.1016/j.ejtd.2019.100134

Galatzer-Levy, I. R., Nickerson, A., Litz, B. T., & Marmar, C. R. (2013). Patterns of lifetime PTSD comorbidity: A latent class analysis. *Depression and Anxiety*, *30*(5), 489-496. https://doi.org/10.1002/da.22048

Gerlock, A. A., Grimesey, J., & Sayre, G. (2014). Military-related posttraumatic stress disorder and intimate relationship behaviors: A developing dyadic relationship model. *Journal of Marital and Family Therapy*, *40*(3), 344-356. https://doi.org/10.1111/jmft.12017

Ghazali, S. R., & Chen, Y. Y. (2018). Reliability, concurrent validity, and cutoff score of PTSD Checklist (PCL-5) for the diagnostic and statistical manual of mental disorders, fifth edition among Malaysian adolescents. *Traumatology*, *24*(4), 280-287. https://doi.org/10.1037/trm0000156

Gil, S., & Caspi, Y. (2006). Personality traits, coping style, and perceived threat as predictors of posttraumatic stress disorder after exposure to a terrorist attack: A prospective study.

Psychosomatic Medicine, *658*(6), 904-909. https://doi.org/10.1097/01.psy.0000242124.21796.f8

Goff, B. S., & Smith, D. B. (2005). Systemic traumatic stress: The couple adaptation to traumatic stress model. *Journal of Marital and Family Therapy*, *32*(2), 145-157. https://doi.org/10.1111/j.1752-0606.2005.tb01552.x

Goldstein, A. J., & Chambless, D. L. (1978). A reanalysis of agoraphobia. *Behavior Therapy*, *9*(1), 47-59. https://doi.org/10.1016/S0005-7894(78)80053-7

Gottman, J. M., & Levenson, R. W. (2000). The timing of divorce: Predicting when a couple will divorce over a 14-year period. *Journal of Marriage and Family Therapy*, *62*(1), 737-745. https://doi.org/10.1111/j.1741-3737.2000.00737.x

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41-45. https://doi.org/10.1023/B:JOBA.0000007455.08539.94

Guay, S., Billette, V., & Merchand, A. (2006). Exploring the links between posttraumatic stress disorder and social support: Process and potential research avenues. *Journal of Traumatic Stress*, *19*(3), 327-328. https://doi.org/10.1002/jts.20124

Haddock, C. K., Jahnke, S. A., Poston, W. S. C., Jitnarin, N., Kaipust, C. M., Tuley, B., & Hyder, M. L. (2012). Alcohol use among firefighters in the central United States. *Occupational Medicine*, *62*(1), 661-664. https://doi.org/10.1093/occmed/kqs162

Hall, J. C., Jobson, L., & Landon, P. E. (2014). Measuring symptoms of post-traumatic stress disorder: The development and psychometric properties of the posttraumatic stress

disorder check list. *British Journal of Clinical Psychology*, *53*(1), 315-322. https://doi.org/10.1111/bjc.12048

Hanson, B. G. (1995). *General systems theory beginning with the wholes.* Taylor and Francis Group. https://doi.org/10.4324/9781315800783

Haslam, C., & Mallon, K. (2003). A preliminary investigation of post-traumatic stress symptoms among firefighters. *Work and Stress, 17*(3), 277-285. https://doi.org/ 10.1080/02678370310001625649

Haugen, P. T., Evces, M., & Weiss, D. S. (2012). Treating posttraumatic stress disorder in first responders: A systemic review. *Clinical Psychology Review, 32*(1), 370-380. https://doi.org/0.1016/j.cpr.2012.04.001

Haugen, P. T., McCrillis, A. M., Smid, G. E., & Nijdam, M. J. (2017). Mental health stigma and barriers to mental health care for first responders: A systematic review and meta-analysis. *Journal of Psychiatric Research, 94*(1), 218-229. https://doi.org/10.1016/j.jpsychires.2017.08.001

Heitman, S. C. (2016). *Suicide in the fire service: Saving the lives of firefighters* [Unpublished doctoral dissertation]. Monterey Naval Postgraduate School.

Henderson, S. N., Van Hasselt, V. B., LeDuc, T. J. & Couwels, J. (2016). Firefighter suicide: Understanding cultural challenges for mental health professionals. *Professional Psychology: Research and Practice*, *47*(3), 224-230. https://doi.org/10.1037/pro0000072

Henry, S. B., Smith, D. B., Archuleta, K. L., Sanders-Hahs, E., Nelson Goff, B. S., Reisbig, A. M. J., Schwerdtfeger, K. L., Bole, A., Hayes, E., Hoheisel, C. B., Nye, B., Osby-Williams, J., & Scheer, T. (2011). Trauma and couples: Mechanisms in dyadic

functioning. *Journal of Marital and Family Therapy*, *37*(3), 319-332. https://doi.org/10.1111/j.1752-0606.2010.00203.x

Heyman, M., Dill, J., & Douglas, R. (2018). *The ruderman white paper on mental health and suicide of first responders* [White paper]. Ruderman Family Foundation. http://dir.nv.gov/uploadedFiles/dirnvgov/content/WCS/TrainingDocs/First%20Responder%20White%20Paper_Final%20(2).pdf.

Hibberts, M., Johnson, R. B., & Hudson, K. (2012). Common survey sampling techniques. In L. Gideon (Ed.), *Handbook of survey methodology for the social sciences* (pp. 53-74). Springer. https://doi.org/10.1007/978-1-4614-3876-2_5

Hiskey, S., Syres, R., Andres, L., & Troop, N. (2015). Support for the location of negative posttraumatic cognitions in the diagnosis of posttraumatic stress disorder. *Personality and Individual Differences*, *74*(1), 192-195. https://doi.org/10.1016/j.paid.2014.10.021

Hodgins, G. A., Cramer, M., & Bell, R. (2001). Risk factors for posttrauma reactions in police officers: A longitudinal study. *Journal of Nervous and Mental Disease*, *189*(8), 541-547. https://doi.org/10.1097/00005053-200108000-00007

House, J. S., (1985). Work stress and social support. In W. D. Gentry, H. Benson, & C. J. Wolff (Eds.), *Behavioral medicine: Work, stress and health* (pp. 157-180). Springer. https://doi.org/10.1007/978-94-009-5179-2_8

Huynh, J. Y., Xanthopoulou, D., & Winfield, A. H. (2013). Social support moderates the impact of demands on burnout and organizational connectedness: A two wave study of volunteer firefighters. *Journal of Occupational Health Psychology*, *18*(1), 9-15. https://doi.org/10.1037/a0030804

Joseph, S., Williams, R., & Yule, W. (2000). Understanding posttraumatic stress: A psychosocial perspective on PTSD and treatment. *Behavioural and Cognitive Psychotherapy, 28*(3), 315-316. https://doi.org/10.1017/S1352465800213131

Kehl, D., Knuth, D., Hulse, L., & Schmidt, S. (2014). Posttraumatic reactions among firefighters after critical incidents: Cross-national data. *Journal of Aggression, Maltreatment & Trauma*, *23*(1), 842-853. https://doi.org/10.1080/10926771.2014.938143

Kerr, M. E., & Bowen, M. (1988). *Family evaluation*. W. W. Norton & Company.

Kessler, R. C., Chin, W. T., Demler, O., Merikangas, K. R., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry*, *62*(1), 617-627. https://doi.org/10.1001/archpsyc.62.6.617

Khan, A. M., Dar, S., Ahmed, R., Bachu, R., Adnan, M., & Kotapati, V. P. (2018). Cognitive behavioral therapy versus eye movement desensitization and reprocessing in patients with post-traumatic stress disorder: Systematic review and meta-analysis of randomized clinical trials. *Cureus, 10*(9). https://doi.org/10.7759/cureus.3250

Kimbrel, A., Steffen, L. E., Meyer, E. C., Kruse, M. I., Knight, J. A., Zimering, R. T., & Gulliver, S. B. (2011). A revised measure of occupational stress for firefighters: Psychometric properties and relationship to posttraumatic stress disorder, depression, and substance abuse. *Psychological Services*, *8*(4), 294-306. https://doi.org/10.1037/a0025845

Kleim, B., Grey, N., Wild, J., Nussbeck, F. W., Stott, R., Hackmann, A., Clark, D. M., & Ehlers, A. (2013). Cognitive change predicts symptom reduction with cognitive therapy for

posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, *81*(1), 383-393. https://doi.org/0.1037/a0031290

Kohler, M., Shafer, H., Goebel, S., & Pedersen, A. (2018). The role of disclosure attitudes in the relationship between posttraumatic stress disorder symptom severity and perceived social support among emergency service workers. *Psychiatry Research*, *270*(1), 602-610. https://doi.org/10.1016/j.psychres.2018.10.049

Komarovskaya, I., Brown, A. D., Galatzer-Levy, I. R., Madan, A., Henn-Haase, C., Teater, J., Clarke, B. H., Marmar, C. R., & Chemtob, C. M. (2014). Early physical victimization is a risk factor for posttraumatic stress disorder symptoms among Mississippi police and firefighter first responders to hurricane Katrina. *Psychological Trauma: Theory, Research, Practice, and Policy*, *6*(1), 92-96. https://doi.org/10.1037/a0031600

Laffaye, C., Cavella, S., Drescher, K., & Rosen, C. (2008). Relationships among PTSD symptoms, social support and support source in veterans with chronic PTSD. *Journal of Traumatic Stress*, *21*(4), 394-401. https://doi.org/10.1002/jts.20348

Lambert, J. E., Engh, R., Hasbun, A., & Holzer, J. (2012). Impact of posttraumatic stress disorder on the relationship quality and psychological distress of intimate partners: A meta-analytic review. *Journal of Family Psychology*, *26*(5), 729-737. https://doi.org/10.1037/a0029341

Laurenceau, J. P., Troy, A. B., & Carver, C. S. (2005). Two distinct emotional experiences in romantic relationships: Effects of perceptions regarding approach of intimacy and avoidance of conflict. *Personality and Social Psychology Bulletin*, *31*(1), 1123-1133. https://doi.org/10.1177/0146167205274447

Lehrner, A., & Yehunda, R. (2018). Trauma across generations and paths to adaptation and resilience. *Psychological Trauma: Theory, Practice, and Policy*, *10*(1), 22-29. https://doi.org/10.1037/tra0000302

Lepore, S. J. (2001). A social-cognitive processing model of emotional adjustment to cancer. In A. Bum & B. L. Andersen (Eds.), *Psychosocial interventions for cancer* (pp. 99-116). American Psychological Association. https://doi.org/10.1037/10402-006

Levin, Y., Greene, T., & Solomon, Z. (2016). PTSD symptoms and marital adjustment among ex-POWs wives. *Journal of Family Psychology*, *30*(1), 72-81. https://doi.org/10.1080/15325024.2014.885270

Lewis, G. B., & Pathak, R. (2014). The employment of veterans in state and local government service. *State and Local Government Review, 46*(2), 91-105. https://doi.org/10.1177/0160323X14537835

Lilly, M. M., Pole, N., Best, S. R., Metzler, T., & Marmar, C. R. (2009). Gender and PTSD: What can we learn from female police officers. *Journal of Anxiety Disorders*, *23*(1), 767-774. https://doi.org/10.1016/j.janxdis.2009.02.015

Lipsky, S., Kernic, M. A., Qiu, Q., & Hasin, D. S. (2015). Traumatic events associated with posttraumatic stress disorder: The role of race/ethnicity and depression. *Violence Against Women, 22*(9), 1055-1074. https://doi.org/10.1177/1077801215617553

Lucero, R., Jones, A. C., & Hunsaker, J. C. (2018). Using internal family systems theory in the treatment of combat veterans with post-traumatic stress disorder and their families. *Contemporary Family Therapy, 40*(1), 266-275. https://doi.org/10.1007/s10591-017-9424-z

MacKay, L. (2012). Trauma and Bowen family systems theory: Working with adults who were abused as children. *The Australian and New Zealand Journal of Family Therapy*, *33*(3), 232-241. https://doi.org/10.1017/aft.2012.28

Maercker, A., & Horn, A. B. (2012). A socio-interpersonal perspective on PTSD: The case for environments and interpersonal processes. *Clinical Psychology and Psychotherapy*, *20*(6), 465-481. https://doi.org/10.1002/cpp.1805

Maercker, A., & Hecker, T. (2016). Broadening perspectives on trauma and recovery: A socio-interpersonal view of PTSD. *European Journal of Psychotraumatology*, *7*(1). https://doi.org/10.3402/ejpt.v7.29303

Marmar, C. R., Weiss, D. S., Metzler, T. J., & Metzler, D. (1996). Characteristics of emergency services personnel related to peritraumatic dissociation during critical incident exposure. *American Journal of Psychiatry*, *153*(1), 94-102. https://doi.org/10.1176/ajp.153.7.94

Marmar, C. R., McCaslin, S. E., Metzler, T. J., Best, S., Weiss, D. S., Fagan, J., Liberman, A., Pole, N., Otte, C., Yehuda, R., Mohr, D., & Neylan, T. (2006). Predictors of posttraumatic stress in police and other first responders. *Annals New York Academy of Sciences*, *1071*(1), 1-18. https://doi.org/10.1196/annals.1364.001

Marshall, C., & Rossman, G. B. (2011). *Designing qualitative research* (5th ed.). Sage.

Marshall, E. M., & Kuijer, R. G. (2017). Weathering the storm? The impact of trauma on romantic relationships. *Current Opinions in Psychology*, *13*(1), 54-59. https://doi.org/10.1016/j.copsyc.2016.04.013

Martin, C. E., Tran, J. K., & Buser, S. J. (2017). Correlates of suicidality in firefighter/EMS personnel. *Journal of Affective Disorders*, *208*(1), 177-183. https://doi.org/10.1016/j.jad.2016.08.078

Mash, H., Fullerton, C., Ramsawhm H., Ng, T., Wang, L., Kessler, R., & Ursano, R. (2014). Risk for suicidal behaviors associated with alcohol and energy drink use in the US Army. *Social Psychiatry and Psychiatric Epidemiology*, *49*(1), 1379-1387. https://doi.org/10.1007/s00127-014-0886-0

Mat Salleh, M. N., Ismail, H, ., & Yusoff, H. M. (2020). Reliability and validity of a post traumatic checklist-5 (PCL-5) among fire and rescue officers in Selangor, Malaysia. *Journal of Health Research*, *35*(4), 379-387. https://doi.org/10.1108/JHR-11-2019-0243

McDonald, S. D., & Calhoun, P. S. (2010). The diagnostic accuracy of the PTSD checklist: A critical review. *Clinical Psychology Review, 30*(8), 976-987. https://doi.org/10.1016/j.cpr.2010.06.012

McFarlane, A. C. (2000). Posttraumatic stress disorder: A model of the longitudinal course and the role of risk factors. *Journal of Clinical Psychiatry*, *61*(5), 15-20.

Meyer, E. C., Zimering, R., Daly, E., Knight, J., & Kamholz, B. W. (2012). Predictors of posttraumatic stress disorder and other psychological symptoms in trauma-exposed firefighters. *Psychological Services*, *9*(1), 1-15. https://doi.org/10.1037/a0026414

Milligan-Saville, J., Choi, I., Deady, M., Scott, P., Tan, L., Calvo, R. A., Bryant, R. A., Glozier, N., & Harvey, S. B. (2018) The impact of trauma exposure on the development of PTSD and psychological distress in a volunteer fire service. *Psychiatry Research, 270*, 1110-1115. https://doi.org/10.1016/j.psychres.2018.06.058

Mitani, S., Masatoshi, F., Nakata, K., & Shirakawa, T. (2006). Impact of post-traumatic stress disorder and job-related stress on burnout: A study of fire service workers. *Journal of Emergency Medicine, 31*(1), 7-11. https://doi.org/10.1016/j.jemermed.2005.08.008

Monson, C. M., Friedman, M. J., & La Bash, H. A. J. (2007). A psychological history of PTSD. In M. J. Friedman, T. M. Keane, & P. A. Resick (Eds.), *Handbook of PTSD: Science and practice* (pp. 37-52). The Guilford Press.

Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, *40*(2), 120-123. https://pubmed.ncbi.nlm.nih.gov/2003072/

Mueller, J., Moergeli, H., & Maercker, A. (2008). Disclosure and social acknowledgment as predictors of recovery from posttraumatic stress: A longitudinal study in crime victims. *Canadian Journal of Psychiatry*, *53*(3), 160-168. https://doi.org/10.1177/070674370805300306

National Fallen Firefighters Foundation. (2014). *Confronting suicide in the fire service: Strategies for intervention and prevention*. https://www.everyonegoeshome.com/wp-content/uploads/sites/2/2015/02/Confronting_Suicide_FINAL.pdf

National Fire Protection Association. (2021, December). *U.S. fire department profile 2019*. https://www.nfpa.org/-/media/files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008). Suicide and suicidal behavior. *Epidemiology, 30*(1), 133-154. https://doi.org/10.1093/epirev/mxn002

Ohye, B. Y., Brendel, R. W., Allard, M. D., Pentel, K. Z., & Simon, N. M. (2015). Three-generation model: A family systems framework for the assessment and treatment of veterans with posttraumatic stress disorder and related conditions. *Professional Psychology: Research and Practice*, *46*(2), 97-106. https://doi.org/0.1037/a0037735

Olff, M., & Zuiden, M. (2017). Neuroendocrine and neuroimmune markers in PTSD: Pre-, peri- and post-trauma glucocorticoid and inflammatory dysregulation. *Current Opinion in Psychology*, *14*(1), 132-137. https://doi.org/10.1016/j.copsyc.2017.01.001

O'Neill, L., Faser, T., Kitchenham, A., & McDonald, V. (2018). Hidden burdens: A review of intergenerational, historical, and complex trauma, implications for indigenous families. *Journal of Child and Adolescent Trauma*, *11*(2), 173-186. https://doi.org/10.1007/s40653-016-0117-9

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weis, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, *129*(1), 52-73. https://doi.org/10.1037/0033-2909.129.1.52

Panagioti, M., Gooding, P. A., Taylor, P. J., & Tarrier, N. (2014). Perceived social support buffers the impact of PTSD symptoms on suicidal behavior: Implications into suicide resilience research. *Comprehensive Psychiatry*, *55*(1), 104-112. https://doi.org/10.1016/j.comppsych.2013.06.004

Papero, D. V. (2017). Trauma in the family: A systems-oriented approach. *Australian and New Zealand Journal of Family Therapy*, *38*(1), 582-594. https://doi.org/10.1002/anzf.1269

Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology*, *66*(1), 219-230. https://doi.org/10.1037//0022-006x.66.2.219

Patrick, S., Sells, J. N., Giordano, F. G., & Tollerud, T. R. (2007). Intimacy, differentiation, and personality variables as predictors of marital satisfaction. *The Family Journal: Counseling and Therapy for Couples and Families*, *15*(4), 359-367. https://doi.org/10.1177/1066480707303754

Paulus, D. J., Vujanovic, A. A., Schuhmann, B. B., Smith, L. J., & Tran, J. (2017). Main and interactive effects of depression and posttraumatic stress in relation to alcohol dependence among urban male firefighters. *Psychiatry Research*, *251*(1), 69-75. https://doi.org/10.1016/j.psychres.2017.02.011

Perkonigg, A., Kessler, R. C., Storz, S., & Wittchen, H. U. (2000). Traumatic events and post-traumatic stress disorder in the community: Prevalence, risk factors and comorbidity. *Acta Psychiatrica Scandinavica*, *101*(1), 46-59. https://doi.org/10.1034/j.1600-0447.2000.101001046.x

Petrie, K., Milligan-Saville, J., Gayed, A., Deady, M., Phelps, A., Dell, L., Forbes, D., Bryant, R. A., Calvo, R. A., Glozier, N., & Harvey, S. B. (2018). Prevalence of PTSD and common mental disorders amongst ambulance personnel: A systematic review and meta-analysis. *Social Psychiatry and Psychiatric Epidemiology*, *53*(1), 897-909. https://doi.org/10.1007/s00127-018-1539-5

Pietrzak, R. H., Goldstein, M. B., Malley, J. C., Rivers, A. J., & Southwick, S. M. (2010). Structure of posttraumatic stress disorder symptoms and psychological functioning in veterans of Operation Enduring Freedom and Iraqi Freedom. *Psychiatry Research*, *178*(1), 323-329. https://doi.org/10.1016/j.psychres.2010.04.039

Pietrzak, R. H., Johnson, D. C., Goldstein, M. B., Malley, J. C., Rivers, A. J., Morgan, C. A., & Southwick, S. M. (2010). Psychosocial buffers of traumatic stress, depressive symptoms, and psychosocial difficulties in veterans of operations enduring freedom and Iraqi freedom: The role of resilience, unit support, and post-deployment social support. *Journal of Affective Disorders*, *120*(1), 188-192. https://doi.org/10.1016/j.jad.2009.04.015

Pompili, M., Mancinelli, I., & Tatarelli, R. (2018). Stigma as a cause of suicide. *The British Journal of Psychiatry, 183*(2), 173-174. https://doi.org/10.1192/S0007125000162774

Ponder, W. N., & Aguirre, R. T. (2012). War related trauma: Increasing the American GI's resilience through marriage. *Advances in Social Work, 13*(1), 203-215. https://doi.org/10.18060/1882

Porges, S. W. (2011). *The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation.* W. W. Norton & Company.

Rasmusson, A. M., & Shalev, A. Y. (2014). Integrating the neuroendocrinology, neurochemistry, and neuroimmunology of PTSD to date and the challenges ahead. In M. J. Friedman, T. M. Keane, & P.A. Resick (Eds.), *Handbook of PTSD: Science and practice* (pp. 275-299). The Guilford Press.

Regambal, M. J., Alden, L. E., Wagner, S. L., Harder, H. G., Koch, W. J., Fung, K., & Parsons, C. (2015). Characteristics of the traumatic stressors experienced by rural first responders. *Journal of Anxiety Disorders, 34*(1), 86-93. https://doi.org/10.1016/j.janxdis.2015.06.006

Reghr, C., Hill, J., Goldberg, G., & Hughes, J. (2003). Postmortem inquiries and trauma responses in paramedics and firefighters. *Journal of Interpersonal Violence, 18*(1), 607-622. https://doi.org/10.1177/0886260503251131

Resick, P. A. (2001). *Stress and Trauma.* Psychology Press.

Robinaugh, D. J., Marques, L., Traeger, L. N., Marks, E. H., Sung, S. C., Beck, J. G., Pollack, M. H., & Simon, N. M. (2011). Understanding the relationship of perceived social support to post-trauma cognitions and posttraumatic stress disorder. *Journal of Anxiety Disorders, 25*(8), 1072-1078. https://doi.org/10.1016/j.janxdis.2011.07.004

Roemer, L., Litz, B. T., Orsillo, S. M., & Wagner, A. W. (2001). A preliminary investigation of the role of strategic withholding of emotions in PTSD. *Journal of Traumatic Stress, 14*(1), 149-156. https://doi.org/10.1023/A:1007895817502

Rosenman, S. (2002). Trauma and posttraumatic stress disorder in Australia: Findings in the population sample of the Australian national survey of mental health and wellbeing. *Australian and New Zealand Journal of Psychiatry, 21*(1), 1-19. https://doi.org/10.1046/j.1440-1614.2002.01039.x

Rostami, A., Ghaxinour, M., & Richter, J. (2013). Marital satisfaction: The differential impact of social support dependent on situation and gender in medical staff in Iran. *Global Journal of Health Science, 5*(4), 151-164. http://doi.org/10.5539/gjhs.v5n4p151

Royle, L., Keenan, P., & Farrell, D. (2009). Issues of stigma for first responders accessing support for post traumatic stress. *Internal Journal of Emergency Mental Health, 11*(2), 79-85. https://pubmed.ncbi.nlm.nih.gov/19927494/

Rutherford, A. (2006). Self-selected samples. *Encyclopedia of statistical sciences*. John Wiley and Sons. https://doi.org/10.1002/0471667196.ess5080.pub2

Salters-Pedneault, K., Gentes, E., & Toemer, L. (2007). The role of fear of emotion in distress, arousal, and cognitive interference following an emotional stimulus. *Cognitive Behavioral Therapy, 36*(1), 12-22. https://doi.org/10.1080/16506070600874281

Saldaña, J. (2009). *The coding manual for qualitative researchers.* Sage.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology, 44*(1), 127-139. https://doi.org/10.1037/0022-3514.44.1.127

Sarason, I. G., Sarason, B. R., Shearin, E. N., Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, *4*(1), 497-510. https://doi.org/10.1177/0265407587044007

Sautter, F. J., Glynn, C. M., Thompson, K. E., Franklin, L., & Han, X. (2009). A couple-based approach to the reduction of PTSD avoidance symptoms: Preliminary findings. *Journal of Marital and Family Therapy*, *35*(3), 343-349. https://doi.org/10.1111/j.1752-0606.2009.00125.x

Schumm, W. R., Crock, R. J., Likcani, A., Akagi, C. G., & Bosch, K. R. (2008). Reliability and validity of the Kansas marital satisfaction scale with different response formats in a recent sample of U.S. Army personnel. *Individual Differences Research*, *6*(1), 26-37.

Schumm, W. R., Nichols, C. W., Schectman, K. L., & Grigsby, C. C. (1983). Characteristics of responses to the Kansas Marital Satisfaction Scale by a sample of 84 married mothers. *Psychological Reports*, *53*(2), 567–572. https://doi.org/10.2466/pr0.1983.53.2.567

Schumm, W. R., Paff-Bergen, L. A., Hatch, R. C., Obiorah, F. C., Copeland, J. M., Meens, L. D., & Bugaighis, M. A. (1986). Concurrent and discriminant validity of the Kansas marital satisfaction scale. *Journal of Marriage and the Family*, *48*(2), 381-387. https://doi.org/10.2307/352405

Schwarzer, R., & Leppin, A. (1991). Social support and health: A theoretical and empirical overview. *Journal of Social and Personal Relationships*, *8*(1), 99-127. https://doi.org/10.1177/0265407591081005

Shalev, A. Y., Peri, T., Canetti, L., & Schreiber, S. (1996). Predictors of PTSD in injured trauma survivors: A prospective study. *American Journal of Psychiatriy*, *132*(2), 219-225. https://doi.org/10.1176/ajp.153.2.219

Shnaider, P., Wanklyn, S. G., Suvak, M. K., & Monson, C. M. (2017). The role of social support in cognitive-behavioral conjoint therapy for posttraumatic stress disorder. *Behavior Therapy*, *48*(1), 285-294. https://doi.org/10.1016/j.beth.2016.05.003

Shira, A., Palgi, Y., Ben-Ezra, M., & Shmotkin, D. (2011). Transgenerational effects of trauma in midlife: Evidence for resilience and vulnerability in offspring of Holocaust survivors. *Psychological Trauma: Theory, Research, Practice, and Policy*, *3*(1), 394-402. https://doi.org/10.1037/a0020608

Shirom, A. (2011). Job-related burnout: A review of major research foci and challenges. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 223-241). American Psychological Association.

Shnaider, P., Sijercic, I., Wanklyn, S. G., Suvak, M. K., & Monson, C. M. (2017). Role of social support in cognitive-behavioral conjoint therapy for posttraumatic stress disorder. *Behavior Therapy, 48*(1), 285-294. https://doi.org/10.1016/j.beth.2016.05.003

Skowron, E. A., (2000). The role of differentiation of self in marital adjustment. *Journal of Counseling Psychology*, *47*(2), 229-237. https://doi.org/10.1037/0022-0167.47.2.229

Smid, G. E., Klever, R. J., Radenmaker, A. R., Zuiden, M., & Van der Vermetten, E. (2013). The role of stress sensitization in progression of posttraumatic distress following deployment. *Social Psychology and Psychiatric Epidemiology*, *48*(11), 1743-1754. https://doi.org/10.1007/s00127-013-0709-8

Smid, G. E., Van der Velden, P. G., Lensvelt-Mulders, G. J. L. M., Knipscheer, J. W., Gersons, B. P. R., & Kleber, R. J. (2012). Stress sensitization following a disaster: A prospective study. *Psychological Medicine*, *42*(8), 1675-1686. https://doi.org/10.1017/S0033291711002765

Smith, D, A., Vivian, D., & O'Leary, K. D. (1990). Longitudinal prediction of marital discord from premarital expressions of affect. *Journal of Consulting and Clinical Psychology*, *58*(1), 790-798. https://doi.org/10.1037/0022-006X.58.6.790

Smith, T. D., Hughes, K., DeJoy, D. M., & Dyal, M. A. (2018). Assessment of relationships between work stress, work-family conflict, burnout and firefighter safety behavior outcomes. *Safety Science, 103*(1), 287-292. https://doi.org/10.1016/j.ssci.2017.12.005

Stanley, I. H., Boffa, J. W., Hom, M. A., Kimbrel, N. A., & Joiner, T. E. (2017). Differences in psychiatric symptoms and barriers to mental health care between volunteer and career firefighters. *Psychiatry Research*, *247*(1), 236-242. https://doi.org/10.1016/j.psychres.2016.11.037

Stanley, I. H., Horn, M. A., Hagan, C. R., Joiner, T. E. (2015). Career prevalence and correlates of suicidal thoughts and behaviors among firefighters. *Journal of Affective Disorders*, *187*(1), 163-171. https://doi.org/10.1016/j.jad.2015.08.007

ten Brummelhuis, L. L., ter Hoeven, C. L., Bakker, A. B., & Peper, B. (2011). Breaking through the loss cycle of burnout: The role of motivation. *The Journal of Occupational and Organizational Psychology*, *34*(1), 268-287. https://doi.org/10.1111/j.2044-8325.2011.02019.x

Texas Government Title 6, Code Chapter 607. (n.d.). *Provisions generally applicable to public officers and employees*. https://statutes.capitol.texas.gov/Docs/GV/htm/GV.607.htm

U. S. Department of Labor, Bureau of Labor Statistics. (2020). *Occupational outlook handbook 2018-2019.* https://www.bls.gov/oes/2018/may/oes332011.htm

Van, A. M., Mancini, C., Patterson, B. & Boyle, M. H. (2008). Post-traumatic stress disorder in Canada. *CNS Neuroscience and Therapeutics, 14*(3), 171-181. https://doi.org/0.1111/j.1755-5949.2008.00049.x

Van Dam, D., Vedel, E., Ehring, T., & Emmelkamp, P.M. (2012). Psychological treatments for concurrent posttraumatic stress disorder and substance use disorder: A systematic review. *Clinical Psychology Review, 32*(3), 202-214. https://doi.org/10.1016/j.cpr.2012.01.004

Violanti, J. M., Robinson, C. F., & Shen, R. (2013). Law enforcement suicide: A national analysis. *Journal of Emergency Mental Health and Human Resilience, 15*(4), 289-298. https://pubmed.ncbi.nlm.nih.gov/24707591/

Weisenhorn, D. A., Frey, L. M., van de Veene, J., & Cerel, J. (2017). Suicide exposure and posttraumatic stress disorder: Is marriage a protective factor for veterans? *Journal of Child and Family Studies*, *26*(1), 161-167. https://doi.org/10.1007/s10826-016-0538-y

Wittchen, H. U., Gloster, A., Beesdo, K., Schonfeld, S., & Perkonigg, A. (2009). Posttraumatic stress disorder: diagnostic and epidemiological perspectives. *CNS Spectrums*, *14*(1), 5-12.

Woodward, M. J., Eddinger, J., Henschel, A. V., Dodson, T. S., Tran, H. N., & Beck, J. G. (2015). Social support, posttraumatic cognitions, and PTSD: The influence of family, friends, and a close other in an interpersonal and on-interpersonal trauma group. *Journal of Anxiety Disorders, 35*(1), 60-67. https://doi.org/10.1016/j.janxdis.2015.09.002

Wright, B. K., Kelsall, H. L., Sim, M. R., Clarke, D. M., & Creamer, M. C. (2013). Support mechanisms and vulnerabilities in relation to PTSD veterans of the Gulf war, Iraq war, and Afghanistan deployments: A systematic review. *Journal of Traumatic Stress, 26*(1), 310-318. https://doi.org/10.1002/jts.21809

Zang, Y., Gallagher, T., McLean, C. P., Tannahill, H. S., Yarvis, J. S., & Foa, E. B. (2017). The

impact of social support, unit cohesion, and trait resilience on PTSD in treatment-seeking military personnel with PTSD: The role of posttraumatic cognitions. *Journal of Psychiatric Research*, *86*(1), 18-25. https://doi.org/10.1016/j.jpsychires.2016.11.005

APPENDIX A

IRB APPROVAL LETTERS

Date: 1-7-2022

IRB #: IRB-FY2021-128
Title: Implications of Marital Relationship Quality as Measured by Interpersonal Spousal Support, Marital Satisfaction and PTSD Symptom Severity as Reported by Municipal Firefighters and Police Officers: An Online Mixed Methods Approach
Creation Date: 12-10-2020
End Date:
Status: Approved
Principal Investigator: Hillary Netterville
Review Board: TWU IRB - Denton
Sponsor:

Study History

Submission Type Initial	**Review Type** Exempt	**Decision** Exempt
Submission Type Modification	**Review Type** Exempt	**Decision** Approved

Key Study Contacts

Member Linda Ladd	**Role** Co-Principal Investigator	**Contact** lladd@twu.edu
Member Hillary Netterville	**Role** Principal Investigator	**Contact** hnetterville@twu.edu
Member Hillary Netterville	**Role** Primary Contact	**Contact** hnetterville@twu.edu

Texas Woman's University
Institutional Review Board (IRB)
irb@twu.edu
https://www.twu.edu/institutional-review-board-irb/

March 2, 2021

Hillary Netterville
Human Dev & Family Studies

Re: Exempt - IRB-FY2021-128 Implications of the Marital Relationship as Measured by Interpersonal Spousal Support, Marital Satisfaction and Municipal Firefighter PTSD Symptom Severity: An Online Mixed Methods Approach

Dear Hillary Netterville,

The above referenced study has been reviewed by the TWU IRB - Denton operating under FWA00000178 and was determined to be exempt on February 27, 2021.

Note that any modifications to this study must be submitted for IRB review prior to their implementation, including the submission of any agency approval letters, changes in research personnel, and any changes in study procedures or instruments. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All modification requests, incident reports, and requests to close the file must be submitted through Cayuse.

On February 26, 2022, this approval will expire and the study must be renewed or closed. A reminder will be sent 45 days prior to this date.

If you have any questions or need additional information, please contact the IRB analyst indicated on your application in Cayuse or refer to the IRB website at http://www.twu.edu/institutional-review-board-irb/.

Sincerely,

TWU IRB - Denton

Texas Woman's University
Institutional Review Board (IRB)
irb@twu.edu
https://www.twu.edu/institutional-review-board-irb/

May 5, 2021

Hillary Netterville
Human Dev & Family Studies

Re: Modification - IRB-FY2021-128 Implications of Marital Relationship Quality as Measured by Interpersonal Spousal Support, Marital Satisfaction and PTSD Symptom Severity as Reported by Municipal Firefighters and Police Officers: An Online Mixed Methods Approach

Dear Hillary Netterville,

The modifications listed below have have been reviewed and approved on May 4, 2021 by theTWU IRB - Denton.

Modifications:

Due to difficulty reaching adequate first responder sample size with firefighters, the researchers will add police officers to the first responder sample.

The title of the study has also been updated FROM: *"Implications of the Marital Relationship as Measured by Interpersonal Spousal Support, Marital Satisfaction and Municipal Firefighter PTSD Symptom Severity: An Online Mixed Methods Approach"* TO: *"Implications of Marital Relationship Quality as Measured by Interpersonal Spousal Support, Marital Satisfaction and PTSD Symptom Severity as Reported by Municipal Firefighters and Police Officers: An Online Mixed Methods Approach."*

If you have any questions or need additional information, please email your IRB analyst at irb@twu.edu or refer to the IRB website.

Sincerely,

TWU IRB - Denton

APPENDIX B

ONLINE CONSENT FORMS

Implications of Marital Relationship Quality as Measured by Interpersonal Spousal Support, Marital Satisfaction and PTSD Symptom Severity as Reported by Municipal Firefighters and Police Officers: An Online Mixed Methods Approach

Texas Woman's University

Researcher: Hillary Netterville, MS, LPC-S, NCC

Phone: 469-850-2156

Research Advisor: Linda Ladd, PhD, PsyD

Phone: 940-391-0834

Marriage and Family Therapy Program

College of Professional Education

Texas Woman's University

Purpose of this Online Research

This is an online research study to complete dissertation requirements for Hillary Netterville, a doctoral candidate at Texas Woman's University. The purpose of this research is to examine the relationship between firefighter and police officer reported symptoms of posttraumatic stress disorder (PTSD) and firefighter and police officer perceived marital functioning. Marital functioning will be based on two relational factors: 1) the first responders' perceived marital interpersonal support, and 2) the first responders' perceived marital satisfaction. The results of this mixed method research study can potentially lead to a better understanding of the relationship between first responder PTSD symptoms and marital functioning. You have been asked to participate in this study because you are currently employed as a firefighter or a police officer.

Participation Criteria

In order to be a participant in this study, you must be between the ages of 18 and 60, currently married or in a committed relationship for at least 5 years, currently employed as a paid firefighter or police office for the past 5 years and living in the United States. This study is open to persons of any gender, race, ethnicity, or sexual orientation.

Description of Procedures

As a participant in this study, you will be asked to spend up to 45 minutes of your own time completing an online survey on a computer and at a location of your choice. The survey does not ask your name or address or any other self-identifying information. You will complete three open-ended qualitative questions and four quantitative questionnaires: a demographic

questionnaire, the Kansas Marital Satisfaction Scale, the Posttraumatic Stress Disorder Check List-5, and the Marital Interpersonal Support Evaluation List.

Risks of Participating in this Study

Emotional Discomfort. You will be asked to provide information about your potential for having PTSD, your marital satisfaction, your marital interpersonal support, and demographic data (age, gender, income, education, race/ethnicity, etc.). If any of these questions cause you any emotional discomfort, you may withdraw from the study at any time without any penalty.

You may choose to skip any question or withdraw from this study at any time without penalty. If you feel you need to talk to a professional about your discomfort, the researcher has provided you with a list of mental health resources.

Loss of Confidentiality. Personal identifying information will not be collected with the survey; the consent form will be embedded in the online survey. There is a potential risk of loss of confidentiality in all email, downloading, and Internet transactions. In order to minimize risk of loss of confidentiality, data will be stored on a secure, fingerprint and password protected computer.

Executive Summary of the Study

Should you choose to request an executive summary of this study, you will be directed to a separate PsychData survey link at the end of the study. On that separate link, you can leave your email address and I will send the executive summary of the study within six months of defending my dissertation. Once you leave the first PsychData site to enter the second PsychData site, you cannot return to the original survey.

Potential Benefits of Proposed Research to Subjects and Others

Results of this study will be shared in presentations and publications at the national and state level and with first responder organizations. Study benefits may raise awareness leading to greater individual and community empowerment, enhanced knowledge of first responder PTSD, as well as mental health concerns and needs related to performance of duties as first responders. The information gained in the course of this research may be used to improve first responder PTSD interventions.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Questions Regarding the Study

If you have any questions about the research study, you are encouraged to contact the researchers; their phone numbers are at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the Texas Woman's University Office of Research and Sponsored Programs at 940-898-3378 or via e-mail at IRB@twu.edu.

Mental Health Resources

Below is a list of mental health resources, you will also find these at the end of the online survey. I encourage you to print this referral list for convenient access following the completion of this survey.

Mental Health Resources

American Association for Marriage and Family Therapy (AAMFT)

Find A Therapist Website Link: https://www.aamft.org/Directories/Find_a_Therapist.aspx

American Psychological Association (APA)

Psychology Help Center Website Link: https://www.apa.org/helpcenter/index.aspx

National Suicide Hotline: 800-273-8255

Psychology Today

Find A Therapist Website Link: https://www.psychologytoday.com/us/therapists

SAMHSA National Hotline: 800-662-4357

Giving Consent to be in the Study

Please click on the button below if you consent to be a part of this study. After clicking on the button, please continue to the next page. If you choose not to be in the study, thank you and please exit the study now.

APPENDIX C

DEMOGRAPHIC QUESTIONAIRE

Demographic Questionnaire

1. **What is your gender?**
    a. **Male**
    b. **Female**
    c. **Other**
2. **What is your Current age? _____**
3. **What is your Spouse's/Partner's Current age? _____**
4. **What is your Current relationship status with your partner?**
    a. **Married for at least five years**
    b. **Committed relationship for at least five years**
5. **How long have you been married or in a committed relationship with your partner?**

    _____
6. **Have you ever been divorced?**
7. **What Race/Ethnicity do you identify with (please check all that apply):**
    a. **American Indian or Alaskan Native**
    b. **Asian**
    c. **Black or African American**
    d. **Hispanic**
    e. **Native Hawaiian or other pacific Islander**
    f. **White or Caucasian**
    g. **Other (please specify) _____**

8. **What is the highest degree or level of school you have completed? If currently enrolled, mark the highest degree completed.**
    a. **Some college (ex. Fire academy, paramedic school, etc.)**
    b. **Associate's degree**
    c. **Bachelor's degree**
    d. **Master's degree**
    e. **Professional Degree (ex. MD, DDS, DVM, LLB, JD)**
    f. **Doctorate Degree (ex. PhD, PsyD, EdD)**
9. **What Certifications do you currently hold, check all that apply:**
    a. **ECA**
    b. **EMT**
    c. **Intermediate**
    d. **Paramedic**
    e. **Firefighter**
    f. **Police Officer**
10. **How many years have you been in the service as a paid firefighter or police officer?**
    a. **Less than 1 year**
    b. **12 months to 4 years**
    c. **5 years to 8 years**
    d. **9 years to 13 years**
    e. **More than 13 years**
11. **Do you have prior military experience?**
    a. **Yes: non-combat related**

b. **Yes: Combat related**

c. **No prior military experience**

12. **Was there a time during your childhood that you experienced a trauma that may include, but is not limited to: emotional abuse, physical abuse, sexual abuse, or sudden death of a loved one?**

    a. **Yes**

    b. **NO**

    c. **Other, please specify_____**

13. **Have you ever been diagnosed with PTSD?**

    a. **Yes**

    b. **No**

14. **In the past week, how many hours have you been on duty at the fire department or police department? _____**

15. **How many hours of sleep did you get last night? _____**

16. **About how many hours of sleep have you had in the past week? _____**

17. **How often do you work overtime shifts? _____**

18. **Do you work a part time job, if so, what is your part time job?_____**

19. **How often do you talk to your spouse/partner about the traumatic calls you experience while on duty?_____**

20. **How often do you talk to your spouse/partner about non-traumatic calls?**

21. **How man alcoholic drinks do you have per a week on average?**

22. **In the last 12 months have you experienced the death of a loved one?**

    a. **Yes**

b. No

23. In the last 12 months, have you responded to any calls that gave seemed to have lasting negative effects on you? If yes, briefly explain events and effects.

24. Do you currently have children living in your home?

a. Yes

b. No

25. Please indicate the number of children currently residing in your home under the age of 18. _____

APPENDIX D

PSYCHOMETRIC INSTRUMENTS AND EMBEDDED QUALITATIVE QUESTIONS

PCL-5

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15. Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being "superalert" or watchful or on guard?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

PCL-5 (14 August 2013) National Center for PTSD Page 1 of 1

Have you ever found your spouse/partner to be helpful or comforting during an anxious moment related to job trauma? Please explain.

Kansas Marital Satisfaction Scale (KMS)

Please read each statement and ask yourself "How much do I agree?" There are no right or wrong answers. The best answer is the one that describes your personal view. Select the response that best indicates how much you agree with each statement.

SCORE (1-7) **1 = Extremely dissatisfied** **2 = Very dissatisfied** **3 = Somewhat dissatisfied** **4 = Mixed** **5 = Somewhat satisfied** **6 = Very satisfied** **7 = Extremely satisfied**	**Response**	
		1. How satisfied are you with your marriage?
		2. How satisfied are you with your husband/wife as a spouse?
		3. How satisfied are you with your relationship with your husband/wife?

When considering your satisfaction with your spouse/partner, describe how your satisfaction effects how you "deal with" the trauma you experience as a first responder.

Can you recall an experience in which you felt satisfied or dissatisfied with your spouse/partner or committed partner following a work-related stressor or trauma?

INSTRUCTIONS:

This scale is made up of a list of statements, each of which may or may not be true about you. For each statement check "definitely true" if you are sure it is true about you and "probably true" if you think it is true but are not absolutely certain. Similarly, you should check "definitely false" if you are sure the statement is false and "probably false" if you think it is false but are not absolutely certain.

	Definitely False 0	Probably False 1	Probably True 2	Definitely True 3
1. I trust my spouse to help solve my problems.	O	O	O	O
2. I do not feel comfortable talking to my spouse about intimate personal problems.	O	O	O	O
3. My spouse can give me an objective view of how I'm handling my problems.	O	O	O	O
4. I can not share my most private worries and fears with my spouse.	O	O	O	O
5. I can turn to my spouse for advice about handling problems with family members.	O	O	O	O
6. When I need suggestions on how to deal with a personal problem, I can turn to my spouse.	O	O	O	O
7. I could turn to my spouse for advice about making career plans or changing my job.	O	O	O	O
8. I can trust my spouse to give me good financial advice.	O	O	O	O
9. If a family crisis arose, my spouse could not give me good advice about how to handle it.	O	O	O	O
10. I really trust my spouse's advice.	O	O	O	O

Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. (1985). Marital Interpersonal Support Evaluation List [measurement instrument].

Please identify how the support from your spouse/partner or lack of support from your spouse/partner has impacted your ability to deal with traumatic events you have experienced as a firefighter or police officer.

APPENDIX E

FACEBOOK FLYER

Implications of Marital Relationship Quality as Measured by Interpersonal Spousal Support, Marital Satisfaction and PTSD Symptom Severity as Reported by Municipal Firefighters and Police Officers: An Online Mixed Methods Approach

Lead Researcher: Hillary Netterville

Hillary Netterville is a PTSD therapist in Denton, Texas, working with first responders and Veterans. Her husband has been a firefighter for 12 years and has been with the City of Grapevine for 7 years. As part of the firefighter family, this research has become a priority and vested interest in the making for the past 5 years.

Hillary Netterville and researchers from the department of Human Development, Family Studies & Counseling at Texas Woman's University are recruiting participants for a research study about the relationship between first responder PTSD and marital interpersonal support. This study may help us to better understand how the marital system can buffer or exacerbate PTSD manifestation among firefighters and police officers.

You are eligible to participate in this study if you are at least 18 years of age or older and have been in the fire or police service for at least five years and have been in a married or in a committed relationship for at least five years. Participation in this study is voluntary and participants can exit the survey at any time.

The study will be conducted through an online questionnaire. The questionnaire may take up to 45 minutes to complete

As part of participating, you will be asked to complete 3 scaling assessments and complete 4 short answer questions. The scaling assessments will be questions that are answered by selecting a number between 1 through 5 based on the best fit for your experience. The short answer questions will require several sentences to provide your specific marital experience.

There is a potential risk of loss of confidentiality in all email, downloading, electronic meetings, and internet transactions.

This survey will not ask for any self- identifying or department information, your participation will be anonymous.

If you participate, there is no anticipated direct benefit.

Please feel free to share this flyer with other firefighters and police officers or firefighter and police agencies!

If you are interested in participating in this study, please click the link below to be forwarded to the survey or contact Hillary Netterville at hnetterville@twu.edu

PsychData link: https://www.psychdata.com/s.asp?SID=191635

*Please do not alter this flyer when forwarding to other agencies

*The link to the survey will expire on 10/01/2021

APPENDIX F

MENTAL HEALTH RESOURCES

Mental Health Resources

American Association for Marriage and Family Therapy (AAMFT)

Find A Therapist Website Link: https://www.aamft.org/Directories/Find_a_Therapist.aspx

American Psychological Association (APA)

Psychology Help Center Website Link: https://www.apa.org/helpcenter/index.aspx

National Suicide Hotline: 800-273-8255

Psychology Today

Find A Therapist Website Link: https://www.psychologytoday.com/us/therapists

SAMHSA National Hotline: 800-662-4357