

University of Nevada, Reno

**Examining the Impact of Social Support and Other Coping Strategies
on Mental Health in First-Responders**

A thesis submitted in partial fulfillment
of the requirements for the degree of

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Abstract

First responders are routinely exposed to traumatic events while on their job. Responders are at risk for increases in psychological symptoms (such as symptoms of posttraumatic stress disorder (PTSD), secondary traumatic stress, and burnout) and decreases in well-being (including overall resilience and compassion satisfaction). This study is aimed to explore coping strategies (i.e., social support) first responders use to defend themselves against these potentially harmful outcomes. Previous research suggests social support is a strong predictor of better psychological outcomes among those exposed to trauma and frequent stressors. However, we do not yet know how the benefits of social support compare to other coping strategies, such as positive reframing and reliance on religion. Furthermore, it is unclear which types, and which sources, of social support are the most helpful for buffering against the negative impact of stress and trauma among first responders. To address these questions, I recruited first responders from the Reno and Las Vegas areas ($N = 69$) and used a battery of self-report questionnaires to **evaluate (a) the efficacy of social support relative to other coping strategies, (b) the relative efficacy of various subtypes of social support, and (c) the relative efficacy of various sources of social support, for improving psychological outcomes among first responders.** Results indicate that relative to all other coping strategies tests, social support was the strongest predictor of lower psychological symptoms and higher resilience and compassion satisfaction. When comparing subtypes of social support, I found that level of emotional social support was associated with lower burnout and higher resilience. Furthermore, perceived accessibility of social support was associated with lower symptoms of PTSD, lower symptoms of secondary traumatic stress, lower general psychological distress (using a measure of stress, anxiety, and depression), higher resilience, and higher compassion satisfaction. Support from a responder's

supervisor was associated with lower burnout, and higher resilience and compassion satisfaction. However, friends emerged as the most important source of social support; perceived support from friends predicted better outcomes on all measures, except resilience. These results suggest that social support is one of the better coping strategies, accessibility of social support is one of the better subtypes of social support, and receiving support from friends has the most impact, for improving psychological outcomes of first responders. The findings provide new data on the types and sources of social support that may be the most beneficial for buffering against the negative impact of repeated stress exposure among first responders. Future studies replicating these findings with longitudinal and experimental (e.g., preventative) methods would be helpful for further evaluating the causal role of types and sources of social support on the psychological health of first responders.

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Introduction

The First Responders Group was established by the Department of Homeland Security as a partnership to serve those suffering from catastrophes. First responders are professionals and volunteers (e.g., firemen, police officers, and emergency medical services personnel) trained to respond and assist to an emergency. There are approximately 2 million responders within the United States, half of them serving as volunteers (Cox, 2003). First responders routinely encounter physical and psychological trauma (e.g., response to a death, active shootings, and natural disasters) as they are the first to arrive on a scene and the first to help survivors. Often, these events can be traumatic to both the survivors and the responders. (Larsson, Berglund, & Ohlsson, 2016).

Types of Trauma

The term “trauma” is defined by extreme experiences that may have lasting impacts on an individual or group of individuals. Trauma is divided into two major forms: physical and psychological. Physical trauma describes a severe injury to the body, such as blunt force trauma (e.g., an object striking the body may cause physical harm such as broken bones; Physical trauma, 2018). Other types of physical trauma include sexual violence and also penetrating trauma, such as when an object pierces the body. This research project mainly focuses on psychological trauma. According to the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM -5; American Psychiatric Association, 2013), which is used by health care professionals as a guide to diagnose mental health disorders, psychological trauma is “exposure to actual or threatened death, severe injury, or sexual violence” (p. 271). The DSM-5 further states that one could experience a traumatic event in several ways: personal experience of an event; first-hand, witnessing of an event related to death, injury, or physical threat; or learning

of an event related to death, injury, or physical threat that occurred to a family member or close associate. Additionally, there may be repeated experience or extreme exposure to aversive details of the traumatic event in the context of one's occupation, such as in traumas encountered while enlisted in the military or working as a first responder.

Secondary trauma exposure is as harmful as primary (direct) trauma exposure with just as many negative effects (Pearson, 2012). The term secondary trauma is defined as indirect exposure to a trauma, such as graphic traumatic event details, observation of traumatic events, or recollection of traumatic experience by a survivor (Benight, 2016). A psychological outcome of secondary trauma is secondary traumatic stress or "compassion fatigue", defined as emotional fatigue due to the empathized emotions experienced while having close contact with the trauma survivor and having a response to survivors' traumatic experience (Jenkins & Baird, 2002). The 2002 study found secondary traumatic stress to be correlated with general distress and job-related burnout (Jenkins & Baird, 2002).

Statistics of the representational national population's trauma exposure in a study demonstrated high prevalence of trauma; 89.7% of participants reported traumatic exposure according to the DSM-5 criteria (Kilpatrick, Resnick, Milanak, Miller, Keyes, & Friedman, 2013). First responders are among this representational population and respond to the national population. These statistics further support the high exposure of responders to trauma.

Trauma Psychological Reactions and Outcomes

Reactions and distress following exposure to a traumatic event are different for everyone as well as their accompanying symptoms, such as flashbacks, anxiety, shock, and guilt. These symptoms are developed shortly after the traumatic experience, but most people overcome the symptoms (Lancaster, Teeters, Gros, & Back, 2016). While most individuals experience a

natural recovery after trauma exposure, other individuals do not experience a recovery and instead develop negative psychological outcomes (e.g. stress- and trauma-related disorders). Stress- and trauma-related disorders are described in the DSM-V as acute stress disorder (ASD) and posttraumatic stress disorder (PTSD). ASD duration of symptoms occurs 3 days to 1 month after the trauma exposure. If symptoms are prolonged for more than a month after the trauma, the person is diagnosed with PTSD. Symptoms of ASD are divided into five categories: intrusions, negative mood, dissociation, avoidance, and arousal. Intrusions symptoms consist of psychological distress due to recurrent thoughts and memories of the event (e.g., flashbacks and dreams related to the event). Negative mood induces an increase in emotions such as sadness and irritability and decreases in the ability to have positive emotions. Dissociation is characterized by the altered sense of self and inability to recall events of trauma. Avoidance symptoms are efforts to avoid thoughts or reminders related to trauma (e.g., people and situations). Finally, arousal is heightened physiological activity (e.g., being hyperalert and having difficulty concentrating). Criteria of PTSD include: exposure to trauma, presence of intrusion symptoms, continual avoidance of stimuli related to the trauma, negative mood, cognition associated with the trauma, alterations of arousal and reactivity associated with the trauma, and symptoms that result in distress or impairment in important areas of functioning. These symptoms must not be caused by any substance (e.g. alcohol and drugs) to meet criteria for PTSD. (American Psychiatric Association, 2013).

Other negative psychological outcomes that arise from trauma exposure are secondary traumatic stress (STS), job-related burnout, and comorbidities. Secondary traumatic stress exhibit similar symptoms to ASD and PTSD. The main difference of STS from ASD and PTSD is that STS arises only from indirect exposure to trauma. Benight (2016) additionally presents a

meta-analysis of data demonstrating STS prevalence. STS is present among 15% to 40% of social care related workers and among 16% to 33% health care workers. Burnout has been strongly associated with secondary traumatic stress (Cieslak, Shoji, Douglas, Melville, Luszczynska, & Benight, 2014). In a meta-analysis of professionals who work with trauma survivors, Cieslak et al., (2014) conclude that more exposure to secondary trauma yields the same high rate of job burnout. Burnout syndrome is a work-related disorder that is caused by stressful working conditions that are continually endured. The syndrome includes exhaustion, feeling of helplessness at an emotional level, cynicism of negative attitude towards work and colleagues, and inability to perform professionally (Montero-Marin, Prado-Abril, Piva, Gascon, & Garcia-Campavo, 2014). Job-related burnout is pertinent concern among first responders. Several studies cited in Benight's (2016) systematic review support this claim. After a review of 7 studies, Benight concluded burnout decreases effectiveness of treatment of trauma survivors, increases negative attitude with survivors, and decreases commitment to their respective organizations.

Risk and Resilience in Trauma Exposure

In the broader literature concerned with trauma, decades of work evaluated factors that contribute to the potential development of negative psychological consequences after exposure to traumatic events. There has been much speculation on risk and resilience factors. Risk factors are any characteristic, attribute, or exposure that increases the development of a psychological disorder. A meta-analysis of 68 studies revealed several risk factors for the development of PTSD after trauma exposure, including: history of trauma exposure, prior psychological adjustment, family history of psychopathology, perceived life threat during the trauma, peri-traumatic (i.e., during the trauma) emotional response, and peri-traumatic dissociation (Ozer,

Best, Lipsey, & Weiss, 2003). The more risk factors an individual possesses, the more susceptible they are in developing a stress-related disorder (e.g., acute stress disorder or PTSD) after a traumatic event. Risk factors are not only associated with increased likelihood of a negative psychological outcome, but they are also associated with a worse severity of psychological symptoms. For example, if an individual were to have intense negative emotions in response to a traumatic event, the individual is more likely to have higher levels of PTSD symptoms (Ozer et al., 2003).

Previously, studies have focused on risk factors, but recently, researchers have also paid more attention to factors that promote resilience (Smith, Dalen, Wiggins, Tooley, Christopher, Paulette, & Bernard, 2008). Resilience is the ability to quickly recover after stress exposure and the ability to be at a higher level of functioning after exposure to a stressful event. Additionally, resilience can be described by the decrease in the development of a disorder, and the adaptation to a stressor arising from the trauma (Smith et al., 2008). There have been many proposed measures of resilience throughout research history. As Smith et al. (2008) has indicated, early research focused on protective factors and personal resources such as perseverance and self-reliance, whereas more recent measures of resilience assess the resources that provide a positive adaptation to stress, such as optimism, active coping, and social support. Optimism is related to staying positive about the traumatic event, active coping is directly dealing with the trauma (e.g. an individual may come to terms with accepting the traumatic experience happened for a reason), and social support is demonstrated by seeking of any social (e.g., peers, family, or friends) means to cope with trauma.

Developing a better understanding of factors that contribute to resilience is critical to the development of preventative interventions aimed to buffer against negative psychological

consequences associated with repeated stress and trauma exposure among first responders. Understanding risk factors is as important to decrease the vulnerability to potentially negative psychological outcomes. These sets of factors can be used as measurement of effectiveness for coping in response to traumatic exposure.

Intervention and Prevention of Trauma

There has been much debate over which interventions and preventative strategies are most beneficial for reducing potential negative psychological outcomes from the occupation. Controversy regarding intervention strategies is about both the content and the timing of the intervention delivery (Kleim & Westphal, 2011). Kleim & Westphal (2011) claim some researchers believe the target for the intervention should be only for high-risk individuals (the intervention is only effective on ones who need the most help), as supported by the effectiveness of treatment offered to a high-risk population that is trauma-exposed; while other researchers argue interventions targeting the general population exposed to trauma are harmful. These interventions are undergoing further research, as controversy over their efficacy has accumulated (Kleim & Westphal, 2011). Prevention of these negative outcomes and overcoming of the natural symptoms after a trauma are done through the coping ability of the individual. Effective coping strategies allow trauma-exposed population to have a natural recovery process after the trauma, while ineffective coping strategies do not allow natural recovery and instead promote stress-related disorders.

Coping Strategies

Studies have also considered the role of risk (traits that increase the potential for negative psychological outcomes) and resilience (traits that increase the positive psychological state) factors after a traumatic event. Ways to decrease risk factors and increase resilience have been

researched by examining coping strategies. The ability to cope is based on the efficacy of coping strategies (ways to deal with a traumatic event that prevent negative psychological and/or physical outcomes). Coping responses are key to determining the psychological adjustment of individuals, including first responders, recovering from significant stress exposure (Monzani, Steca, Greco, D'Addario, Cappelletti, & Pancani, 2015). Several categories and distinctions of coping strategies have been identified, including: situational coping responses vs dispositional coping styles, approach coping (acceptance) vs avoidance coping (denial), and active coping (problem-focused) vs emotion-focused coping (self-reflection; Monzani et al., 2015). Each pair of coping strategies (e.g. approach coping vs avoidance coping) is distinct, independent from other pairs. For example, an individual may cope by approach or avoidance strategies or an individual may cope by active or emotion-focused strategies. Situational coping responses relate to how an individual reacts with a stressor, while dispositional coping relates to how often certain coping reactions are used in response to stressors. Approach coping directly deals with the stressor caused by the trauma, while avoidance coping consists of actively not associating with anything in relation to the trauma or not accepting the traumatic event. Active coping is illustrated by responding to or resolving a stressor, whereas emotion-focused coping is illustrated by managing the emotions that arise in response to a stressor (Monzani et al., 2015). Carver (1997) developed a scale with 14 coping responses that included self-distraction, denial, active coping, substance use, social support (i.e., emotional support, instrumental support, and religion), venting, planning, acceptance, self-blame, humor, optimism, and behavioral disengagement. The conceptualization of categories of coping responses provided by this scale lends researchers a helpful tool for evaluating the different magnitudes of each coping response for buffering against the negative effects of stress and trauma exposure (Carver, 1997).

Social Support

One coping strategy that researchers have found to be one of the best predictors of resilience is the use of social support (Ozer et al., 2003). Social support is the act of another individual providing support to the individual in need (such as talking about a traumatic event or stressful event, or providing interactions that produce a more positive mood for the distressed individual). Social support ranges from working with support groups to talking with a de-briefer. However, historically, there has been much debate regarding whether social support plays a critical role in promoting mental health. One hypothesis, the “reverse buffering effect,” suggests that the expression of negative emotions in the context of social support leads to an increase in traumatic stress (Stephens, Long, & Miller, 1997). Stephens and researchers also note the potential for the supporting members to not be supportive, depending on the way both parties – the survivor and the supporting member(s) – communicate. Most research (highlighted in the next paragraph), however, contradicts this theory that social support is harmful.

Two meta-analyses have identified social support as one of the strongest predictors of psychological resilience among trauma-exposed populations (Brewin, Andrews, & Valentine, 2000; Ozer et al., 2003). Additionally, among the first responder population specifically, a meta-analysis of 37 studies demonstrated the benefits of social support in promoting mental health (Prati & Pietrantonio, 2010). Research also suggests that social support protects against job-related burnout (Montero-Marín et al., 2014). In a study of firefighters, social support was shown to improve first-responders’ ability to cope with the transition from one critical incident to the next. (Dowdall-Thomae, Gilkey, Larson, & Arend-Hicks, 2012). Additionally, the protective effect of social support against stress is well-illustrated by the stress buffering hypothesis, which suggests that psychosocial stress has negative psychological effects on the overall health of those

with little or no social support. People with strong support systems have the negative effects of stress either lessened or eliminated. (Cohen & McKay, 1984).

The efficacy of social support may depend on the subtype of support. Researchers have argued about the different ways social support can be divided into categories. One widely accepted model of social support subtypes includes four types; emotional support (i.e., attachment), informational support (i.e., guidance), tangible support (i.e., aid), and positive social interaction (i.e., social companionship; Sherbourne & Stewart, 1991). Emotional support consists of support associated with emotions, such as feeling safe with a family member. Informational support is support that explains more about the event and the gain of more knowledge from the event through a friend. Tangible support is physical aide or physical activities with someone, such as a friend buying the trauma-exposed individual a gift. Finally, positive social interaction is any interaction by social parties that increases positive feelings such as doing an activity the trauma survivor enjoys. The relative benefits of these subtypes of social support in first responders are unknown, although research suggests that emotional support may be among the most helpful modalities of social support. For example, Pennebaker and Seagal (1999) investigated the benefits of sharing emotionally-related personal information and found that although people were distressed immediately following the writing of their experiences, they were happier in the long-term (Pennebaker & Seagal, 1999). Another study identified the negative impact of emotional isolation among older adults, where low social support contributes to emotional isolation (Van Baarsen, 2002). Cornwell & Waite (2009) also found that lack of sufficient support, lack of coping outlet, and emotional isolation were important mechanisms in the development of anxiety and depression. Additionally, in a recent study, Jacobson, Lord, and Newman (2017) study found that lower emotional support predicted higher depressive symptoms

in a sample of older adults. The study also found low emotional support predicted elevated levels of depression symptoms two and half years later. (Jacobson et al., 2017).

The efficacy of social support may also depend on the source of social support. Stephens and colleagues (1997) mention how social support could be harmful, depending on the way both parties – the victim and the supporting members (source) – communicate. As most research (e.g. Brewin et al., 2000, Dowdall-Thomae et al., 2012) illustrate the benefits of social support, it is still important to consider that the sources of social support could be unhelpful. It is important to consider Stephens (1997) claim, to investigate whether the source of social support has potential to promote negative psychological symptoms and decrease overall well-being among trauma-exposed first responders. A 2015 study researched the efficacy of various sources of social support on mortality rate (relatives, friends, and spouse). The study found that support from one's relatives and spouse reduced mortality risk by 19%, support from one's friends had no association with mortality overall. Contact with 6 to 7 friends, however, reduced mortality risk by 24% (Becofsky, Shook Sui, Wilcox, Lavie, & Blair, 2015). Supported by Becofsky et al., 2015, family and friends (6-7 friends) may be the most important sources of support.

Although dozens of studies have demonstrated social support to be among the strongest buffers against the negative effects of trauma and stress exposure (e.g., Prati & Pietrantonio, 2010) more specific information is needed to guide the development of preventative interventions. For example, it is still unclear which types of social support produce the best psychological outcomes after a traumatic event, and how social support performs relative to other potentially protective coping strategies in response to a trauma. There are still significant gaps in our knowledge; social support has not yet been compared to other commonly used strategies (e.g., humor, religion, and distraction) to determine its relative efficacy in promoting resilience and reducing

risk for the development of negative psychological reactions after stress exposure in first responders. Furthermore, there are multiple social support subtypes (i.e., emotional support or instrumental support; Hanebuth, Aydin, & Scherf, 2012), and it is unknown which types yield the most psychological benefits. Additionally, the efficacy of sources of social support (i.e. friends and family) have not been compared to other sources. The present study will determine if social support has the most efficacy for first responders coping with potential traumatic events (relative to other coping strategies); if emotional support is the best subtype of social support in promoting mental health; and if family and friends are the most helpful sources of social support.

Existing Literature on Trauma and First Responders

Extensive scientific literature dedicated to the study of the mental health of first responders supports the psychological risk of first responders. First responders continually battle to avoid negative psychological outcomes. Some responders recover from trauma, while others develop trauma-related psychological disorders. A meta-analysis (Jones, 2017) illustrates the psychological risk of responders throughout decades. The study done by Grevin (1996) reported 22% of professional paramedics in the U.S. had PTSD and urban firefighters reported PTSD rate of 22%. A 2006 study found 8% of firefighters within two US states, unspecified in the study itself, met criteria for PTSD (Del Ben, Scotti, Chen, & Fortson, 2006). Six years later another study suggested 4.2% of a group of U.S. firefighters had current PTSD and 3.5% had PTSD within their lifetime (Meyer, et al., 2012).

Other studies have included cross-sectional and longitudinal data collection among different types of responders, such as police, paramedics, and firefighters (Kleim & Westphal, 2011). For example, in a cross-sectional survey, emergency personnel, ranging from trauma doctors to those in the Coast Guard, reported on their levels of critical stress exposure and

suicidal ideation (Newland, Barber, Rose, & Amy, 2015). Critical stress was defined as significant stress from a single critical incident or from multiple incidents accumulated over time. Researchers found that 97% of first responders report the presence of critical stress, and 56% reported suicidal ideation (12% attempted; Newland et al., 2015). Despite these numbers, only 30% sought out therapeutic help to cope with their problem (Newland et al., 2015). These rates are higher than the national average; data obtained from the CDC suggest that 37% of the general population have contemplated suicide and only 6.6% have attempted suicide (Centers for Disease Control and Prevention, 2012).

Although the majority of first responders do not report significant effects of traumatic stress exposure (Pietrantonio & Prati, 2008), a significant minority does report experiencing clinically significant stress reactions. For example, Fullerton and researchers (2004) found that disaster workers, who responded to an airliner crash, examined acute stress disorder, posttraumatic stress disorder, early dissociative symptoms, and depression. Disaster workers exposed to the crash scene reported PTSD rates of 11%-32% and were four times more likely to develop depression compared to rescue workers at a different similar-sized community (Fullerton, Ursano, & Wang, 2004). Another study surveyed 1,382 responders to Hurricane Katrina and found that 10% of participants indicated significant levels of posttraumatic stress symptoms and 25% reported significant levels of depression (Osofsky, Osofsky, Arev, Kronenberg, Hansel, & Many, 2011).

Project Overview

The present study will evaluate these hypotheses by examining self-report data from a large, cross-sectional sample ($N = 69$) of first responders, recruited from both professional and volunteer organizations in the Reno and Las Vegas areas. Participants completed

psychometrically validated scales that measured level of mental health, including PTSD symptoms (Posttraumatic Stress Disorder Checklist; Blevins, Weathers, Davis, Witte, & Domino, 2015), secondary traumatic stress symptoms (Secondary Traumatic Stress Scale; Bride, Robinson, Yegidis, & Figley, 2004), general symptoms of stress, anxiety, and depression (Depression Anxiety and Stress Scale; Henry & Crawford, 2005), burnout (Abbreviated Maslach Burnout Inventory; Riley, Mohr, & Waddimba, 2018), resilience (Brief Resilience Scale; Smith et al., 2008), and compassion satisfaction (Professional Quality of Life Scale; The ProQol Measure In English and Non-English Translations, 2012). The sample furthermore reported on potential predictors of mental health, including social support (Copenhagen Burnout Inventory: Social Support Scale; Hanebuth et al., 2017), and other coping strategies such as religion and humor (Brief Coping Orientation to Problems Experienced; Monzani et al., 2015). All analyses were controlled for by the amount of prior stress exposure (measured by the estimated average of the number of emergency calls the participants responded to per month).

Given the evidence supporting the benefits and relative higher efficacy of social support (Ozer et al., 2003, Brewin et al., 2000, Prati & Pietrantonio, 2010, Montero-Marin et al., 2014, Dowdall-Thomae et al., 2012, Cohen & McKay, 1984) compared to other coping strategies such as avoidance coping (e.g., Arble & Arnetz, 2017), **it is hypothesized that social support will be one of the most effective strategies for promoting mental health and reducing burnout among first responders.** Additionally, prior research suggests that sharing emotionally-related information produces psychological benefits (Pennebaker & Seagal, 1999, Van Baarsen, 2002, Cornwell & Waite, 2009, & Jacobson et al., 2017), such as positive health and improved overall happiness (e.g., Pennebaker & Seagal, 1999). Therefore, **it is expected that emotional support will be the most effective modality of social support for reducing negative psychological**

outcomes and improving mental health among first responders. Furthermore, in prior studies family and friends were the most helpful sources of social support (at least for reducing mortality). Therefore, **it is hypothesized that support from family and friends will both be the most effective source of social support for reducing negative psychological symptoms and promoting well-being among first responders.**

Results from this study will shed light on which coping strategies are most closely associated with psychological resilience and better mental health outcomes in first responders. The knowledge gained may help inform the development of preventative strategies to increase psychological wellbeing and reduce dropout rate due to burnout among first responders.

Methods

Participants

Participants (N = 69) were adult volunteer and professional emergency first responders in the Reno and Las Vegas areas of Nevada. Responders were either affiliated with the police department, fire department, emergency medical services, or the Trauma Intervention Program (TIP). The TIP consists of volunteers providing social support to families of a tragedy alongside professional first responders. Volunteers were studied with professional first responders because both types of responders have exposure to similar traumatic events. Participants who were not adults, first responders, nor have responded to emergency calls were excluded.

Demographics reported amount of first responders in each affiliation, gender, ethnicity, hours on average worked per month, and number calls per month on average.

Procedures

After IRB approval of the study, measures (appendix C) were distributed in the form of a one-time/cross-sectional survey through Qualtrics (an online survey software). Measures were determined by their reliability and validity cited by other studies (see measures section). Participants were recruited through IRB approved mass emails (appendix A) sent out to contacts within the first responder organizations (directors of Trauma Intervention Programs based in the Reno and Las Vegas area, and from the outreach officers of professional first responder organizations based in Reno and Las Vegas). In an effort to increase response rates, I used incentives; \$20 electronic VISA gift cards were provided upon completion of the survey. The survey was sent out to 455 first responders in total, and I had a response rate of approximately 15% who completed the full survey.

Measures

I. Trauma Exposure. Trauma exposure was assessed with average number of emergency calls responded to, per month. Each responded emergency call should be indicative of trauma exposure. In the present sample of first responders, a higher number of calls per month was associated with higher levels of trauma-related reactions (see results).

II. Brief Coping Orientation Problems Experienced (Brief COPE). Coping strategies were assessed with the Brief COPE; Monzani et al., 2015), which measured the use of a broad array of coping strategies. This scale consists of 28 items that correspond to the following 14 coping strategies: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental social support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. Respondents rated each item (each item corresponded to a specific coping strategy) on a scale from (1) *I haven't been doing this at all* to (4) *I've been doing this a lot* (Monzani, et al., 2015). A study used confirmatory factor analysis to assess reliability and validity of the measure; the results indicated acceptable reliability and validity of the coping responses to specific events (Muller & Spitz, 2003)

III. Copenhagen Burnout Inventory: Social Support Scale (CBI-SSS). Perceived social support was assessed using the Copenhagen Burnout Inventory: Social Support Scale (Hanebuth et al., 2012). The questionnaire consists of three items that correspond to specific subtypes of social support (emotional and instrumental) and accessibility of social support. The survey also used four items to assess each potential source of social support (colleagues, supervisor, family and partner, and friends). For each item, responses ranged from *very dissatisfied* (0) to *very satisfied* (4). The higher the total score, the more effective the support subtype and source is (Hanebuth et al., 2012). Hanebuth and colleagues found that the social

support scale in the Copenhagen Burnout Inventory has good reliability for the subscales (all $\alpha > .72$ with most at $\alpha > .90$).

IV. Depression Anxiety and Stress Scale (DASS-21). Mental health was assessed with the Depression Anxiety Stress Scale (Henry & Crawford, 2005). The scale consists of 21 items that measure general symptoms of depression, anxiety, and stress over the past week. Item responses range from *did not apply to me at all* (0) to *applied to me very much or most of the time* (3). Higher total scores on the scale indicate more severe symptoms (Henry & Crawford, 2005). The scale demonstrates high internal consistency for depression ($\alpha = .88$), anxiety ($\alpha = .90$), and stress ($\alpha = .93$) related items. The scale also demonstrates high convergence with another established measure of similar symptoms, the Hospital Anxiety and Depression Scale (Henry & Crawford, 2005).

V. Posttraumatic Stress Disorder (Symptom) Checklist for the DSM 5 (PCL-5).

Mental health was also assessed with the Posttraumatic Stress Disorder Checklist for the DSM-5 (Blevins et al, 2015). This scale consists of 20 items with responses on a 5-point scale, from *not at all* (0) to *extremely* (4). Higher scores are indicative of more severe PTSD symptoms. This scale has strong internal consistency ($\alpha = .94$) and high test-retest reliability over the course of one week ($r = .82$; Blevins et al., 2015). The scale convergences with other well-established measures of PTSD symptoms, including the PCL for DSM 4, Posttraumatic Diagnostic Scale, and Detailed Assessment of Posttraumatic Stress yielded ($r = .85, .85, \text{ and } .84$ respectively; $p < .01$; Blevins et al, 2015).

VI. Maslach Burnout Inventory (MBI-9). Job-related burnout was measured with the Maslach Burnout Inventory 9 item version (Riley et al., 2017). It consists of 9 items that have responses that correspond to three types of burnout (emotional exhaustion, depersonalization,

and personal achievement). Responses range from *never* (0) to *every day* (6; Riley et al., 2017). Riley and colleagues confirmed adequate reliability and validity; the MBI full length subscales correlate significantly ($p < .001$) with the abbreviated MBI and construct validity significantly matched with data ($p < .001$).

VII. Secondary Traumatic Stress Scale (STSS). Secondary traumatic stress was assessed using the Secondary Traumatic Stress Scale (Bride et al., 2004). This survey consists of 17 items that all correspond to specific subtypes of secondary stress. For each item, responses rang from *never* (1) to *very often* (5). Higher total scores indicate higher levels of secondary traumatic stress (Bride et al., 2004). Bride and colleagues determined total STSS subscale had excellent internal consistency ($\alpha = .93$). The total scale also has significant correlations with each of its subscales ($p < .002$) compared to the full scale.

VIII. Brief Resilience Scale (BRS). Resilience was accessed with the Brief Resilience Scale (Smith et al., 2008). It contains 6 items with responses that range from *strongly disagree* (0) to *strongly agree* (5) Higher total scores indicates more resilience (Smith et al., 2008). Smith and colleagues determined the scale demonstrated good internal consistency ($.80 > \alpha > .91$) and adequate one-month test-retest reliability ($r = .69$).

IX. Professional Quality of Life Scale (PROQOL). Compassion satisfaction was assessed with the Professional Quality of Life Scale (The ProQol Measure in English and Non-English Translations, 2012). The full PROQOL includes three subscales; compassion satisfaction, burnout, and secondary traumatic stress. In this study, I used only the compassion satisfaction subscale, which has only 10 items that are each rated by participants on a scale from *never* (1) to *very often* (5). Higher scores indicate higher levels of compassion satisfaction one. Craig and Sprang (2008) reported adequate internal consistency ($\alpha = .77$) for the scale.

Data Analysis Plan

Data analysis includes both preliminary and primary analyses. Preliminary analyses tested for correlation of level of trauma exposure (average number of calls per month) with the psychological outcomes (Depression Anxiety Scale, DASS; Posttraumatic Stress Disorder Checklist, PCL; Secondary Traumatic Stress Scale, STSS; Maslach Burnout Inventory, MBI; Brief Resilience Scale, BRS; Professional Quality of Life Scale – Compassion Satisfaction Subscale, PROQOL). Once significant correlation was established ($p < .10$), social support was assessed for association with outcomes, after controlling for level of trauma exposure estimated by number of emergency responded to each month (e.g. negative association with PTSD symptoms – where higher social support correlates with lower PTSD symptoms). Trauma exposure, social support, and psychological outcomes were placed in a multiple regression model to determine their relationship (i.e. positive or negative association). Example of a positive association in a multiple regression is more trauma exposure is correlated with higher PTSD symptoms and an example of negative association is more trauma exposure is correlated with lower PTSD symptoms. I evaluated whether social support had a significant association with psychological outcomes (replicating decades of prior research), in order to justify testing the main hypotheses.

Primary analyses consisted of evaluating the efficacy of coping strategies relative to social support on outcomes, the efficacy of subtypes of social support relative to other subtypes on outcomes, and the efficacy of social support sources relative to other sources on outcomes, for improving mental health outcomes. I used multiple regression models to compare the impact of social support with other coping strategies, on psychological outcomes, after controlling for amount of stress exposure (average number of calls per month). Components of social support

were compared by placing each component with average numbers of calls per month in a multiple regression model, for each of the psychological outcomes assessed. Sources of social support were compared by placing each source of social support with average number of calls per month for each outcome in a multiple regression model. Components and sources of social support were evaluated using a statistical significance for each slope value obtained. Backward elimination was used to generate the final model for the components and sources of social support that predict each mental health outcome evaluated in the present study. Backward elimination involves eliminating any variable without a statistically significant relationship with the outcome from the model (besides the control variable, amount of stress exposure), and then running the multiple regression model again, until all remaining predictors in the model are related to the psychological outcome (with at least a trend – level association, $p < .10$).

Results

Preliminary Analyses

Demographics for the sample ($N = 69$) are reported in Table 1. Gender for the population was evenly distributed (37 male and 32 female), with approximately half male and half female participants. Age of participants ranged from 18 years to 60+ years, with most participants falling between 25 years and 59 years (71%). The majority of participants reported affiliation with either the police department (47.8%) or Trauma Intervention Program (TIP; 46.4%). Only 5% reported affiliation with fire department or emergency medical services (EMS), and three participants noted their affiliation as “other” (TIP and coroner’s office, Mountain Valley Hospital, and Las Vegas Metropolitan Police Department victim advocate). These three participants who indicated “other” were placed in the TIP, EMS, and Police departments in accordance with their reported description of affiliation. Regarding the average number of hours participants work per week as a first responder, one-third reported working less than 15 hours a week, and two-thirds reported working more than 30 hours per week.

Table 1. Demographics

Demographics		
<u>Gender</u>	<u>N</u>	<u>%</u>
Male	37	53.6%
Female	32	46.4%
<u>Age</u>	<u>N</u>	<u>%</u>
18-24	7	10.1%
25-39	26	37.7%
40-59	24	34.8%
60+	12	17.4%
<u>Affiliation</u>	<u>N</u>	<u>%</u>
Police	33	47.8%
Fire	2	2.9%
EMS	2	2.9%
TIP	32	46.4%
<u>Hours per week</u>	<u>N</u>	<u>%</u>
0-14	23	33.3%
15-29	4	5.8%
30+	42	60.9%

Note: EMS = Emergency Medical Services. TIP = Trauma Intervention Program. Only 69 of 76 participants in sample reported their affiliation.

After examining demographics, we evaluated the influence of amount of trauma exposure (as measured by estimated average number of emergency calls per month) on mental health outcomes (total scores for the PCL, STSS, DASS, MBI, BRS, and PROQOL -Compassion Satisfaction subscale). Prior research indicates that higher amounts of trauma exposure are associated with higher levels of negative psychological symptoms (e.g. Kilpatrick et al., 2013). Therefore, I planned to control for this variable in my primary analyses. As expected, analysis of correlation between level of stress exposure and psychological symptoms demonstrated that a higher level of trauma exposure was associated with higher levels of some psychological symptoms (i.e., burnout (MBI) and secondary traumatic stress (STSS)); positive slope with significance $p < .05$; see Table 2). Results also demonstrated that higher levels of trauma exposure were correlated with lower levels of wellbeing (i.e., compassion satisfaction on the PROQOL subscale; negative slope with significance $p < .001$).

Table 2. Correlation of Stress Exposure with Psychological Outcomes.

	DASS	PCL	MBI	STSS	BRS	PROQOL
Number Calls per Month	0.96	1.58	6.36***	2.59*	0.41	-3.92***

Note: $p < .10^\dagger$, $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$. DASS = Depression Anxiety & Stress Scale. PCL = PTSD (symptom) checklist. MBI = Maslach Burnout Inventory. BRS = Brief Resilience Scale. STSS = Secondary Traumatic Stress Scale. PROQOL = Professional Quality of Life Scale.

After controlling for amount of trauma exposure (as estimated by average number of emergency calls per month), higher social support (Copenhagen Burnout Inventory: Social Support Subscale) was associated with lower levels of general psychological distress (DASS), PTSD (PCL), burnout (MBI), and secondary traumatic stress (STSS). Social support was positively associated with resilience and compassion satisfaction (BRS and PROQOL; see Table

3). Some of social support associations were at a trend level ($p < .10$, for the DASS and PCL), but most of these associations were statistically significant ($p < .05$, MBI, STSS, BRS, and PROQOL). The association of more social support with lower psychological symptoms and higher well-being demonstrated helpful the importance of overall levels of social support. Results of these preliminary analyses justified testing my primary hypothesis, which involved comparison of social support to other coping strategies, comparison of the relative effect of different social support subtypes, and comparison of relative impact of various sources of social support.

Table 3. Multiple Regression with Social Support Level Predicting Psychological Outcomes.

of calls vs Social Support

	DASS	PCL	MBI	STSS	BRS	PROQOL
Number Calls per Month	0.00	-0.01	0.04***	0.02	0.00	-0.01**
Social Support	-0.23 [†]	-0.38 [†]	-0.51***	-0.51**	0.12*	0.53***

Note: $p < .10^{\dagger}$, $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$. DASS = Depression Anxiety & Stress Scale. PCL = PTSD (symptom) checklist. MBI = Maslach Burnout Inventory. BRS = Brief Resilience Scale. STSS = Secondary Traumatic Stress Scale. PROQOL = Professional Quality of Life Scale.

Comparing Social Support with Other Coping Strategies

Descriptive statistics for all variables in the primary analyses are reported in Table 4, including means and standard deviations. The control variable (average numbers of calls per week, used to approximate amount of trauma exposure) has a relatively large standard deviation (119.19), indicative of high variance in sample (see Table 4). After controlling for overall amounts of social support and the other coping strategies I evaluated, the number of calls was either not predictive (i.e., DASS, PCL, and BRS), or had a very minimal impact (i.e., MBI, STSS, and PROQOL), on psychological outcomes. (see Table 5).

Table 4. Descriptive Statistics for Variables in Analyses

	Mean	Standard Deviations
Number of Calls per Month	82.26	119.19
PCL - Total	16.01	14.28
STSS - Total	30.19	12.26
DASS - Total	9.22	8.57
BRS - Total	23.76	4.14
PROQOL - Total	42.82	7.25
Brief Cope - Self-Distraction	4.59	1.55
Brief Cope - Active Coping	4.55	1.58
Brief Cope - Denial	2.20	0.59
Brief Cope - Substance Abuse	2.68	1.15
Brief Cope - Positive Reframing	4.33	1.76
Brief Cope - Humor	4.17	2.16
Brief Cope - Religion	3.99	2.20
Brief Cope - Behavioral Disengagement	2.30	0.72
Brief Cope - Venting	3.76	1.50
Brief Cope - Planning	4.15	1.77
Brief Cope - Acceptance	5.41	1.85
Brief Cope - Self-Blame	3.20	1.50
CBI – Total	37.28	9.04
CBI - Instrumental	12.57	3.01
CBI - Emotional	12.13	3.44
CBI - Assessability	12.58	3.09
CBI - Colleagues	9.36	2.93
CBI - Supervisor	9.31	3.27
CBI - Family	9.43	2.98
CBI - Friends	9.18	2.85

Note: Total = total score. Brief COPE = Brief coping inventory. CBI = Copenhagen Burnout Inventory: Social Support Subscale.

Multiple regression analyses were used to compare the relative impact of social support versus a wide variety of alternative coping strategies on psychological outcomes, after controlling for amount of stress exposure (i.e., average number of emergency calls responded to per month). Generally, social support was indicated as a stronger predictor for better mental health relative to other coping strategies. Social support was the only coping strategy that was

consistent in its association of predicting better psychological outcomes in the sample (i.e., lower psychological symptoms and higher well-being).

DASS scale. Higher total DASS scores are indicative of higher levels of depression, anxiety, and stress. Increased use of self-distraction, substance abuse, behavioral disengagement, planning, and self-blame were significantly associated ($p < .05$) with increases in DASS scores, holding social support and average number of calls per month constant. Increased use of social support was associated at a trend level ($p < .10$), with lower DASS scores holding other coping strategies and average number of calls per month constant. Relative to other coping strategies, higher levels of social support predicted lower DASS total scores at a trend level ($p < .10$; see table 5).

PCL scale. Higher total PCL scores are indicative of higher levels of PTSD symptoms. Increased self-distraction, denial, substance abuse, behavioral disengagement, planning, and self-blame were all significantly indicative ($p < .05$) of increased PTSD symptoms holding social support and average number of calls per month constant. Only increased use of social support was associated at a trend level ($p < .10$), with lower PCL scores holding other coping strategies and average number of calls per month constant. Relative to other coping strategies, higher levels of social support were generally significantly ($p < .05$) predictive of lower PCL total score (see table 5).

MBI scale. Higher total MBI scores are indicative of higher levels of job-related burnout. Increased substance abuse, humor, and behavioral disengagement were all significantly associated with increased burnout symptoms ($p < .05$), holding social support and average number of calls per month constant. Also, there was a trend ($p < .10$) for a positive association between humor and MBI total score. Increased use of social support was significantly ($p < .001$)

correlated with lower MBI scores across most models, but produced a few trend-level ($p < .10$) results as well, holding other coping strategies and average number of calls per month constant. Generally, relative to other coping strategies, higher levels of social support were significantly ($p < .05$) predictive of lower MBI total scores (see table 5).

STSS scale. Higher total STSS scores are indicative of higher levels of secondary traumatic stress symptoms. Increased self-distraction, substance abuse, and self-blame were all significantly associated with higher secondary traumatic stress symptoms ($p < .05$), while increased denial and behavioral disengagement were associated at a trend level with increased secondary traumatic stress symptoms, holding social support and average number of calls per month constant. Increased use of social support was associated with lower STSS scores at a statistically significant level ($p < .05$), holding other coping strategies and average number of calls per month constant. Relative to other coping strategies, higher levels of social support were generally significantly predictive ($p < .05$) of lower STSS total scores (see table 5).

BRS scale. Higher total BRS scores are indicative of higher levels of resilience, defined as quick recovery from stress. Increased self-distraction, behavioral disengagement, venting, planning, and self-blame were all significantly associated with ($p < .05$) decreased resilience, holding social support and average number of calls per month constant. Increased use of social support was associated, either significantly ($p < .05$) or at a trend level ($p < .10$) with higher BRS scores, holding other coping strategies and average number of calls per month constant. Relative to other coping strategies, higher levels of social support were generally predictive at a trend level ($p < .10$) of higher BRS scores (see table 5).

PROQOL scale. Higher total PROQOL scores are indicative of higher levels of compassion satisfaction. Increased substance abuse and self-blame were significantly associated

($p < .05$) with decreased compassion satisfaction, holding social support and average number of calls per month constant. Increased use of social support was associated at a significant level ($p < .001$), with higher PROQOL compassion satisfaction subscale scores, holding other coping strategies and average number of calls per month constant. Relative to other coping strategies, higher levels of social support were significantly ($p < .001$) predictive of higher PROQOL compassion satisfaction scores (see table 5).

Table 5: Coping Strategies vs Social Support

Coping Strategies	DASS (Depression, Anxiety, and Stress)			PCL (PTSD Symptoms)			MBI (Burnout)		
	# of calls	OS	SS	# of calls	OS	SS	# of calls	OS	SS
Self-Distraction	0.00	1.86**	-0.16	0.01	2.45*	-0.29	0.04***	0.35	-0.49***
Active Coping	0.00	0.26	-0.21 [†]	0.01	0.76	-0.35 [†]	0.04***	0.26	-0.21 [†]
Denial	0.01	3.53	-0.23 [†]	0.02	6.54*	-0.38 [†]	0.04***	3.55 [†]	-0.23 [†]
Substance Abuse	0.00	3.32***	-0.08	0.01	6.31***	-0.10 [†]	0.04***	3.32***	-0.08
Positive Reframing	0.00	-0.10	-0.22 [†]	0.01	0.05	-0.37 [†]	0.04***	-0.13	-0.50***
Humor	0.00	-0.22	-0.24 [†]	0.02	-0.63	-0.43 [†]	0.04***	1.25*	-0.39***
Religion	0.00	0.34	-0.22 [†]	0.01	0.08	-0.37 [†]	0.04***	-0.08	-0.50***
Behavioral Disengagement	0.00	5.7***	-0.03	0.01	10.18***	-0.04	0.04***	5.71***	-0.03
Venting	0.00	1.25 [†]	-0.19	0.01	1.06	-0.35 [†]	0.04***	0.27	-0.50***
Planning	0.00	1.16*	-0.21 [†]	0.02	2.00*	-0.35 [†]	0.04***	-0.01	-0.50***
Acceptance	0.00	-0.15	-0.23 [†]	0.01	0.58	-0.34	0.04***	0.00	-0.50***
Self-Blame	0.00	2.23**	-0.11	0.02	4.81***	-0.14	0.04***	0.95	-0.46***

Note: $p < .10^{\dagger}$, $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$. # of calls = average number of calls per week. OS = Other Strategies, SS = Social Support. Control: # of calls per month (average).

Table 5 cont. Coping Strategies vs Social Support

Coping Strategies	STSS (Secondary Traumatic Stress)			BRS (Resilience)			PROQOL (Compassion Satisfaction)		
	# of calls	OS	SS	# of calls	OS	SS	# of calls	OS	SS
Self-Distraction	0.02	1.94*	-0.44**	0.00	-0.71*	0.10 [†]	-0.01**	0.25	0.53***
Active Coping	0.02	0.27	-0.50**	0.01	0.40	0.13*	-0.01*	0.61	0.54***
Denial	0.02 [†]	4.07 [†]	-0.51**	0.00	-0.72	0.13	-0.01*	0.32	0.52***
Substance Abuse	0.02 [†]	4.89***	-0.30*	0.00	-0.52	0.10 [†]	-0.01**	-1.11*	0.48***
Positive Reframing	0.02	0.15	-0.51**	0.00	0.12	0.12*	-0.01*	0.04	0.52***
Humor	0.02	-0.08	-0.51**	0.00	0.27	0.15*	-0.01*	-0.38	0.49***
Religion	0.02 [†]	0.40	-0.50**	0.00	-0.24	0.13*	-0.01*	0.10	0.52***
Behavioral Disengagement	0.02	3.86 [†]	-0.38*	0.00	-2.28**	0.05	-0.01**	-0.73	0.50***
Venting	0.02	0.82	-0.49**	0.00	-0.87**	0.11 [†]	-0.01*	-0.24	0.52***
Planning	0.02 [†]	1.03	-0.49**	0.00	-0.69*	0.12*	-0.01*	0.19	0.53***
Acceptance	0.02	0.28	-0.49**	0.00	0.15	0.13*	-0.01*	-0.13	0.52***
Self-Blame	0.02 [†]	2.85**	-0.37*	0.00	-1.01**	0.08	0.02	-0.86*	0.48***

Note: $p < .10^{\dagger}$, $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$. N of calls = average number of calls per week. OS = Other Strategies, SS = Social Support. Control: # of calls per month (average).

Comparing Components of Social Support

Multiple regression analyses were used to compare the relative impact of different components of social support (emotional support, instrumental support, and accessibility of support) on psychological outcomes, after controlling for average number of calls per month. Backward elimination was then used to eliminate social support subtypes that were not statistically significant from the model. Generally, accessibility of social support was indicated as the most consistent predictor of better psychological outcomes (i.e., depression, general anxiety, stress, PTSD, secondary traumatic stress, and compassion satisfaction) relative to other social support subtypes (e.g., emotional support and instrumental support). However, emotional social support was also significantly associated with lower levels of burnout and higher levels of resilience relative to other social support subtypes (see table 6).

DASS scale. Increased accessibility of social support was associated at a significant level ($p < .05$) with lower DASS scores, holding other components of social support and average number of calls per month constant. Accessibility was the only component of social support in my sample to predict depression, general anxiety, and stress.

PCL scale. Increased accessibility of social support was associated at a significant level ($p < .05$) with lower PCL scores holding other components and average number of calls per month constant. Accessibility was the only component of social support in my sample to predict PTSD symptoms.

MBI scale. Average number of calls per month had minimal impact at a significant level ($p < .001$) on MBI scores. Increased emotional social support and average number of calls per month were significantly associated ($p < .001$) with lower levels of job-related burnout holding

other subtypes of social support constant. Emotional social support was the only component to predict low MBI scores in my sample.

STSS scale. Average number of calls per month had a trend level impact ($p < .10$) on STSS scores. Increased accessibility of social support was associated at a significant level ($p < .001$) of lower STSS scores. Increased average number of calls per month was associated at a trend level ($p < .10$) with STSS scores. Accessibility of support was the only component of social support that predicted secondary traumatic stress in my sample.

BRS scale. Increased emotional social support was associated at a significant level ($p < .05$) with higher BRS scores. Emotional social support is the only component of social support to have significant association with resilience in my sample.

PROQOL scale. Average number of calls per month was associated with ($p < .01$) with PROQOL- Compassion Satisfaction scores. Increased accessibility of social support was significantly associated ($p < .001$) with higher PROQOL- Compassion Satisfaction scores, and average number of calls per month was significantly associated ($p < .01$) with lower PROQOL – Compassion Satisfaction scores. Accessibility of social support was the only component of social support that was associated with higher levels of compassion satisfaction in my sample.

Table 6: Subtypes of Social Support

Subtype	DASS	PCL	MBI	STSS	BRS	PROQOL
Instrumental	--	--	--	--	--	--
Emotional	--	--	-1.35***	--	0.31*	--
Assessibility	-0.80*	-1.35*	--	-1.61***	--	1.49***
N of calls	0.00	0.01	0.04***	0.02†	0.00	-0.02**

Note: $p < .10$ †, $p < .05$ *, $p < .01$ **, $p < .001$ ***. N of calls = average number of calls per week. Backward Elimination.

Comparing Social Support Sources

Multiple regression analyses compared the relative impact of various sources of social support (i.e., colleagues, supervisor, friend, and family) on psychological outcomes, after controlling for average number of calls per month. A backward elimination procedure was used to eliminate social support sources that were not statistically significant from the model. Generally, social support from friends was the most consistent predictor of better psychological outcomes (i.e., depression, general anxiety, stress, PTSD, secondary traumatic stress, burnout, and compassion satisfaction) relative to other social support sources. Social support from one's supervisor was a strong predictor for lower burnout, higher resilience, and higher compassion satisfaction. Social support from family was only predicted higher compassion satisfaction at a trend level ($p < .10$; see table 7).

DASS scale. Increased social support from friends was associated at a significant level ($p < .01$) with lower DASS scores. Relative to other sources, higher social support from friends was more strongly associated with lower depression, general anxiety, and stress.

PCL scale. Increased social support from friends was significantly associated ($p < .05$) with lower PCL scores. Relative to other sources, higher social support from friends was more strongly associated with lower levels of PTSD symptoms.

MBI scale. Average number of calls per month was associated at a significant level ($p < .001$) with higher MBI scores. Increased social support from supervisors and friends was significantly associated ($p < .01$) with lower MBI scores. Relative to other sources, social support from friends was more strongly associated with lower job-related burnout.

STSS scale. Average number of calls per month was associated at a significant level ($p < .05$) with higher STSS scores. Increased social support from friends was significantly associated

with lower STSS scores. Social support from friends was more strongly associated with lower secondary traumatic stress, relative to other sources of social support.

BRS scale. Increased social support from supervisors was significantly associated with higher BRS scores. Social support from friends was more strongly associated with higher resilience, relative to other sources of social support.

PROQOL scale. Average number of calls per month was associated at a significant level ($p < .01$) with lower PROQOL scores. Increased social support from supervisors and friends was significantly associated ($p < .01$), and social support from family was associated at a trend level ($p < .10$), with higher PROQOL scores. Relative to other sources, social support from supervisors was more strongly associated with higher compassion satisfaction.

Table 7: Source of Social Support

Source	DASS	PCL	MBI	STSS	BRS	PROQOL
Colleagues	--	--	--	--	--	--
Supervisor	--	-	-0.96**	--	0.33*	0.85***
Family	--	-	--	--	--	0.51†
Friends	-1.11**	-1.52*	-1.17***	-1.73***	--	0.66***
N of calls	0.00	0.02	0.04***	0.02*	0.00	-0.02**

Note: $p < .10$ †, $p < .05$ *, $p < .01$ **, $p < .001$ ***. N of calls = average number of calls per week. Backward Elimination.

Discussion

Summary of Results

First responders use coping strategies (e.g., social support) to combat negative psychological symptoms and improve overall well-being, as this population is routinely exposed to traumatic events. This study evaluated the efficacy of social support relative to other coping strategies, and compared various components, and sources of social support to determine which were associated with the better mental health outcomes. The outcomes included in the present study were psychological symptoms (depression, general anxiety, stress, secondary traumatic stress, PTSD, and burnout) as well as well-being (resilience and compassion satisfaction). Social support was anticipated to be associated with better mental health among first responders (lower negative psychological symptoms and higher well-being), relative to other coping strategies. Consistent with my hypothesis, I found that social support was the most consistent predictor of helpful psychological outcomes (e.g. lower burnout and higher compassion satisfaction), even after controlling for a variety of other coping strategies (see Table 5). Additionally, among types of social support, I expected that emotional social support would be the strongest predictor of better psychological outcomes among first responders, relative to other components of social support. Results suggest higher emotional support was associated with lower burnout and higher resilience (see Table 6). However, contrary to the hypothesis, perceived accessibility of social support was the component of social support that was the most consistently predictive of beneficial psychological outcomes (predicting lower depression, stress, and general anxiety; lower PTSD; lower secondary traumatic stress, and high compassion satisfaction; see Table 6). Finally, family and friends were hypothesized to be the most helpful sources of social support. In contrast with my hypotheses, support from support from family did not significantly impact any

outcome; it was only associated with compassion satisfaction at a trend level (see Table 7). On the other hand, friends did support my hypothesis and was the most consistently predictive of beneficial psychological outcomes (see Table 7).

Preliminary Analyses

To control for the first responders' level of exposure to stress and trauma, I estimated level of stress and trauma exposure by assessing the average number of emergency calls per month that responders received. As expected, increased trauma exposure indicated higher risk for negative psychological symptoms (secondary traumatic stress and burnout) and lower risk for well-being (compassion satisfaction; see Table 2). These results show consistency with prior literature as trauma exposure is associated with higher levels of negative psychological symptoms (Kilpatrick et al., 2013). Additionally, descriptive results revealed relatively prominent levels of secondary trauma in the sample overall. First responders often have indirect exposure to a trauma, as they are the ones to help survivors of a traumatic event. Secondary trauma has been associated with several other consequences such as compassion fatigue, job-related burnout, and secondary traumatic stress (Jenkins, 2002).

In my preliminary analysis, I used a regression model to ensure that social support could be measured in relation to other psychological outcomes. Previous research has indicated that social support is a strong predictor of psychological resilience (Ozer et al., 2003). Results were consistent with past research, as social support was significantly associated ($p < .05$) or was associated a trend-level ($p < .10$) with lower levels of psychological symptoms and higher wellbeing (see table 3). These results are consistent with prior research, in supporting the role of social support as a strategy that promotes mental health among first responders.

In the data analysis, I additionally compared the relative benefits of social support with other coping strategies, compared the relative benefits of various components of social support, and compared the relative benefits of sources of social support for improving mental health. It is important to note that the control as number of calls had low association values ($b < .05$) when holding coping strategies, components of social support, and sources of social support constant (see Table 5, Table 6, & Table 7). These results may be due to number of calls having not much unique variance to explain, after controlling for social support and other coping strategies. In other words, the average number of calls per month could share overlapping variance with other factors (i.e., social support and other coping strategies), reducing its observed association with the outcomes measured in the study (see Tables 2, 3, 5, 6, and 7).

Coping Strategies vs Social Support

The first hypothesis stated social support would be the best coping strategy to predict helpful psychological outcomes (i.e., promoting well-being and reducing psychological symptoms among first responders). Results supported this hypothesis, social support was associated with better mental health, after controlling for the use of several other coping strategies. After controlling for social support, no other strategies were significantly associated with lower psychological distress (depression, anxiety, stress, secondary traumatic stress, burnout and PTSD) or higher well-being (resilience and compassion satisfaction). Results of the efficacy of social support are consistent with prior research. This coping strategy is cited to be one of the strongest predictors of psychological resilience among trauma-exposed populations (Brewin et al., 2000; Ozer et al., 2003). Social support was also found to promote mental health among first responders (Prati & Pietrantonio, 2010) and reduce job-related burnout among university employees (Montero-Marín et al., 2014). Additionally, people with dedicated support

systems have shown lessening or elimination of negative psychological symptoms (Cohen & McKay, 1984). This is contrasted with the results for DASS and PCL where the significance was at a trend level (low statistical significance). Low statistical significance may be due to less variance in the outcomes in this present sample (i.e. most participants had low amount of PTSD and general psychological distress, so there was less variance in the outcomes to explain by the predictors in the model).

A few other coping strategies were demonstrated to be consistently detrimental to mental health, even after controlling for level of social support. Substance abuse, behavioral disengagement, and self-blame were all significantly associated with higher levels of psychological symptoms and lower well-being (resilience and compassion satisfaction). Results from the current study imply that these coping strategies may have particularly harmful effects on psychological outcomes, so perhaps should be avoided when coping with significant stressors or traumatic events.

To the best of my knowledge, this is the first study to directly compare the potential benefits of social support to other possible coping strategies in a sample with high levels of stress exposure. Data from the study confirmed my hypothesis, that social support is the one coping strategy that would be most consistently associated with improved mental health and among first responders.

Components of Social Support

The second hypothesis explored the components of social support and determined emotional social support to be the most effective in decreasing negative psychological symptoms and promoting well-being. After controlling for trauma exposure, emotional support was associated with lower burnout and higher resilience, although emotional support did not predict

lower depression, lower generalized anxiety, lower stress, lower PTSD symptoms, lower secondary traumatic stress, and higher compassion satisfaction (see Table 6). These results were therefore somewhat consistent with past research, such as Pennebaker and Seagal's (1999) finding that disclosing emotional experiences in the context of journaling was associated with better psychological and physical outcomes in the long term. However, my findings contradicted results from Jacobson and colleagues (2017), who found that higher emotional social support was associated with lower anxiety and depression. Instrumental social support (i.e., support with tools and materials for information, time, or work) did not have a significant impact on psychological outcomes in my sample of first responders. One potential explanation of these results may be that instrumental support may temporarily subside the negative psychological outcomes, but does not help nor resolve the outcomes in the long-term. Accessibility of social support was demonstrated to have the most consistent positive impact across the psychological outcomes evaluated in this study (depression, generalized anxiety, stress, PTSD, secondary traumatic stress, and compassion satisfaction). Lower psychological symptoms and higher well-being suggest accessibility of social support is the component of social support that had the strongest impact on promoting mental health among first responders, even after controlling for other aspects of social support (e.g., emotional support and instrumental support). To the best of my knowledge, this is the first study to directly compare the efficacy of different components of social support for promoting mental health among first responders.

This study sheds some light on which aspects of social support are the most helpful to optimize promotion of mental health among first responders. From the data, perceived accessibility of social support seems to be the most consistently beneficial across outcomes. Allowing the first responder to know that social support is available if needed may be important

factors in reducing negative psychological outcomes and increasing well-being. There are many ways to divide social support into components (e.g., Sherbourne & Stewart, 1991). Sherbourne and Stewart (1991) wrote about a widely accepted model to divide social support into emotional, informational, tangible, and positive social interaction. The present study only evaluates three types (instrumental, emotional, and accessibility), therefore the conclusions are somewhat limited. Accessibility of social support cannot be concluded to be the best subtype relative to the ones not included in this study; however, the accessibility can be concluded to be the most helpful component of social support relative to instrumental and emotional social support. Future research should evaluate the relative efficacy of other subtypes of social support (e.g. positive social interactions) for promoting mental health.

Sources of Social Support

The third hypothesis evaluated whether the source of social support was indicative of predicting negative psychological symptoms and well-being. I hypothesized that family and friends would be the most helpful sources of social support, in terms of having the largest impact on mental health. Results only partially confirmed this hypothesis, as support from family was only associated with higher compassion satisfaction at a trend level. Support from friends had the most consistent association with mental health across outcomes (except for resilience; see Table 7). Support from colleagues was not predictive of any mental health outcome evaluated in the present study (see Table 7). However, it is possible that participants classified close colleagues as friends. Based on these results, family support may not be as effective as support from friends. It is possible that when speaking with friends, first responders may be more comfortable discussing details about the traumatic event. First responders may not seek out family members, or reveal as much to family members, to reduce their family members' concerns for their safety. First

responders have difficult and often dangerous jobs (e.g. experience trauma routinely), so it could be difficult to share these experiences with family. Friends could potentially be an easier outlet for social support, and particularly friends who are also first responders, because these friends may be able to relate more to their experiences and may be better at coping with hearing about stressful or dangerous events encountered on the job. Support from supervisors was significantly associated with lower burnout, higher resilience, and higher compassion satisfaction. Supervisors often oversee the work of first responders. Receiving social support from them may have more value for job-related outcomes (e.g. burnout and compassion satisfaction). This may be due to responders knowing a supervisor is there to support them through the job to reduce burnout. Additionally, support from supervisors may reassure responders that they are doing an excellent job providing for survivors of traumatic events, which could lead to higher compassion satisfaction.

Future Directions

This study has several strengths, including being the first to compare social support directly with other coping strategies in terms of its impact on mental health. Furthermore, this was the first study to compare the relative utility of various aspects of social support (emotional, instrumental, and perceived accessibility) and various sources of social support (supervisors, colleagues, friends, and family) for promoting mental health. However, findings should be interpreted with caution due to limitations of the study. First, the sample size was relatively limited ($N = 69$). The small sample size reduces statistical power, so it is possible that we were unable to detect smaller effects. The small sample size may also indicate bias; only a small percentage of those emailed responded by completing the survey (i.e., 15% response rate), which may reduce the generalization of the data to the larger population of first responders.

Furthermore, the cross-sectional design of the study limits any causal inferences. Because the study was cross-sectional, we can only draw conclusions about association and not causation. Follow-up studies using longitudinal methods or experiments (e.g. testing the efficacy of treatment/prevention strategies for promoting social support) could be used to strengthen causal inferences. Importantly, these findings provide preliminary data that may help guide these future studies, and in the long run could inform the development of social support programs to reduce the impact of stressful events on mental health in first responders.

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Appendix A

Recruitment Email

Hi,

I'm Benson Tran, a volunteer in the Trauma Intervention Program and a student in the Honors College at the University of Nevada, Reno. My mentor, Dr. Cynthia Lancaster, and I are recruiting volunteers to complete a [survey about the experiences of first responders](#).

If you are first responder (either professional or volunteer) with prior experience responding to at least one emergency or crisis call, and you are 18 or older, you are eligible to participate. If you complete the full survey, you will [receive \\$20](#) in an electronic Visa Gift card. The survey is estimated to take [about 30 minutes](#).

Your responses will be used to [help other first responders](#). Specifically, these surveys will help us understand more about the impact of stressful events in first responders, and what contributes to wellbeing and recovery after stress exposure. This information could help guide the development of programs to reduce burnout and promote resilience among first responders.

[If you are interested in participating, please click on the survey link below.](#)

Survey Link: [INSERT QUALTRICS LINK HERE]

If you have any questions about the study, please feel free to contact the research team at firstresponderstudy@gmail.com. You can also contact the Principal Investigator, Dr. Cynthia Lancaster, at cynthialancaster@unr.edu.

Sincerely,

Benson Tran

Undergraduate Honors Student

The University of Nevada, Reno

Appendix B

First Responder Experience Survey: Consent Information Sheet

Eligibility. To be eligible to complete this survey, you must:

- 1) **Be over 18 years of age.**
- 2) **Be a first responder**, which means that you are among those responsible for going immediately to the scene of an accident or emergency to provide assistance. Examples of first responders include (but are not limited to) **police officers, firefighters, paramedics or emergency medical personnel, and members of the Trauma Intervention Program**. Eligible first responders could be paid professionally or work as volunteers.
- 3) Have prior experience with responding to **one or more emergencies or crisis calls**.

Purpose. We are conducting a survey study to learn more about first responders' experience. This includes examining the psychological impact of stressful events, and what contributes to wellbeing and recovery after stress exposure.

Procedures. If you agree to be in this study, you will be asked to complete a set of questionnaires estimated to take **about 30 minutes**.

Compensation. You will receive a **\$20 Visa gift card** in return for completion of the full survey. This gift card will be sent to the email address you provide at the end of the survey. You will be asked to complete a few initial screening questions to determine that you meet the eligibility criteria listed above. If you do not meet these criteria, you will not be eligible to receive compensation. If you do not complete the full survey, you will not be eligible to receive compensation.

Risks. This study involves minimal risk. Some survey questions could be considered sensitive in nature, so it is possible that you could experience some psychological distress while completing the survey. However, it is anticipated that any distress you experience will be similar in type or intensity to what you encounter during daily activities. If you experience emotional distress, a 24-hour crisis hotline is available. You can reach the National Suicide Prevention hotline at 1-800-273-8255.

Benefits. Personal benefit will include financial compensation (\$20 electronic Visa Gift Card) after survey completion. Furthermore, your participation could benefit other first responders. By providing information about your experiences, you will help us develop a better understanding about factors that promote wellbeing and recovery after stress exposure among first responders. This information could then be used to help guide the development of programs to improve psychological health among first responders and other groups with high levels of stress exposure.

Privacy. We will not ask you to provide any private identifying information, except for your email address, which will be used only for the purpose of providing compensation. Survey information will be collected either on paper forms or online through Qualtrics. When data is entered from paper forms, or after data is downloaded from Qualtrics, email addresses will be removed from the data prior to storage of the dataset.

The researchers and the University of Nevada, Reno will treat your identity and the information collected about you with professional standards of confidentiality and protect it to the extent allowed by law. You will not be personally identified in any reports or publications that may result from this study. The US Department of Health and Human Services, the University of Nevada, Reno Research Integrity Office, and the Institutional Review Board may look at your study records.

Study Contact Information. Please contact the Principal Investigator, Dr. Cynthia Lancaster (cynthialancaster@unr.edu) with any questions about the study.

You may ask about your rights as a research participant. If you have questions, concerns, or complaints about this research, you may report them (anonymously if you so choose) by calling the University of Nevada, Reno Research Integrity Office at 775.327.2368.

Voluntary participation. Your participation in this study is **completely voluntary**. You may stop at any time. Declining to participate or stopping your participation will not have any negative effects.

If you agree to participate, please continue with the survey.

Appendix C

Study Eligibility Questionnaire

1) Are you 18 or older?

Yes, I am age 18 or older.

No, I am younger than 18.

2) Are you a first responder? (Respond *yes* if you are among those responsible for going immediately to the scene of an accident or emergency to provide assistance. Examples of first responders include (but are not limited to) police officers, firefighters, paramedics or emergency medical personnel, and members of the Trauma Intervention Program. Eligible first responders could be paid professionally or could work as volunteers.)

Yes, I am a first responder.

No, I am not a first responder.

3) Do you have experience responding to one or more emergencies or crisis calls?

Yes, I have responded to one or more emergencies or crisis calls.

No, I have never responded to an emergency or crisis call.

[If participant answers 'no' on any of the three questions above, responder is not eligible to complete the study or receive compensation.]

Demographics Questionnaire

Select the first responder organization(s) you are affiliated with:

- Police Department
- Fire Department
- Emergency Medical Services
- Trauma Intervention Program
- Other. If you selected other, write the name of the organization here: _____

How many hours per week do you work, on average?

- 40 or more hours per week
- 35-39 hours per week
- 30-34 hours per week
- 25-29 hours per week
- 20-24 hours per week
- 15-19 hours per week
- 10-14 hours per week
- 5-9 hours per week
- 0-4 hours per week

In all the time that you have worked or volunteered as a first responder, how many calls have you responded to on average each month (please provide your best estimate)?

_____ emergencies/calls per month on average

How many calls did you respond to last month (please provide your best estimate)?

_____ emergencies/calls last month

What is your age?

- 65 or more years
- 60-64 years
- 55-59 years
- 50-54 years
- 45-49 years
- 40-44 years
- 35-39 years
- 30-34 years
- 25-29 years
- 20-24 years
- 18-19 years

What is your gender?

- Male
- Female
- Trans male-to-female
- Trans female-to-male
- Non-binary

Brief Coping Orientation to Problems Experienced

These items deal with ways you've been coping with the stress in your life since you have been working as a first responder. There are many ways to try to deal with stressful experiences. [These items ask what you've been doing to cope with stress related to your work as a first responder.](#) Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

- 1 = I haven't been doing this at all
- 2 = I've been doing this a little bit
- 3 = I've been doing this a medium amount
- 4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation I'm in.
3. I've been saying to myself "this isn't real."
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've been giving up trying to deal with it.
7. I've been taking action to try to make the situation better.
8. I've been refusing to believe that it has happened.
9. I've been saying things to let my unpleasant feelings escape.
10. I've been getting help and advice from other people.
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light, to make it seem more positive.
13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of the fact that it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation

Copenhagen Burnout Inventory: Social Support Subscale

Appendix C Social support scales

<i>Instruction</i>				
Here, you assess how satisfied you are with the social support you have received in the last 2-3 months. Please distinguish between two kinds of social support.				
A: Instrumental social support, for example characterized by...				
- My partner, friends, my supervisor, or colleagues offer their help when I am under pressure: with tools and materials for work, information, time...				
- Your supervisor is considerate of your private or family needs e.g. with regard to work schedules, vacation planning...				
B: Emotional or cognitive support, for example...				
- You receive encouragement, consolation, and motivation...				
- People listen to you, show understanding take your worries for seriously...				
1. How satisfied are you with the <u>instrumental support</u> from your...				
...colleagues? (SSINSCOL)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...supervisor? (SSINSSUP)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...family or partner? (SSINSFAM)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...friends? (SSINSFRI)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
2. How satisfied are you with the <u>emotional support</u> from your ...				
...colleagues? (SSEMOCOL)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...supervisor? (SSEMOSUP)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...family or partner? (SSEMOFAM)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...friends? (SSEMOFRI)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
3. How satisfied are you with the <u>accessibility and availability</u> of the support from your...				
...colleagues? (SSACCCOL)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...supervisor? (SSACCSUP)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...family or partner? (SSACCFAM)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4
...friends? (SSACCFRI)				
very dissatisfied	rather dissatisfied	neutral/half-and-half	rather satisfied	very satisfied
0	1	2	3	4

Posttraumatic Traumatic Stress Disorder Checklist

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

Secondary Traumatic Stress Scale

The following is a list of statements made by persons who have been impacted by their work with traumatized clients. Read each statement then indicate how frequently the statement was true for you in the past **seven (7) days** by circling the corresponding number next to the statement.

NOTE: "Client" is used to indicate persons with whom you have been engaged in a helping relationship. You may substitute another noun that better represents your work such as consumer, patient, recipient, etc.

	Never	Rarely	Occasionally	Often	Very Often
1. I felt emotionally numb.....	1	2	3	4	5
2. My heart started pounding when I thought about my work with clients.....	1	2	3	4	5
3. It seemed as if I was reliving the trauma(s) experienced by my client(s).....	1	2	3	4	5
4. I had trouble sleeping.....	1	2	3	4	5
5. I felt discouraged about the future.....	1	2	3	4	5
6. Reminders of my work with clients upset me.....	1	2	3	4	5
7. I had little interest in being around others.....	1	2	3	4	5
8. I felt jumpy.....	1	2	3	4	5
9. I was less active than usual.....	1	2	3	4	5
10. I thought about my work with clients when I didn't intend to.....	1	2	3	4	5
11. I had trouble concentrating.....	1	2	3	4	5
12. I avoided people, places, or things that reminded me of my work with clients.....	1	2	3	4	5
13. I had disturbing dreams about my work with clients.....	1	2	3	4	5
14. I wanted to avoid working with some clients.....	1	2	3	4	5
15. I was easily annoyed.....	1	2	3	4	5
16. I expected something bad to happen.....	1	2	3	4	5
17. I noticed gaps in my memory about client sessions.....	1	2	3	4	5

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Intrusion Subscale (add items 2, 3, 6, 10, 13)

Avoidance Subscale (add items 1, 5, 7, 9, 12, 14, 17)

Arousal Subscale (add items 4, 8, 11, 15, 16)

TOTAL (add Intrusion, Arousal, and Avoidance Scores)

Intrusion Score _____

Avoidance Score _____

Arousal Score _____

Total Score _____

Depression, Anxiety, and Stress Scale

DASS 21

 NAME

 DATE


Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all - NEVER
- 1 Applied to me to some degree, or some of the time – SOMETIMES
- 2 Applied to me to a considerable degree, or a good part of time – OFTEN
- 3 Applied to me very much, or most of the time - ALMOST ALWAYS

		Select	FOR OFFICE USE		
		0 1 2 3	D	A	S
1.	I found it hard to wind down				
2.	I was aware of dryness of my mouth				
3.	I couldn't seem to experience any positive feeling at all				
4.	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)				
5.	I found it difficult to work up the initiative to do things				
6.	I tended to over-react to situations				
7.	I experienced trembling (eg, in the hands)				
8.	I felt that I was using a lot of nervous energy				
9.	I was worried about situations in which I might panic and make a fool of myself				
10.	I felt that I had nothing to look forward to				
11.	I found myself getting agitated				
12.	I found it difficult to relax				
13.	I felt down-hearted and blue				
14.	I was intolerant of anything that kept me from getting on with what I was doing				
15.	I felt I was close to panic				
16.	I was unable to become enthusiastic about anything				
17.	I felt I wasn't worth much as a person				
18.	I felt that I was rather touchy				
19.	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)				
20.	I felt scared without any good reason				
21.	I felt that life was meaningless				
TOTALS			0	0	0

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Maslach Burnout Inventory

Instructions: For each statement, mark the box that most accurately reflects your response. In this survey, the word “clients” refers to individuals you help in your capacity as a first responder. “Job” and “work” refer to your work as a first responder.

Maslach Burnout Inventory (Abbreviated) – MBI-9

Maslach C, et al. *The Maslach Burnout Inventory*. 3rd ed. 1996

How often:	Never	A few times a year	Once a month or less	A few times a month	Once a week	A few times a week	Every day
	0	1	2	3	4	5	6
1) I deal very effectively with the problems of my clients and colleagues.							
2) I feel I treat some clients and colleagues as if they were impersonal objects.							
3) I feel emotionally drained from my work.							
4) I feel fatigued when I get up in the morning and have to face another day on the job.							
5) I've become more calloused towards people since I took this job							
6) I feel I'm positively influencing other people's lives through my work.							
7) Working with people all day is really a strain for me.							
8) I don't really care what happens to some people I deal with at work.							
9) I feel exhilarated after working closely with my clients and colleagues.							
Add items 1, 6, 9	Add items 2, 5, 8		Add items 3,4,7				
TOTAL _____	TOTAL _____		TOTAL _____				
Personal Accomplishment	Depersonalization		Emotional Exhaustion				
≥ 15 : low burnout 13-14: moderate burnout ≤ 12 : high burnout	≤ 3 : low burnout 4-6: moderate burnout ≥ 7 : high burnout		≤ 6 : low burnout 7-10: moderate burnout ≥ 11 : high burnout				

Brief Resilience Scale

Please respond to each item by marking one box per row		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BRS 1	I tend to bounce back quickly after hard times	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 2	I have a hard time making it through stressful events.	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
BRS 3	It does not take me long to recover from a stressful event.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 4	It is hard for me to snap back when something bad happens.	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
BRS 5	I usually come through difficult times with little trouble.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 6	I tend to take a long time to get over set-backs in my life.	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

Professional Quality of Life Scale - Modified

When you help people as a first responder you have direct contact with their lives. As you may have found, your compassion for those you help can affect you in positive and negative ways. **Below are some questions about your experiences, both positive and negative, as a first responder.** Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in **the last 30 days**.

1= Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often

1. I get satisfaction from being able to help people.
2. I feel invigorated after working with those I help.
3. I like my work as a first responder.
4. I am pleased with how I am able to keep up with first responder techniques and protocols.
5. My work makes me feel satisfied.
6. I have happy thoughts and feelings about those I help and how I could help them.
7. I believe I can make a difference through my work.
8. I am proud of what I can do to help.
9. I have thoughts that I am a "success" as a first responder.
10. I am happy that I chose to do this work